



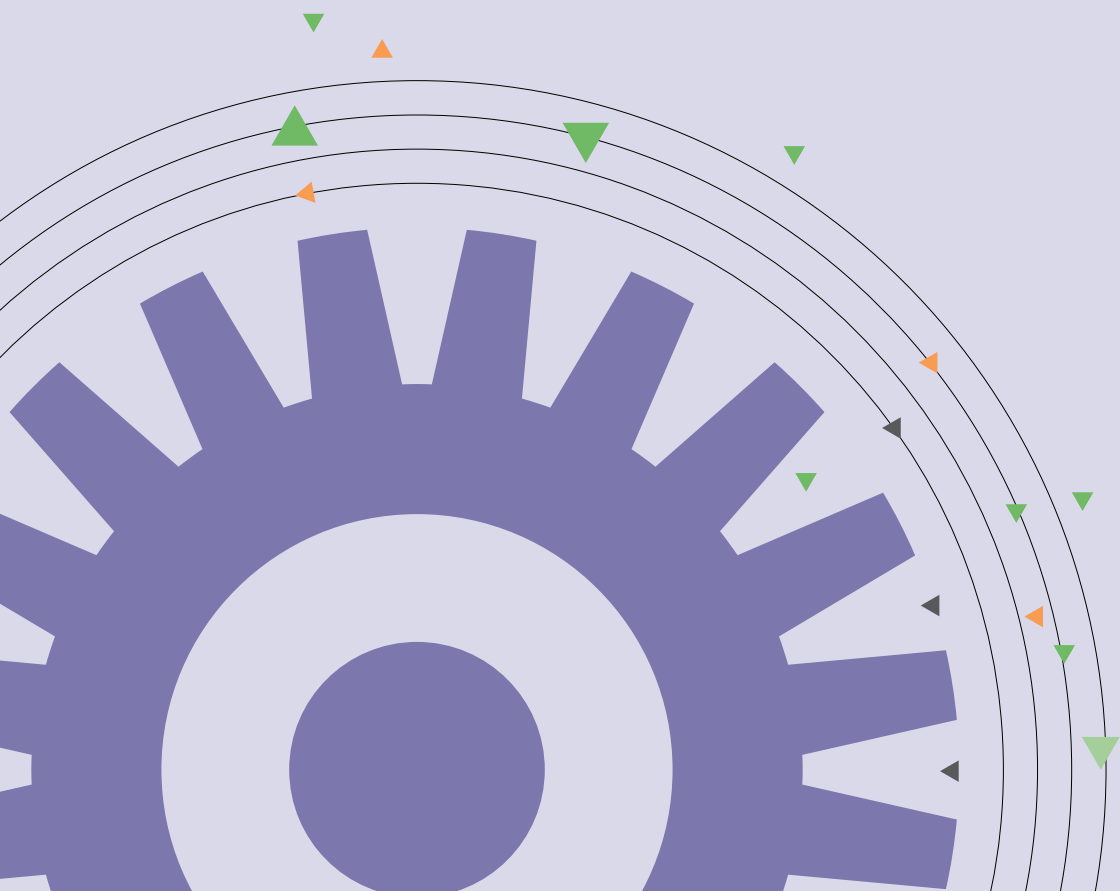
Confederation of Indian Industry



# INDUSTRIAL INNOVATION AWARDS 2019

Top innovative companies

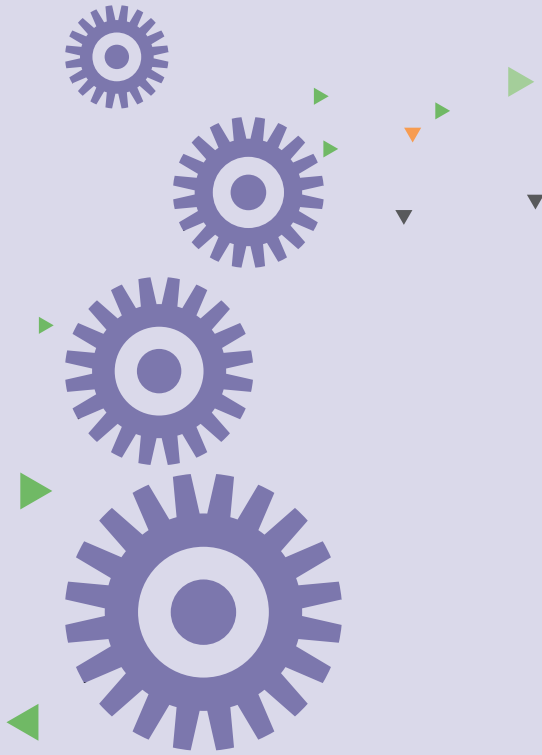






# INDUSTRIAL INNOVATION AWARDS 2019

Top innovative companies



**Published by:**

Confederation of Indian Industry

249-F, Udyog Vihar

Phase-IV, Sector-18

Gurgaon-122 015 (Haryana)

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Disclaimer: This Compendium has been prepared based on the information provided by top applicants identified/screened during the evaluation process of CII Industrial Innovation Awards 2019. While an attempt has been made to ascertain the authenticity of information submitted by these applicants during the award evaluation process and compilation of case studies for the compendium; CII at no point will be responsible for the accuracy or correctness of such data or any consequential loss arising thereof.

# FOREWORD

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**Chandrajit Banerjee**  
Director General, CII

Innovation has been the key driver for the sustenance, growth and prosperity of a nation's economy and has been instrumental for the measurable value-enhancement in any activity.

As India paves the way for economic development, the country needs to uplift its large population into much higher pedestal of prosperity in the quickest possible time. Such rapid economic progress can only be possible by innovation driven actions and businesses by all the stakeholders. India's young demographic fabric, robust demand, and a large digitally enabled middle class are some of the rare advantages that has enabled the country to thrive in an era of disruptive technologies. Towards this direction, India is redefining innovation in a larger perspective, putting social values as well as economic benefits at the centre stage.

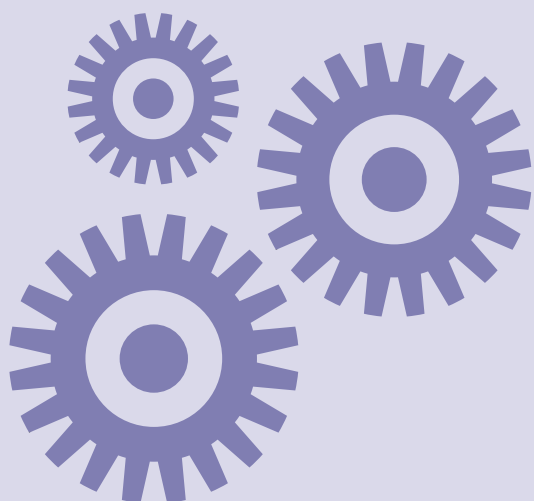
The much-coveted **industrial innovation awards** instituted by CII celebrates innovation excellence in India. The top 25 award winners are selected after a rigorous assessment based on the innovation framework for firms developed by CII. A jury comprising of eminent experts in the country selected the category award winners. In this 6th edition of awards, the quality of applications has been an indicator of India's rising performance with enhanced industrial innovation capacity and outputs.

While this compendium is only a small bouquet of case-studies of top 25 companies, which were recognized for their innovation and best practices in 2019, India is teeming with a large array of young innovators with enviable entrepreneurial spirits. This publication would offer key insights in innovation for the industry.

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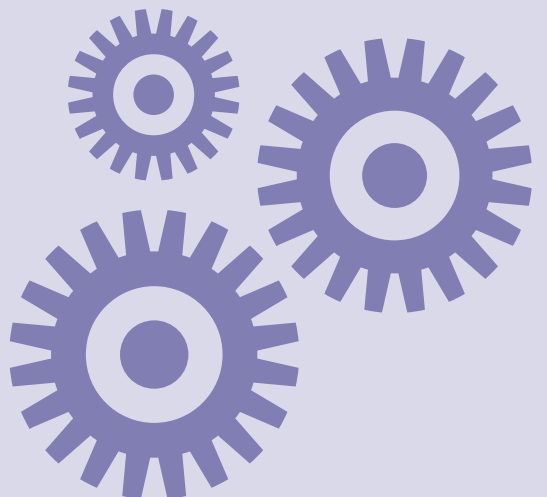


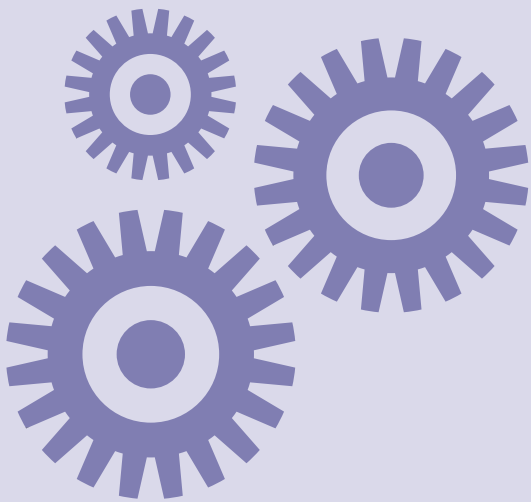
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## Award Winners

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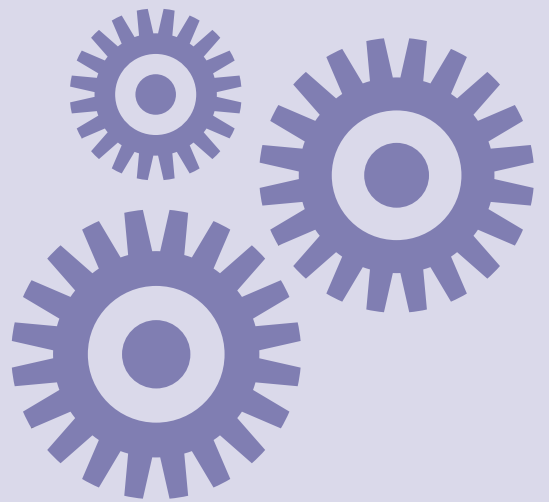
- Grand Winner (Most Innovative Company)  
**JCB India**
- Manufacturing Large Enterprise (Joint winners)
  - **Amararaja Batteries Limited**
  - **JCB India**
  - **Sterlite Technologies Limited**
- Manufacturing Medium Enterprise  
**Fluid Controls Pvt Ltd**
- Manufacturing Small Enterprise  
**Falco eMotors Pvt Ltd**
- Service Large Enterprise  
**L&T Technology Services**
- Service Small Enterprise  
**Loocafe - An Ixora Corporate Services Initiative**
- Manufacturing Special Products  
**Bank Note Press, Dewas (MP), A Unit of SPMCIL, New Delhi**
- Manufacturing Agri Products  
**Advanta (UPL Company)**







# Top 25 Innovative Companies 2019





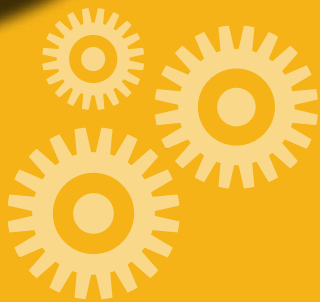
# JCB India

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JCB India Limited is a leading manufacturer of earthmoving and construction equipment in India. It started operations in 1979 and introduced the first Backhoe in India in 1980s and innovated and expanded its product portfolio in next four decades. JCB India has five manufacturing facilities; one in Ballabgarh, Haryana, two in Pune and two in Jaipur. The Ballabgarh facility is the world's largest backhoe loader plant which also manufactures the JCB "ecoMAX<sup>®</sup>" engine. JCB India currently offers an extensive range of over 60 variants in 9 product lines. These include: backhoe loaders, excavators, compactors, wheel loaders, telescopic handlers, skid steers, and generators.

The state of the art, JCB India design centre, caters to the global innovation and product development programmes. JCB India is exporting its machines to 106 countries including US, Europe, Russia, Latin America, Brazil, SAARC region countries and Middle East. The brand image of JCB company is iconic worldwide and synonymous with earth moving and construction equipment industry in India.



# The Innovation

## Innovation 1: JCB India Backhoe Loader

The All New 3DX Loader, with its 30 new industry first and 5 world's first features, including the AMT (Automatic Manual Transmission), multiple modes of operations, smart machine diagnostics and 'guide me home' features.

These were amalgamation of innovative frugal technologies bundled into 3DX excellence, including the energy efficiency programmes (under umbrella programme code-named LEEP® – Leadership through Energy Efficient Products) delivering fuel efficiency; ecoMAX Engine (Naturally Aspirated with External EGR); smart power management technology, long-life in structures, and ergonomics to suit Indian market.

## Innovation 2: JCB IoT Innovation in Telematics

The IoT Innovation, Livelink, along with Intelli-series technologies is created for 24x7 real-time connectivity of JCB machines. Intelli-coach is intelligent compaction assistance system deployed on JCB Compactor and increases its productivity by reducing number of passes required for compaction job. Similarly, Intelli-load is Loader productivity management system on wheel loading showels to optimize loading performance of the wheel loaders.

## Innovation 3: JCB Telehandler – Loadall

This is a versatile next-gen telescopic handler. Designed and developed completely in India, Loadall is major disruptive, Blue ocean Innovation by JCB with huge commonality with Backhoe. It is a versatile Innovative with perfection of 4 machines in 1, performing machine handling in 25 different segments, like scrap handling, paper, palletization, etc.

# The Approach

### For Innovation 1:

3DX BACKHOE – An umbrella of multiple innovations in form of LEEP for leadership through energy efficiency programs was implemented on the backhoe platform.

### For Innovation 2:

IoT – Livelink. Deployment of Telematics Innovation Livelink and integrating it with Intelli-technologies. Setting up an uptime command centre for Livelink.

### For Innovation 3:

Equipment needs to be innovative, frugal to match Indian customer economics, and versatile to handle more than one job simultaneously. Hence the Backhoe concept was extended and revisited to innovate JCB innovation in telehandlers – the Loadall.

# The Benefits

### For Innovation 1:

- Reduction in fuel consumption of the backhoe machine by 40%. As result, JCB backhoes are the most fuel-efficient backhoes on the earth.

### For Innovation 2:

- 24x7 asset connectivity. More than 1,30,000 connected JCB machines with its command centre through the LIVELINK Innovation.

### For Innovation 3:

- Loadall India is a Blue Ocean Innovation in India. Loadall created market disruption, 150% annual increase in India Telehandler market consistently for last two years.

# The Future

1. 3DX BACKHOE –
  - Launch of new series of fuel efficiency technologies on the backhoe platform.
  - Best in class structures with composite material innovations.
2. Deployment of Next-gen JCB IoT – LIVELINK
3. Loadall – Enhanced versatility using multiple jigs and attachments.



# Amararaja Batteries Limited

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Amara Raja is amongst India's leading business conglomerates with interests spanning verticals from the production of lead-acid batteries (AMARON brand), power conversion products, sheet metal products, precision components, electronic products, infrastructure development, industrial services to food processing. Amara Raja Group employs a workforce of more than 15000 people with a net revenue of around USD 1.2 billion during the financial year 2018-19.

Amara Raja Batteries Limited (ARBL), the flagship company of the Amara Raja Group, is the technology leader and is one of the largest manufacturers of lead-acid batteries for both industrial and automotive applications in the Indian storage battery industry.

ARBL has prestigious original equipment manufacturers like Maruti Suzuki India Limited, Hyundai Motors India Limited, Ford India Limited, Tata Motors Limited, Mahindra and Mahindra Limited, Honda Motorcycles & Scooters India Private Ltd, Royal Enfield and many more as its clients.

In India, Amara Raja is the preferred supplier to major telecom service providers, telecom equipment manufacturers, UPS sector (OEM & Replacement), Indian Railways and to power, oil & gas among other industry segments.

The company's industrial and automotive batteries are exported to 32 countries across the globe.



## The Innovation

### Innovation 1

ARBL's had directed considerable efforts for the design and development of world's first 'Multi-Grid Punching & Pasting' technology for two wheeler automotive battery.

The technology involves lead strip making with cold rolling process to create fine grain structure (for corrosion resistance) followed by unique high speed multi grid punching and pasting. The continuous process flow, minimal scrap, improved process capability pasting and high speed dividing are among important technology features

### Innovation 2

Formation is an integral process of lead acid battery manufacturing and defines product performance. Single shot formation technology in DIN range batteries results in high cycle time, high energy consumption and low throughput

Cover and venting design of DIN battery does not allow adoption of advanced and efficient double shot formation due to electrolyte clogging and vent path leakage

Driven by ARBL's vision of green technology development through energy conservation initiatives, the indigenously developed 'Gang Vent Cleaning Technology' using vacuum and blowing technique was introduced to enable efficient double short formation process for DIN battery range

### Innovation 3

Batteries for Off-road/commercial automobile applications have stringent safety and performance requirements. Challenge was to create a novel battery cover for electrolyte retention, venting and vibration resistance within specified product dimension.

ARBL's core team worked with OEM engineers and end users employing simulation, modelling and operational conditions. Indigenously developed Liq Arr™ venting system provide a special path for release of gasses formed in positive and negative plates during charging and discharge of battery along with superior drain back design - a path by design is made in the vent for acid to drain back into the battery.

## The Benefits

### For Innovation 1:

- Lead alloy conservation by ~750 MT/Annum @ 10 Mn Batteries of Representative Model
- Productivity increase by 20%

### For Innovation 2:

- Power conservation by 10 %
- Formation process cycle time reduction by 20% and throughput improvement by 5 %

### For Innovation 3:

- Available to customer with no cost impact
- Acid retention up to 450 battery tilt
- Vibration resistance up to accelerated 4.3 G level and cover flush vent plugs for clamping stability

## The Future

- Next generation energy storage technology solutions for e-mobility and standby applications
- Smart manufacturing through Industry 4.0 digitization
- Technology deployment to create continuous employee development platform that enables seamless performance management, fostering values and automated feedback system



# Sterlite Technologies Limited

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Sterlite Technologies Limited (STL) has been a global leader in end-to-end data network solutions. The company has designed and deployed high-capacity converged fibre and wireless networks. With expertise ranging from optical fibre and cables, hyper-scale network design, and deployment and network software, they are the industry's leading integrated solutions provider for global data networks. The company partners with global telecom companies, cloud companies, citizen networks and large enterprises to design, build and manage such cloud-native software-defined networks. STL has strong presence in India, Italy, China, UK and Brazil.



## The Innovation

Tru Ribbon is world's highest fibre density in the most compact cable package. Their innovative technology enables them to pack more fibres in the smallest diameter optical fibre cables.

To achieve the most compact cable, size of optical fibre made of glass is reduced from 250 microns to 200 microns, while redesigning the waveguide of optical fibre that transmits light signals.

Reducing the size of glass optical fibre adversely impacts its physical properties such as strength and brittleness, hence they developed new coatings to compensate the loss of physical properties.

Further ribbon was redesigned (from a flat surface) to a corrugated-shaped surface at micron level and commercially scalable low cost manufacturing processes. Ribbon are stacked in an innovative way to reduce a few more microns. Thus, every single element of cable was optimized.

## The Approach

A few years back, they predicted that due to exponentially increasing demand of data, fibre count in cables is set to increase from maximum of 1000 fibre in a cable to average of 10000+ fibres in a cable. OOT players such as Facebook, Amazon, etc. and Industry 4.0 technologies such as IoT are key driver of data demand. From their co-innovation initiatives (called Tech Spark) with customers it was clear that the existing cables would not be suitable due to handling and logistic issues, among others.

After several design thinking workshops internally and with external eco-system, STL zeroed in on Tru Ribbon that involved reducing size of every component of a cable package.

Development involved several failures, unanticipated technical challenges, budget overshoot and long and expected development cycle. The company continued their focus on development despite failures due to their commitments to customers.

All their global expertise and academic and industry partners came together to create commercially viable Tru Ribbon.

## The Benefits

Tru Ribbon is 30% slimmer than any other competing technology and uses 23% less plastic. Its corrugated surface allows 76% automatic splicing and its compact design allows for ~10 Kms of 10000 fibre count cable packages in a standard truck, compared to 1 Km of conventional cable package of 10000 fibre count. This leads to faster network deployment and 34% less installation cost saved in transporting, storing and joining the cables. Its design allows 100% backward compatibility to existing networks and its lower BOM cost allows STL to offer Tru Ribbon at commercially viable price.

All above factors lead to a world class technology that is commercially viable and is being shipped to world's largest OTT players and telcos.

## The Future

They are committed to achieve 50% reduction in the size along with supportive ecosystem in the next 3 years.



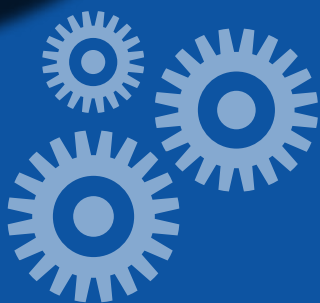
# Fluid Controls Pvt Ltd

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Established in 1974, Fluid Controls is a leading provider of instrumentation products and services for a wide variety of industrial applications. Headquartered in Mumbai, the group has manufacturing facilities in Pune and Goa, including a state-of-the-art R&D centre and testing laboratory.

Fluid Controls offers clients a complete spectrum of instrumentation hardware, ranging from instrumentation fittings, valves, manifolds and air headers to DIN pipe clamps, SAE flanges and condensate pots. They also offer customised close coupled instrument hook-ups, high pressure needle valves to 30,000psi, a range of gas valves for turbine applications and block and bleed valves.

The company is a premier supplier to onshore and off-shore oil and gas installations, process and power plants and railways in India. It is approved by all leading OEM's, including ONGC (offshore/onshore), NTPC, NPCIL, BHEL, GAIL, SAIL, and RINL and the company has over 25 years of expertise in overseas sales to clients in North America, Europe, the Middle East and South East Asia.





## The Innovation

### **Innovation 1:**

The company worked on developing a unique metallurgical heat treatment process, which would be suitable for their product design. They curated a process for heat treating austenitic stainless-steel ferrule at low temperatures to impart a balance of surface hardness and corrosion resistance, which can be processed in commonly available nitriding furnaces.

### **Innovation 2:**

The company has designed a seal, for a needle valve, which would work with high temperature of 300degC and high pressure of 110kg/cm<sup>2</sup> steam for 150cycles of open and close. This saves cost and increases reliability of the sealing because the combination of materials works better than a single material.

## The Future

**For Innovation 1:** They aims to reduce the cycle time of the hardening process.

**For Innovation 2:** They also aims to make the product lighter.



# Falco eMotors Pvt Ltd

Falco eMotors has a long history of innovation in the field of permanent magnet brushless motors and drives for new age applications. Since 2009, It has been an innovator of highly complex motors, drives and systems in personalized transportation solutions. In 2011, Falco unveiled the 5-Phase technology for electric bikes. In 2017, It achieved a significant technological breakthrough in High Volume Low Speed Fans using PMSM technology with lowest carbon footprint and highest torque and airflow per watt in the world. Also, in 2017, it launched the world's first indoor/outdoor eDrive with extra-ordinary integration of commuting, fitness, regeneration and virtual reality integration. In 2018, Falco launched Falco eDrive for eBikes with seamless integration of state-of-the-art bicycle, motor, drives, and artificial intelligence technologies to provide the most natural experience to connoisseur bike riders. Falco eMotors has also filed and has been granted several US patents.



## The Innovation

### Innovation 1:

Falco eDrive is one of the most advanced integration of cycling, motor, drive and artificial intelligence to provide highest possible battery range in the industry today. The innovation employs patented 5-phase brushless motor technology. It features unique drive architecture and drive algorithms. The drive is located inside the motor and the motor is in the spokes of a bicycle wheel. The system can be operated wirelessly using an ANT+ console or a smart phone app. This direct drive technology also features Zero free-wheeling thereby removing any fears of riding while battery depletion.

### Innovation 2:

Falco eMotors invented World's first indoor/outdoor eDrive by extending the integration of the direct drive technology with virtual reality platforms such as Zwift. This allows the electric bike to be used as a powerful indoor trainer. This enables fitness and free capture of human energy while simulating the outdoors in.

### Innovation 3:

Falco extended its expertise in the field of brushless motors and drives to launch direct drive high volume low speed fans. These fans measure from 6-ft to 24-ft in diameter and can cover an area of up to 30,000 sq. ft in a manufacturing facility or a warehouse or a school, or a temple etc. This is World's first HVLS platform with integrated active power factor correction allowing highest airflow per unit of power consumption in the world. This technology also features zero sound and lowest carbon footprint in the World.

## The Approach

The company aims to create an organization, which learns quickly, evolves steadily, acts passionately, and serves humanity through the delivery of extraordinary products which last a lifetime. Their journey starts and ends with learning and it is fuelled by tremendous passion.

## The Benefits

Their eBike solutions enable healthy living, reduce carbon emissions and change the mode of transportation and, provide real alternatives to road congestion.

Their industrial and commercial HVLS fans revolutionize the big building human productivity and lower the carbon footprint significantly by changing the airflow smartly.

## The Future

The company aspires for increasing the value addition by reducing the device weight by 50%, increasing the torque and power density by 50%. They are looking at an integration of AI and IOT with Electrical, Electronic, Electromagnetic and firmware technologies to provide extraordinary performance, reliability and quality of life to the customers.



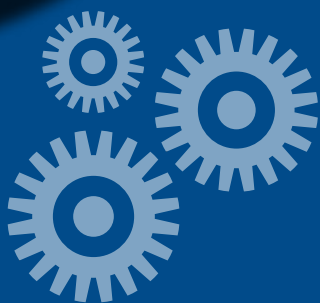
# L&T Technology Services



L&T Technology Services Limited (LTTS) is a listed subsidiary of Larsen & Toubro Limited focused on Engineering and R&D (ER&D) services. The company offers consultancy, design, development and testing services across the product and process development life cycle.

Their customer base includes 69 Fortune 500 companies and 51 of the world's top ER&D companies, across industrial products, medical devices, transportation, telecom & hi-tech, and the process industries. With 416 patents filed for their customers, they have 49 Innovation and R&D design centers globally and specialize in disruptive technology spaces such as 5G, Artificial Intelligence, Collaborative Robots, Digital Factory, and Autonomous Transport.

Headquartered in India, they have over 16,700 employees spread across 17 global design centers and 28 global sales offices as of September 30, 2019.



## The Innovation

### **Innovation 1: LTTS AVERTLE - PREDICTIVE AND PRESCRIPTIVE MAINTENANCE SOLUTION WITH AI ON EDGE**

- Early failure detection on edge gateway
- ML based multi-dimensional models for failure and performance prediction
- Algorithms and analytics recommendation engine to act ahead of any fault occurrence; cloud agnostic visualization
- 24\*7 real time monitoring of critical assets
- Digital Twin Repository for 25+ equipments

### **Innovation 2: LTTS AiKno - AI PLATFORM FOR ENGINEERING USE CASES**

- Brake plate serial number identification
- Cognitive system for attributes extraction from scanned purchase orders
- Fault log management and prescriptive reporting
- Scientific journal categorization based on images & text
- 2D engineering drawing digitization
- Real time quality inspection

### **Innovation 3: LTTS i-BEMS (iNTELLIGENT BUILDING EXPERIENCE MANAGEMENT SYSTEM)**

One stop shop for all applications – Experience Management Solutions, Smart Cafeteria, Smart Parking, Workplace management, Digital Signage, Smart Lobby, Smart Meeting Rooms, Visitor Management Systems, Smart Workplace and Digital Ceiling

## The Approach

### **Innovation 1: Avertle**

- Models are verified using accelerated life test of sensor data in lab environment
- Automated system for continuous learning and improvements of models in field conditions

**Innovation 2: LTTS Aikno** can be broadly divided in to 4 steps. Firstly, the documents are scanned. Using LTTS proprietary Image Processing S/W, the scanned document is processed. The regions of interests are identified. The processed image is then classified into tables, figures & text. Next, the text is extracted using proprietary LTTS OCR engine which is built on Deep Learning models and customized to give maximum accuracy for extraction from technical engineering documents. Post this, the output is passed through the third step, a NLP engine to extract the meta data.

**Innovation 3: LTTS i-BEMS** LTTS has developed and leveraged the existing partner and start-up ecosystem to extend the smart building offerings and become end-end experience management solution provider

## The Benefits

### **For Innovation 1: Avertle**

- Increased machinery uptime by 95% by using Hybrid modelling approach for accurate predictions

### **For Innovation 2: AiKno**

- AiKno OCR can extract the metadata from the scanned documents available even in image format

### **For Innovation 3: i-BEMS**

- Enabled 15% of operational savings – Uses low power, wireless sensors to monitor environmental conditions within a confined space.

## The Future

**For Innovation 1:** Improve and make the models more efficient and enrich their libraries so that they can cover wider range of industry equipments and help run the facilities more efficiently

**For Innovation 2:** Improve the AI framework and models to efficiently bridge the gaps in the Digitization journeys of various enterprises by introducing features like Intelligent Virtual Assistant, Predictive Analytics etc.

**For Innovation 3:** Introduce AI & Automation modules into the experience management features so that the building can run, optimize and prevent issues pro-actively, on its own with minimum human intervention

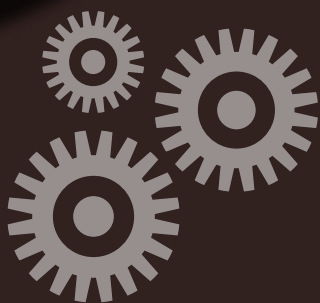


# LooCafe

An Ixora Corporate Services Initiative

ICS is an IOT enabled digital facility management supply chain company and with its expertise into digitization of facility industry, they have brought cost optimization through their technology initiatives. They aim to offer Integrated Facilities services at with 10 to 15% lesser prices and better quality with enhanced technology.

With a vast Experience in managing Public spaces, ICS venture LooCafe's vision provide the best of public sanitation and washrooms facilities free to use to each and every citizen through a self-sustainable model, – 'LooCafe' – India's first free to use luxury washrooms.



## The Innovation

### Innovation 1 – Sustainable Design

India's first free to use self-sustainable luxury public washrooms, especially focused on growing urban population, women and old age citizen ODF ++ complied free to use public washrooms, made out of recycled shipping containers which are designed keeping in mind future road expansions making it easy as it's a plug and play model, provided with rainwater harvesting, green lung spaces, LED lighting etc. Loo cafe Future products will include Water Conservations, toilet discharges to be converted into fertilizers and rainwater reusable as a source of drinking.

### Innovation 2 Technology Enabled

Technology Enabled Loo cafe's ensures best of Hygiene

- Central Command and Monitoring Centre
- Stink Sensors
- Footfall counters
- Urine to Fertilizer conversion metrics to harvesting
- Energy monitoring IOT's Systems – Water, Power Levels connected to CC for easy monitoring and controlling  
Future 2.0 Will Include

## The Approach

Loo cafe is based on modern contemporary Urban design which matches Smart City Initiatives

## The Benefits

Sustainability as its core strength, Loo cafe is already changing the perception of public washrooms already. Access to best sanitation especially for women, children thereby free from open defecation and move further upwards in the Swachh Bharat Mission

## The Future

With 20 operating Loo cafe's on ground, the future is to Install and operate 10,000 Loo café in India and expand to other countries. Loo cafe 2.0 is already in test phase with grey water recycling, nanotechnology, toilet discharges harvesting making it first of its "off the grid" washroom to be launched by March 2020.



# Bank Note Press, Dewas (MP)

A Unit of SPMCIL, New Delhi



Bank Note Press, Dewas an Industrial Unit of SPMCIL, Government of India, Ministry of Finance , Department of Economic Affairs was established in 1974. The state of the art Security Ink Factory is an internal vertical of Bank Note Press, Dewas.

This unit produce world class, high quality, new family banknotes to impede forgery by incorporating higher security features, latest modern printing technologies like intaglio printing, dry offset printing with security features such as interlock designs, see through designs, use of fluorescent inks, use of optically variable inks etc.

The Ink factory developed new series inks through in-house scientists and core skills. The factory has developed skills for indigenization of foreign input materials through constant R&D on basic science as well as engineering applications.

The unit is unique in India and is of very high economic importance. The unit has clear vision and leadership to take forward the mission of Govt of India. The strength of the company is the human resource in the field of basic science, R&D, humanities, engineering, accounts and financing, management etc in the arena of currency printing and document security.





## The Innovation

### The Innovation 1:

They have developed a new series of inks post demonetization banknotes through in-house chemists/scientists.

Bank note demand had drastically increased post demonetization. The ink formulations were developed for the new denominations using indigenous raw materials for various denominations like Rs 500/-, Rs 200/-, Rs 100/-, Rs 50/-, Rs 20/- and Rs 10/-, ISRA ink.

### The Innovation 2:

The company has developed a gravimetric filling system, an import substitute filling system developed in-house by them. The cost of indigenous machine was Rs 14 lacs in comparison to imported machine at Rs 1.6 crore.

### The Innovation 3:

Their third innovation was the development of high capacity ink feeding system (Ink Transfer pumps) for Intaglio machine.

In one of the imported machines, 20 kg ink cans were replaced with locally developed machine to handle 200 kg drums. The cost of indigenous machine was Rs 6 lakhs in comparison to imported machine at Rs 25-30 lakhs, the technology is also adopted by Currency Note Press, Nashik and changeover is in progress.

## The Benefits

**For Innovation 1:** Saving in time and money, development of in-house technology, saving in cost of ink, dependency on imports/ outside suppliers eliminated.

**For Innovation 2:** Development of indigenous technology with 100% local content, saving in cost of machine, dependency on imports/ outside suppliers eliminated.

**For Innovation 3:** The benefits out of the project are enormous like environment friendly, huge saving in packing cost, manpower, and space while ensuring better housekeeping. productivity had also increased with this 100% indigenous technology.

## The Future

The vision of the company is to develop in-house indigenous technologies to enhance the security level of banknotes, passports and other security documents of country. Also, the company aims to export the security products to other countries is in the target with innovative security inks/ bank notes/ security papers etc

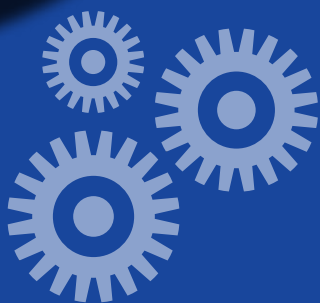


# Advanta

(UPL Company)

Advanta is a global agriculture seed and technology company, committed to sustainable agriculture and aims to serve farmers with quality seeds & technology to enhance crop value and bring prosperity to farmers. Advanta is the only firm in South Asia offering a complete food and forage crop portfolio. In India, Advanta is a leader in forages and aims to establish itself as the complete animal nutrition solution provider. And in vegetables, Advanta has a leadership position in Okra, Peas & Brassica. Advanta is also committed to contribute in achieving UN SDGs by focusing on smallholder farmers in regions with food security challenges. R&D has been the cornerstone for Advanta's business plan, which aims to provide innovative and right agriculture solutions to its farmers.

UPL, the parent company, is a major global crop protection player with presence across 130+ countries. UPL offers suite of agro-solutions through Seeds (Advanta), Crop Protection (UPL), Rice Co (Rice centric solutions), Drought Mitigation Technology (Zeba), Post Harvest (Decco), and Farmer Advisory Services (Adarsh Kisan centre & Unimart). With its presence across various agro solutions, UPL is best placed in the industry to serve farmers.



## The Innovation

### The Innovation 1:

Jaani, Advanta's in-house hybrid, is a unique Okra hybrid as it is industry's only product delivering all traits in 1 product viz. combo virus tolerance to YVMV & OLCV, high yielding, better fruit quality, and long harvest window. These product characteristics guarantee high ROI to growers.

Advanta's Internal Trial data (2014-2017 viz. prior to product commercialization):

- OLCV: 0% was observed till 60 DAS (Days after sowing), 3% at 75 days, till 6% at 120 days
- Summer YVMV: 0% loss reported till 120 days
- High Yields (1.2- 1.4 t/ ha)

Eventually, Jaani became one of the bestsellers in 2018 and enabled Advanta to establish itself as Okra market leader.

### The Innovation 2:

The promising in-house trial results boosted Advanta's confidence to launch Jaani with one-of-its kind scheme, "Jaani Assurance Scheme", exclusively for TN farmers. This scheme was designed to protect Jaani farmers' loss against any incidence of YVMV & OLCV virus in the first 50 days. It was launched for Jan- June 2018, period coinciding with the peak summer/ virus infestation season. In general, any Okra plant infected within 20 days exhibits retarded growth resulting in 90- 100% loss & the extent of damage declines with delay in infection of the plants.

## The Approach

To drive the Scheme on Ground, Third Party agencies were engaged, as provided below, to ensure transparency, have a close watch on market movement and support business decision with real time farmer level analytics:

- Advanta to hedge its own risk, took weather linked "Insurance coverage", favourable for virus vector.
- Partnership with Weather Risk Management Services (WRMS): To track weather updates for virus congeniality by installing weather stations in hotspots. Set up temporary Call Centre for Query resolution/ Lead follow-up.
- Digital campaign through i5, mobile app: To broadcast (sms & digital) vernacular feeds on Okra Crop Advisory, Jaani product, Assurance Scheme, farmer testimonials, local farmer meeting invites
- Pando App for Advanta Field Force: Deployed for online farmer registration, track real time campaign activities in farmer fields, Jaani performance in registered farmer plots, and backend support for data management.
- Tie- up with PCR based lab: To validate infested samples for true Jaani product and virus infestation

## The Benefits

No incidence of YVMV/ OLCV in registered/ not registered Jaani farmer plots: No claims received (Source: PCR lab, Call centre, Field visit by Advanta team)

Assured incremental benefit for Jaani farmers over other hybrids: ~Rs 1,00,000 per acre.

Profit of Jaani farmer per acre= Rs 2,20,000 (Rs 1,24,000 for other hybrids). In case of virus infestation, when competitor hybrids become susceptible to virus, farmer profit dips drastically due to poor yield.

Advanta's Jaani Assurance Scheme was recognized as an Industry leading practice by Access to Seed Index, published in 2019; which accorded Advanta 4th rank in South & SE Asia.

## The Future:

Advanta is committed to serving the farmers. Advanta foresees that with climate change, India is likely to be immensely affected with erratic climate causing disease and pest outbreak, and water crisis, impacting the smallholder farmers greatly. Advanta's strong and focused R&D is striving to address such issues.

The ALPLA logo is displayed in a bold, blue, sans-serif font within a white rectangular box.

# Alpla India Private Limited

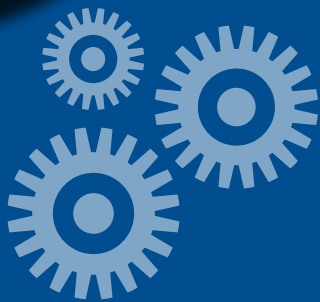
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ALPLA, as a global leader in rigid plastic packaging provides its global clients with innovative, top quality products. Today, ALPLA has a strength of over 20,000 employees at 178 locations across 46 countries

ALPLA India is a seamless part of ALPLA Holding GmbH with 8 plants across India. Today, ALPLA India is one of the leading producers of rigid plastic packaging in the country with an annual turnover of over EUR 100 million.

Their Technology Center enables them to carry out end to end supplier led initiatives, many of which are globally first introduced innovations like EBM tubes, Bi-injection Lube oil caps and high cavitation injection molds, which cater to good product demand.



## The Innovation

### Innovation 1

**9.6g Preform:** Coca-Cola, along with Alpla developed a smaller stock keeping unit (SKU) which comes with a very low weight at about 9.6gm.

This is the first global launch by Coca Cola of such a low weight bottle. The bottle is plasma coated for the product's shelf life of 6 months of this product as compared to a standard shelf life of around 3 months. This adds hugely to the sustainability effort of Coca Cola and will bring down the use of plastics.

This 250 ml coke bottle is a hit in the market as it is pocket friendly and easy to carry. Other variants of the beverage of the Coca Cola company are also available in the same packaging unit.

### Innovation 2

**EBM Tube:** Unlike co-extruded tubes, EBM tubes come with the neck blown in the tube and can be customized in form and shape. This allows distinctive shelf throw and cannot be duplicated. This technology has been first launched globally with Himalaya Face Wash and has helped eliminate the brand duplication and have grown significantly after the launch in EBM tubes. The logo of Himalaya is in-molded in the tube, something that no other current technology can deliver. This helps in avoiding counterfeits in the market.

This process distinctively lines up the thumb recess, logo and label in a straight line. This adds to the aesthetics along with functionality. The EBM tube technology launch is a first global launch across ALPLA group.

## The Benefits

### For Innovation 1 :

- Low weight which relates to less use of plastic
- Lower overall carbon footprint
- Increased shelf life of up to 6 months due to plasma coating
- Low cost pack which is preferred by the end consumer

### For Innovation 2

- The EBM tube is manufactured in a single process and compared to the conventional process which involves 2 steps
- Multiple layers in the tube can be incorporated into the entire tube. Conventional method allows multiple layers to be incorporated only in the tube body and not the neck
- Due to thin shoulder, every last drop can be squeezed out of the tube, thus reducing overall wastage



# Aparajitha Software Services Private Limited

Aparajitha had pioneered in bringing about an organised & structured professional framework to the compliance industry in India 20 years ago. Today, they offer their Indian and global clients a full compliance assurance service model combined with an e-compliance platform with deep domain expertise in employment laws, industrial laws and financial laws across all countries.

Their expertise in the legal knowledge on the compliance domain with labour and industrial laws has their services spread through the country with their own resource and infrastructure. Currently they have about 1300 legal expertise across their pan India offices supporting and successfully completing compliance regulations for about 1200+ clients across 44 industries

Based on their extensive experience with the non-compliance challenges faced by their clients in India and the APAC region leading to board room worries of prosecution, financial and reputational risks they have designed and launched Compfie, an e-compliance platform that helps organisations know the applicability of laws for their specific industries and track their compliance status without ambiguity and helps them be compliant to the laws of their country.



## The Innovation

### Innovation 1:

Compfie is a codeless technology platform into which the compliance tasks can be uploaded and is designed and developed the application in such a way that there is no requirement or need to change the code every time there is a change or amendment in the law.

### Innovation 2:

Any Global company with cross border operations would struggle to know the laws of the land every time they foray into a new geography and would face the challenge of identifying the right partner or the local legal knowledge to support them to understand the myriad nuances of compliances in the new geography.

The company's Global CEO/Global legal officer would over a period of time would also like to monitor or view the compliance status of a specific country from his/her desk.

Compfie has a design architecture with tools built in, to view the comprehensive hierarchical structure and accommodate the business level organizational structure of any company. A hawk eye view of the group level, business group level, legal entity, branch level upto unit level compliance status is available in the Compfie Dashboard.

### Innovation 3:

Business continuity is not restricted to the core business offering of any company, it includes the continuity of all activities that are core and incidental to any business and most often the core and incidental have to co-exist for growth. This is becoming all the more important for an organisation as compliance outsourcing has become a norm, monitoring is essential activity and continuity is imperative for both aspects.

## The Approach

Their approach in building the tech-enabled e-compliance platform was from their domain expertise in labour laws and industrial laws, the nuanced understanding of procedures and practicalities in implementing or performing compliance tasks. The company focusses on addressing some of what may seem simple real time pain points in addressing compliance performance of an organisation. They had been extremely analytical in designing the architect of Compfie in such a way that it addresses these pain points, is extremely user friendly. Compfie is a tech-enabled e-compliance platform rather than a technology solution alone.

## The Benefits

**For Innovation 1:** As soon as a law is amended, their strong legal team at Aparajitha analyse it, translate the applicability into a compliance tasks and upload them into Compfie and further configure it for their clients. Compfie tells their clients what to do, when to do and how to do to stay compliant without any ambiguity.

**For Innovation 2:** Through Innovation 1, the company can configure the compliance tasks of any country and any domain, as Compfie is a codeless platform for compliance tracking and knowhow. Compfie also serves as a ready reckoner for the corporates to comply in different geographies and also dynamically prompts stakeholders to act and tracks the status of compliance.

Compfie offers the comfort of reviewing the global governance/compliance status with just a mouse click, drilling down from a global comprehensive status to country-wise compliance status upto the branch level compliance status in any domain. Compfie is the ultimate global e-compliance platform!

For Innovation 3: Compfie ensures continuity of compliance by enabling the client to assign different sets of tasks to different stakeholders be it internal or outsourcing partner.

## The Future

The company envisions to fulfil their aspirations to be a global leader in compliance services with their plans to offer their well-researched and a technically strong version of Compfie, which will further simplify the complexities of compliance and also can be a self-service plug and play product that has a functional design architecture to accommodate any laws – globally!!

# Avantel Limited

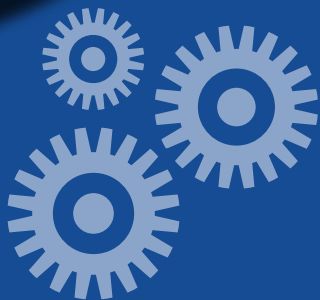
Avantel limited is a technology driven ISO 9001:2015, AS 9100D, ISO:IEC 17025, ISO 27001:2013 and CEMILAC certified company with a legacy of more than 25 years in the industry. The company is well known for its capabilities in design, development, manufacturing, installation & commissioning, system integration, testing & evaluation of defence electronics, satellite communication systems, telecom systems and embedded & application software. Avantel has designed and developed various first of its kind, customized wireless/Satcom products and solutions to meet the special requirements of Indian Defense Services. At Avantel, they connect ideas, create value and conserve resources through innovation in integration of new ideas and technologies across varied domains. The guiding principle for Avantel is "Nation First".

1KW HF Transceiver System

Antenna



Antenna Tuning Unit





## The Innovation

### Innovation 1

#### MSS Mark II System using DBF Technology

The MSS Mark II system Supports Voice and Data communications through Indian Satellite and facilitates continuous connectivity for Indian Navy assets in high Seas across its area of interest. The MSS MK II system is an improvement to the existing data only MSS MK I system supplied by Avantel itself and is currently operating on Indian Navy Ships, Submarines, Aircraft, Strategic Vehicles and Manpack terminals. The usage of DBF technology has enhanced the data rates and facilitates optimum utilization of Satellite Bandwidth.

### Innovation 2

1 KW HF Transceiver To meet the indigenous requirements of an Indian Navy Project for procurement of 1 KW HF systems, there was requirement to develop and manufacture various technologies of 1 KW HF systems in India itself. In this endeavor, Avantel has indigenously designed and developed various major sub systems viz. 1 KW power amplifier, remote control unit, hf interface unit, power supply unit and antenna tuning unit. Only two sub systems namely, Exciter and Modem have been sourced from their collaborator Hagneuk Marine Kommunikations, Germany.

The field evaluation trials (FETs) have been successfully completed by Indian Navy for the project. Out of the indigenous developed systems, the ATU technology is critical and is being offered by very few Global OEM's. Avantel could develop the 1 KW ATU technology in a record time.

Avantel has implemented proprietary, automatic tuning algorithms for fast tuning with impedance and VSWR detection in its ATU solution.

### Innovation 3

Critical Subsystems for Electronic Warfare in LIC (Low Intensity Conflict) areas Avantel has indigenously designed and developed solid state wideband power amplifiers required for ECM jammer in the frequency band of 1.5 to 1000MHz with power out puts of 1KW for the project LIC. These power amplifiers are supplied to the system integrator M/s Bharat Electronics Ltd, Hyderabad. These power amplifiers are import substitution products to the units Imported from EMPOWER, USA resulting in 30 to 40 % cost savings for the customer.

## The Benefits

- Unique, state of the art, customized solutions to meet special and specific requirements of Indian defence services
- Fully indigenous highly secure SATCOM solutions on mobile platforms including Ships, Submarines, Aircraft, Helios and Torpedoes to meet the specifications of Indian satellites with low G/T & EIRP
- Import substitutes resulting in huge savings in forex and cost
- Self-reliance in highly critical and sensitive technologies

## The Future

The company plans to significantly increase their efforts and work towards unveiling newer innovations in their sphere of activities and directly contribute towards the goal of self-reliance in the Indian defence sector.



# BOSCH Limited

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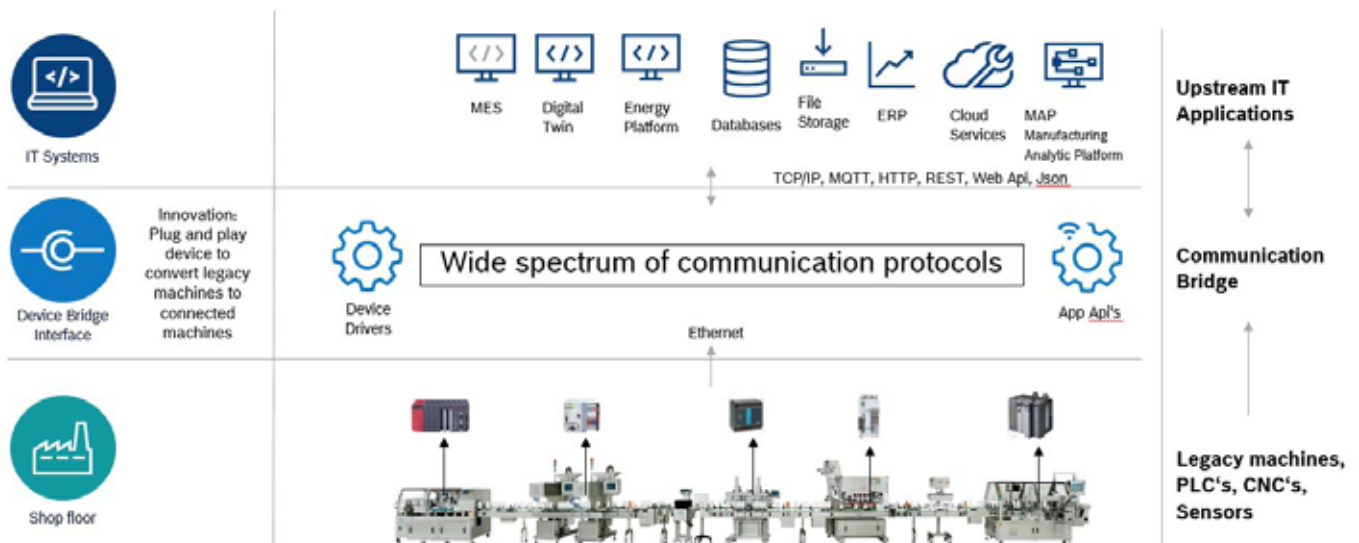
BOSCH Group established in 1886, comprises of 460 fully consolidated subsidiaries spread across 60 countries. BOSCH Group is highly diversified and operates in the areas of Mobility Solutions, Industrial Technology, Consumer Goods and Energy and Building Technology. Bosch established itself in India in the year 1920. Bosch Limited, registered in 1951 is the flagship company of Bosch in India.

Their goal is to develop products that are “Invented for life,” that fascinate, that improve quality of life, and that help conserve natural resources. Sustainability forms the corner stone of their actions. In India, Bosch Limited has pioneered in research and development of Fuel injection systems backed up by state of art manufacturing that also continuously innovates the processes. Robust India specific powertrain solutions has won awards and accolades from many of Bosch Limited’s customers over the years. Bosch’s innovation extends beyond mobility. Cochin airport for example is fully powered by Solar Technology from Bosch Limited.



The innovation described are from two diverse areas. The invention from the area of manufacturing are an automated visual inspection system and a plug and play device bridge. The former indigenously developed by Bosch's engineers in India has replaced 24-man power and has improved the quality of fuel injection pumps while reducing the inspection time. In the future, incorporation of advanced machine learning algorithms is intended to enable learning and faster processing to reduce cycle time. The device bridge is an innovative plug and play device, also locally developed that can transform any legacy machine into an IoT device. Wide range of protocols are continuously being built into this for compatibility with wide legacy machines. The innovation in the area of R&D is an innovative way to create robust air detection mechanisms for fuel injection equipment in India. The invention reduces overall system price.

In 2018 alone, they have filed some 6,000 patent applications for the Bosch Group. On average, Bosch makes an invention every 22 minutes. In India, Bosch filed on an average one patent every working day, one of the largest by numbers. And even if the number of patent applications filed is declining in general in the age of digitalization, these figures demonstrate once again just how seriously Bosch takes their claim to innovation leadership.





# Dr JRK's Research and Pharmaceuticals Pvt Ltd

Dr JRK's Research and Pharmaceuticals Pvt Ltd began its operations in 1992 with the manufacture of Dr. JRK's 777 oil, a safe, clinically effective, breakthrough Siddha herbal medicine for the management of Psoriasis invented by our founder and Padmashree awardee – Dr. J.R. Krishnamoorthy.

The company manufactures and markets well researched, scientifically proven and clinically effective herbal products for the management of skin disorders like Psoriasis, Vitiligo, Eczema, hair growth, dandruff, immune disorders, pain management etc.

Since 1992 the company has been expanding its operations all over India and its products have also been registered in several countries outside India.

The company is now 28 years young GMP, ISO 9001:2015 and HALAL certified company with strong internal processes and facilities to meet global standards.

The company has to its credit over 100 research publications in national and international journals of repute.

The affairs of the company are managed by its Directors, Rajagopal JK and Gayathri Rajagopal.



## The Innovation

### Innovation -1-Ready to Drink Nilavembu Kudineer ( NIKU)

Nilavembu Kudineer Churnam is a Siddha Classical (Sastric) herbal preparation that is indicated for the management of Viral fevers including Dengue and Chikungunya. Dr. JRK's Research and Pharmaceuticals Pvt Ltd, came up with a lot of efforts in research and development, through a proprietary process, a 'ready to drink' form code named NIKU without compromising the principles of traditional preparations and without losing the active compounds in the herbs present in standardized dosage form of 5gms sachets. NIKU. This was a very novel and extremely patient friendly presentation that the Siddha and Ayurvedic Doctors welcomed and through their prescriptions many patients have been benefited.

In order to assure the traditional medical practitioners on the sanctity of the presentation, the company did validation studies using HPTLC methods that compared the conventional preparation output and the ready to drink format and confirmed that there is no loss of active ingredients.

### Innovation-2 – VERDURA Melapro cream ( topical psoralen)

Dr. JRK's Research evolved a product VERDURA Melapro cream that contained a safe level of natural Psorolen extracted from *Psoralea Corylifolia*. It was a topical Psoralen and a wash off product in comparison to synthetic oral psoralen that is usually known to have side effects.

VERDURA Melapro cream is an acceptable, safe, effective topical product for accelerating the melanogenesis (synthesis of melanin) containing natural Psorolen extracts. The product has gained acceptance amongst the medical practitioners.

## The Approach

The firm aimed at creating a distinctive therapeutic and user benefits with insights and research based on herbal ingredients and alternative systems of medicine. Products evolved with a combination of market insights from medical practitioners, brain storming, literature search and several phases of laboratory and clinical studies.

Today, benefits of traditional preparations like Nilavembu Kudineer has reached the common man for its convenient usage. The ready to drink format has therefore evolved without compromising on traditional principles

## The Benefits

### For Innovation 1

Ready to drink Nilavembu Kudineer ( NIKU)

- Standardized product with even distribution of actives and superior therapeutic effect evidenced by HPTLC studies
- Savings of atleast Rs.9/- per single dose against conventional preparations in addition to savings in time and labour

### For Innovation

Verdura Melapro cream – topical psoralen

- Proven to be hypo allergenic and safe for long term use and with no known side effects unlike oral Psoralen
- 35gms pack and priced at just Rs. 90/- and annual cost of treatment @1 tube a month: Rs. 1080/-; currently, oral Psoralens combined with UVA exposure sittings costs at least Rs.5000/-

## The Future

- To develop scientifically validated AYUSH drugs and botanicals based preparations that can cure/treat diseases with proven efficacy, target specificity, correction of underlying etiopathology ( tridhosha fundamentals) and immune modulation.
- To identify and establish the molecules in the botanicals and their interplay with human system at molecular, cellular and organ levels.



# ArcelorMittal Nippon Steel India

(Formerly Essar Steel India Ltd)

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ArcelorMittal Nippon Steel India ( Formerly Essar Steel India Ltd) is an integrated steel producer with a production capacity of 10 million tonnes. Situated in Hazira, Gujarat, it is the 4th largest steelmaker in India with annual turnover of around 4.5 billion USD.

The company produces iron ore pellets, hot /cold rolled steel coils, sheets and plates, galvanized and color coated sheets and large diameter SAW pipes. It produces over 300 grades of steel, many of which are import substitutes, conforming to national and international standards like BIS, ASTM, Euro norms, JIS and certification agencies like API, ABS, DNV-GL, BV, LR, NACE and the Indian defense sector.

It had received many accolades and recognitions from reputed institutions like World Steel Association, Golden peacock, Green Tech foundation, Confederation of Indian Industries, to name a few.



## The Innovation

### Innovation 1:

Coal used for COREX iron making technology generates 40-50% fines during handling. These fines are difficult to recycle as the briquettes/pellets etc. tend to crumble at high temperatures (>1000°C) inside the COREX furnace. Previously known methods of agglomeration of coal fines involved costly binders and/or processing steps making them economically unviable.

The problem was solved by briquetting the coal fines with an innovative binder at room temperature. The binder ensured that the briquettes retained desired strength even when they were subjected to high temperature inside the COREX furnace. The briquettes do not require any specialized curing/treatment and hence production cost is low.

### Innovation 2:

In order to produce high quality steel, it is desirable to detect quality defects on-line in a hot rolling mill. The finish hot rolling temperatures are 900°C-300°C, line speeds are 700-300 meters/min and defects are of few millimeters in size. Detection of such defects necessitates a robust electronics hardware backed by intelligent computation and fast synchronization of different measurement systems.

A surface defect detection system was built using innovative data acquisition and processing method. An innovative soft encoder using Field Programmable Gate Array was coupled with commercially available cameras and sensors to generate very high resolution images. Innovative deep learning techniques were applied to classify the defects and improve the detection accuracy.

### Innovation 3:

Bullet proof steels which can resist penetration of bullets travelling at more than 700 meters/second were being imported for use in India till 2015. These steels need high strength, toughness, hardness, and should be weldable. Some of these properties contradictory to each other and therefore need to be optimized. No standards for alloy design exist for these type of steel, and each steelmaker adopts their own methodology for producing such steel.

The above problem was solved by innovative alloy design and very stringent process control.

## The Benefits

For Innovation 1: It was possible to commission a 500 TPD briquetting plant and recycle around 10% of the coal fines (~ 0.27 MTPA) for the COREX process. Also, reduced handling and road transportation of coal dust have resulted in cleaner environment.

For Innovation 2: it has been possible to detect the defects generated during hot rolling with an accuracy of more than 90%. Manual surface inspection by opening and rewinding the steel coils has reduced from 3-4% to 1% of production.

For Innovation 3: Essar has been able to launch a branded ballistic steel "ARMAPRO 500", is an import substitute for the defense sector.

## The Future

The coal briquetting plant capacity is being augmented from 500 TPD to 1500 TPD. In future, Essar also plans to install the surface inspection systems in many more finishing lines so as to provide better quality steel to customers.



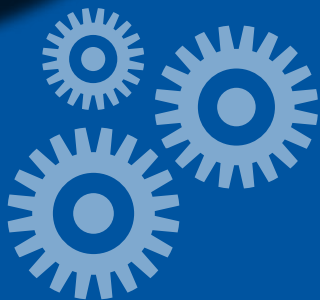
# Holistik India Limited

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Holistik India Limited was established in 1991 to battle the menace of counterfeiting in India. In a span of 28+ years, the company has become an industry leader and is one of the biggest manufacturers of security holograms in the world.

Holistik provides anti-counterfeiting products and solutions to 10,000+ customers in more than 75 countries. The company has 12 nationwide sales offices, 5 advanced manufacturing facilities with a DSIR (Department of Scientific & Industrial Research) recognized R&D centre and 750+ member skilled workforce.

Holistik is also the only anti-counterfeiting company in India which has received the CMMI Level-3 certification. The company has a glorious legacy of securing some of the most popular brands in India and abroad. Holostik has the aim of creating a world free from the menace of counterfeiting by developing state-of-the-art customised anti-counterfeiting solutions.





## The Innovation

### Innovation 1

Nano-optical imaging system is the most secure and technologically advanced. It is also referred to as 4th Generation OVD(s) (Optically Variable Device). Products using nano-optical images are made using sophisticated 3D microstructures through direct writing lithography technology.

Nano-optical images meet all the requirements of OVDs like resolution, flexibility and performance. This technique makes it possible for arbitrary topology creation while the extreme resolution of nano-meter scale allows utilization of the recent development of digital holography.

### Innovation 2

Holostik created a proprietary QR code which can only be scanned with a proprietary application and thus creates an optimum security system for the organizations. This simply means that nobody is able to breach the security or scan the QR code by any means. This customised IT-enabled solution provides maximum security to individuals or organizations where security is highly critical in nature i.e. government organizations, intelligence agencies, ministries etc. The proprietary QR-code and application can only be administered by its rightful owner.

### Innovation 3

According to their market research, a lot of uneducated end-consumers found it challenging to identify the security features of holograms/labels. At the same time, they are also aware of mobile-based authentication through QR codes. Taking a cue from the same, the company has integrated QR code/proprietary QR code with the security hologram/label.

In this combined anti-counterfeiting solution, the security hologram or security label is extremely hard to copy due to the presence of high-security features, whereas the QR code/proprietary QR code provides easy and instant digital authentication.

## The Approach

The company has a dedicated team in the marketing communications department which regularly conducts surveys for collecting data and feedbacks on incidents of counterfeiting and on the efficacy of their solutions.

## The Benefits

### For Innovation 1:

- Offers high level of security against the threat of counterfeiting.
- Incorporates nano level of information that can only be verified at advanced forensic labs.

### For Innovation 2:

- Owned exclusively by the rightful owner and thus cannot be breached.
- Can store large amount of information.
- Used by Government authorities, intelligence agencies etc.

### For Innovation 3:

- Ensures easy product authentication for uneducated end-consumer.
- Can be easily implemented, saves time and costs.
- Provides other important product information to the consumer.
- Easy implementation of supply chain management solutions.
- Access to various other solutions like warehouse management, loyalty management, warranty management etc.

## The Future

The company is continuously working on developing new technologies for securing products from counterfeiting. In order to secure products from the menace of counterfeiting their R&D team is constantly innovating new anti-counterfeiting solutions. They believe in securing the world from counterfeiting and safeguarding industries, government and most importantly the common man.

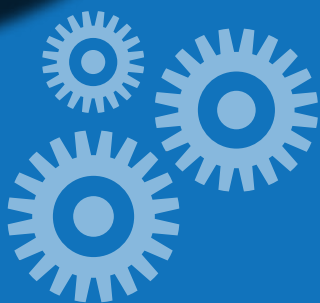


# Innovation Imaging Technologies Pvt Ltd

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Founded in year 2015, Innovation Imaging Technologies Pvt Ltd (IITPL) is a unique amalgamation of strengths in cath lab design and manufacturing, x ray imaging, software and interventional cardiology consumables. The three promoter groups: VJ Technologies, New York, Ex Alpha X Ray Promoters, Germany and India and Involution Healthcare, New Delhi brings a combination of strengths that are unique and complimentary resulting in development of the Pinnacle and Pinnacle Agile Cath Labs – the fastest growing and the most awarded Cath Lab of India in 2018.

The Promoters of the company have held leadership roles in Philips, Abbott, J&J have a vision of creating truly differentiated solutions in medical imaging and offering solutions that make medical imaging more effective and accessible.



## The Innovation

Cardiovascular diseases (CVD) are the number one cause of death in India. CVD is responsible for more than one quarter of all deaths in the country in 2015, affecting rural populations and young adults the most.

For over 55 million patients, only 1,400 Cath labs in 140 cities across are available and that too largely concentrated in tier one and two cities only.

Identifying this socio-economic need, IITPL (an Innvolution JV company) developed a versatile Cath Lab that makes cardiovascular care accessible to a larger segment of the society.

Pinnacle is the catheterization laboratory manufactured by IITPL. Its technology is developed indigenously and brings many first in-industry innovations such as:

- High Definition Flat Panel Detector Technology (1344x1344 resolution against industry standard of 1024x1024)
- “Optimized Radiation”, using a 65 kw X Ray Generator against conventional 80 kw or 100 kw thereby reducing harmful effects of radiation
- First Cath lab to uses medical grade “Tablet” as the “Controller” of the Cath lab
- First Cath lab in the segment to use a single large 55-inch, high definition monitor display
- Entire IP rests in the company, and the mechanical design, electrical integration and software is all in-house, making it a unique R&D company in medical equipment space
- Cast a c-arm through a patented process for the first time in the world
- Developed a monitor ceiling suspension system at one third the price German system.
- Introduced table swivel to create a hybrid OT.
- Gave highest table sweep of 4.3 feet to create true full body coverage.

## The Approach

The company's follow the DFX concept which stands for 'Design for Excellence'. This addresses for design for manufacturing, assembly, service and so on. They also follow modular design concept in their product platform. This gives immense amount of flexibility to switch between different models between the same product family.

They attempted to create full body coverage in a side mount Cath Lab using only patient table movement. This had not been attempted before and they achieved it by creating a new technology that allows table sweep of 4.5 feet on cantilever.

## The Benefits

Their flagship product Pinnacle Cath lab addressed an unmet need of a versatile Cath lab under 2 Cr. Second product Pinnacle Agile further strengthens the platform.

- World's smallest, fixed flat panel Cath lab
- Optimized radiation, Proprietary AspireR image processing chain delivers virtually noise free and sharp clinical images at low radiation dose
- Machine comes preloaded with Cardiovascular suite, DSA, Roadmap, and optional advanced features such as digital stent enhancement (stent boost) and QCA
- Fastest installation of the Cath Lab in Its segment
- Offers variable detector movement (SID), first in segment machine to offer table swivel to facilitate wider variety of vascular procedure.

## The Future

Pinnacle Agile has recently acquired CE marking which opens international Market for IITPL. The 3rd Generation high end Cath lab is under development and the prototype to be unveiled in Q2, 2020.



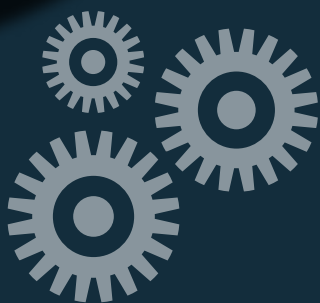
# M/S Workflow Automation

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Workflow Automation, Chennai is an enterprise born to touch the pinnacle in the fluid engineering industry. Workflow Automation is a superior reincarnation of the erstwhile Workstudy Hydraulics Pvt. Ltd., Workflow Automation is mentored by M.V. Robert a dynamic entrepreneur, with more than 3 decades of experience in the field of hydraulics, pneumatics and automation.

Workflow Automation provides customized engineering solutions to industries in automobile, defence, forging, railways, mining, machine tool, and aerospace to name a few. workflow automation also associates itself with R&D of various industries and educational institutions, such as IIT (Madras), to keep pace with the best and latest in technology.

WFA has expertise in design, production of automation special purpose machine like train couple test rig, train simulators, space craft simulation, and import substitutions, wet and dry leak testing machine, assembly line, scissor lift, chocolate mixing machine, bin tilters, de-coilers, TPM standard power pack, compact power pack and hydraulic cylinders.



## **The Innovation**

### **Gangway Test Rig**

Its primary use is to provide a safe passageway between vehicles this also assists with the flow of passengers on a train as it is used a dispersion mechanism. Furthermore, on certain trains such as a metro system the gangway is used as a passenger carrying space due to the design allowing a clear throughfare between carriages, in comparison to a commuter train where carriages are separated.

A gangway is a combination of bellows units, structural frames, support hoops and a floor system. This may sometimes include interior panels for the ceiling, floor and side panels.

A 2-piece gangway with two bellows units occupies the inter-vehicle distance as two units either side of some configuration of central frames; interface to vehicle ends by various means: interface of central frames to coupler or vehicle ends via suspension units. This gangway will typically be coupler supported.

## **The Future**

The company is working on next test rig using electrical servo actuators and the speed is main criteria where they are planning to increase the speed of individual electrical actuators for 300mm per second, which enables the endurance test to be completed 1 Lakh cycles in three months' time.

The 159 blocks would be completed in 8.5 seconds whereas in the earlier test rig it was 3.5 minutes.



# Poly Medicure Ltd

Poly Medicure Ltd is one of the leading medical devices manufacturer and exporter in India with dominant position in medical consumables market with focus on innovation, safety and quality. They have a vision of a world with the highest quality of healthcare to be made available to all. POLYMED have 5 manufacturing facilities in India (3 facilities in Faridabad and 1 each in Jaipur and Haridwar), 3 facilities overseas (One facility in China – wholly owned subsidiary, One joint venture in Egypt, One facility in Italy)

POLYMED today is:

- Largest exporter of consumable Medical Devices for last 5 years from India (Over Rs. 400 crores exports per year to 110+ countries).
- 8 manufacturing plants. Over 3 Million devices manufacturing capacity per day. More than 125+ products.
- Highest number of medical devices patents granted – 243+ patents.
- Over 5000 employees. 50+ people working in R&D Team.
- Revenue exceeding Rs. 600 Crores.

Leading Medical Technology and Innovative Solutions

Comprehensive Product Range

Diagnosis	Infection & Vascular Access	Neurological Access	Neuro Care
Gastroenterology	Enteral Care	Blood Transfusion	Diagnosis
Urology	Anesthesia & Respiratory Care		
Diabetes	Blood Management & Blood Collection Systems		
Surgery and Wound Drainage			

Portfolio of more than 125 Medical Devices      22 Years of manufacturing excellence

We Care As We Cure

Partner for great opportunities to work differently with health care providers "beyond the device."

www.polymed.com



## **The Innovation**

The company has initiated an innovative project of SAFETY IV CANNULA to eliminate possibilities of Needle Stick Injury's (NSI) during use of IV Cannula.

Under which their in-house R&D team has developed "Safety Needle Guard" a safeguard mechanism which automatically cover's the needle's sharp bevel after withdrawal of needle from the hub, minimizing the risk of needle stick injuries.

The 'safety clip' made of plastic and mix of stainless steel with smooth edges is quite ergonomic by design. It is also so compact that it is very easier to handle and is user friendly compared to other brands

## **The Approach**

Polymed's strong management has vast experience in innovation, product development and manufacturing. Their R&D developments is primarily focused on developing new products within existing as well as new critical care product verticals and further improving existing processes and productivity. Today, POLYMED is considered a technologically superior brand, which is a result of its advanced research and development facility and team. To combat competition and excel in the segment of medical devices, the Company's R&D has worked tirelessly to develop new and innovative products which can meet the demands of end-user. As a part of development process, the company's R&D interfaces with, Medical fraternity clinical team, marketing team to conduct research and to understand the requirements of the customers and create products with new features

## **The Future**

The company aspires for increasing their R&D spend to 5% of revenue.



# Prathista Industries Limited

Prathista Industries Limited is one of Asia's largest industrial fermentation establishments. The company is first of its kind in the concept of "waste into wealth" a biotechnology project.

Prathista is manufacturing and marketing wide range of "eco-friendly and bio-technology products". A unique feature of Prathista is having both the "aerobic and anaerobic fermentation facilities" under one roof for dealing with multiple strains simultaneously by using carbohydrates as raw material. By dealing with various microbes including fungus for production, Prathista caters to the needs of multiple segments viz., pharma (gluconic acids & its salts, lactic acid & its salts, proteino-lactogluconates), animal health care (cattle or poultry feed supplements), agriculture (organic agri inputs, bio-fertilizers, bio-pesticides, bio-control agents, botanical crop protectors), organic food ingredients etc.

Prathista is also a leading producer of Natural, Clean Label, NON-GMO, nutraceuticals (Food Ingredients) through the fermentation process & products are licensed by FSSAI - Govt. of India along with other global certifications like "USFDA, NOP, NON-GMO, Kosher, & Halal" etc.

Prathista is exporting its products to entire globe like Latin America, USA, EU Countries, UAE Countries, Africa & ANZ Markets.





## The Innovation

### Innovation 1

- High industrial value-addition for agricultural products like Polysaccharides (Carbohydrates), vegetable / cereal proteins through fermentation (Industrial) methodologies.
- Commercial exploitation to create value-addition for non-edible grade agriculture produces for manufacturing of innovative and eco-friendly chelated nutrients, based on bio degradable and multiple organic acids. (A focused innovation presently non-existent)

After years of Research on bench scale at in-house R&D center of Prathista Industries and based on success rate on bench scale technology, the process was further validated in pilot scale fermentation plants (starting from 5 liters to 50 liters to 500 liters to 5000 liters capacity) to develop technically feasible and commercially viable chelation technology based on industrial fermentation process to introduce innovative Organic acids base (Proteino – Lacto – Gluconates) chelating compounds for global market requirements.

### Innovation 2

- Natural Fermentation process for production of Natural Mold Inhibitors.

The formulations are developed based on non-GMO In-put raw materials using natural micro-organism.

Prathista formulations will have edge on other global player with less consumption of formulations and thus the formulations are most cost effective and economical for food processing industries.

- Process, product & Cost will compete with available products in the market globally,

Prathista has signed marketing agreement with USA & EU countries dealers & distributors and developed the market for natural mold inhibitors. The export & domestic market of food processing industries is contributing the profit up to 35-40 % in total company profit.

## The Benefits

### For Innovation 1:

Prathista have commercialized a dozen of products in combination of salts like Mn, Fe, Zn, Mg, Cu, B, K, Ca etc. and introduced to Market in Prathist Own Brand and also through corporate clients like Deepak Fertilizers & Petrochemicals, Shriram Fertilizers & Chemicals, Tata Chemicals, Tropical Agrosystems etc in their brand name, which shares the Profit upto 55-60 % in Total Company Profit.

The Innovative technology/products will be directly benefit to poor farmers/farming community in following ways:

- a) It improves nutrient value of the soil and there will be no fixation problems.
- b) It improves Soil Health.
- c) 100% water soluble & 100% Bio available.
- d) It substantially improves nutrient value and quality of farm produce and there will be no residual effect on farm produce.

### For Innovation 2:

Prathista has multiple products to serve various segments and thus annual sales are increasing @15-16% and expected to enhance 40% shortly as Prathista introduced new Food Ingredient products which are 100% import substitutes and with Clean & Green label, non-GMO products to focus on global market demand of \$ 300.00 Billion annually which is growing substantially.

## The Future

The company is working on incorporation of nano technology products based on Organic acids for agricultural sector for substituting chemical fertilizers and also to enhance crop yield. The present innovation deals with the formation of natural and organic nano fertilizer with the chelated nutrients to balances plant nutrition; improve water holding capacity, soil health improvement, sustainable productivity and quality improvement. The synthesis of nanoparticles at lowest possible size leads to effective incorporation of nutrients to the cell which leads to enhancement of its ability of absorption.

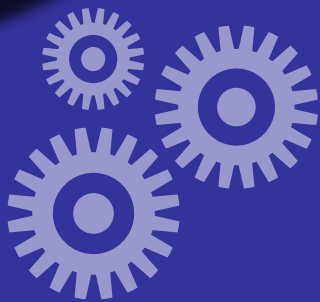


# Tata Chemicals

Established in 1939 in Mithapur in Gujarat, Tata Chemicals Limited (TCL) is a part of the US\$ 110 billion Tata Group. They serve customers across 40+ countries in five continents. The company brings together their knowledge, expertise and innovation prowess to positively impact industries, consumers and farmers with their science-led products spread across three business verticals - basic chemistry, consumer products and specialty products.

The story of the company is about harnessing the fruits of science for goals that go beyond business. Tata Chemicals has been rated within the top 10% in Business and Consumer brands across all industry and consumer brand categories in India by Superbrands™.

Sustainability as a practice is at the core of all of Tata Chemicals' activities, including their corporate social responsibility initiatives, and is intricately woven into all their business functions. In 2018, the company set up the centre of excellence for coastal and marine conservation, and the centre for sustainable agriculture and farm excellence. Their vision is to be a leader in corporate sustainability, focusing on all three elements of 'people, planet and profits'.



## The Innovation

### Innovation 1

Tata Salt was India's first packaged iodised salt in India, as part of the movement to counter iodine deficiency diseases in the country. Today, it is the market leader in India's packaged salt market — it commands a 65.4% market share in salt category, enhancing taste in more than ~160 Mn households annually with ~1.9 Mn Retail Outlets with total quantum exceeding 1 Billion Kgs in 2019

Tata Salt continues to be amongst the most trusted food brands for over a decade in India.

### Innovation 2

The Tata Swach Nanotech Water Purifier, ensures safe drinking water using silver nano-technology and effectively destroys bacteria and viruses without using electricity or running water.

Safe drinking water initiative made an impact on ~2 million households and created the employment opportunities for ~1100 village level entrepreneurs.

### Innovation 3

TCL HAS Launched 100% Natural Tata Nx - Zero Sugar and Lite Sugar, a substitute for regular sugar without the use of artificial sweeteners WITH additional health benefits. TATA NX Zero Sugar, sweetener based on a stevia, which is a natural herb with zero calories.

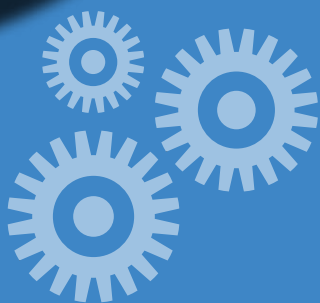
It promises to deliver nutrition in its best form, backed by science. TATA Nx has been designed to meet the nutritional needs of the new age Indian product offerings in replacement, correction and nourishment areas of food.



# Tata Consultancy Services Limited

A large white circular graphic on a blue background. On the left side of the circle, there are five colored rectangular boxes, each containing a service category: 'Cognitive AI' (orange), 'SMB' (green), 'Retail' (yellow), 'IoT' (teal), and 'Digital Inclusive' (orange). To the right of these boxes, there are logos and text for various services: 'ignio' with a stylized 'i' logo, 'iON' with a stylized 'i' logo and 'TATA CONSULTANCY SERVICES' below it, 'Optumera™', 'Digital Energy Management System', and 'Accessibility Solutions'.

Tata Consultancy Services (TCS) is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled, infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.



## The Innovation

### Innovation 1:

#### TCS IoT Powered TCS Energy Management Solution

This identifies anomalies and wastage in energy use in real-time enabling appropriate actions for conserving energy.

Enterprises face a challenge in meeting the energy reduction and sustainability goals due to lack of visibility and holistic insights of energy usage across the organization. TCS IoT-Powered ML/AI driven TCS Energy Management Solution helps in addressing this gap in real-time. With TCS' Energy Management Solution, enterprises can leverage the power of artificial intelligence (AI) and the Internet of Things (IoT) to accurately capture energy consumption data from disparate sources across geographies.

The solution can be used in different types of facilities such as large buildings, stores, malls, warehouses etc with minor configuration changes; this makes the roll out period shorter and ROI faster.

### Innovation 2:

#### TCS Optumera™

It is a pioneer AI powered product for strategic decision making for retail companies. It helps decision makers answer questions such as "How can I increase my company's revenue/margin by X% given the set of levers?". TCS Optumera leverages the power of AI and ML to localize and right size store spaces, curate shopper centric omni-channel experiences, preempt competitor pricing strategies in real-time, and enable optimal price recommendations. It derives rich insights from 1000+ data parameters and empowers leading global retailers from across segments to identify growth opportunities across space, mix and pricing and enables them to make localized decisions across siloes, with greater speed and precision, with explainable AI.

### Innovation 3:

#### TCS iON Digital Assessment

TCS iON Digital Assessment has redefined the way assessments are conducted in this country, by ushering in an era of effortless and paperless assessments. This Phygital solution, that overlays TCS iON's extensive physical infrastructure with cutting-edge digital technologies, provides a highly secure and seamless experience to the candidates, as well as exam conducting boards. A trusted solution for the country's major high-stake assessments, TCS iON digital assessment has recently touched a milestone of assessing 200 million candidates. It is a phygital solution providing a secure and seamless experience exam candidate and conducting boards. It has a single-touch question paper upload and distribution capability, that works without internet/network.

## The Benefits

For Innovation 1: Y-o-Y reduction in energy usage of facilities by 5-15 %.

For Innovation 2: Enables 3-5% uplift in sales and margins, >50% less time to market with 5x more strategies.

For Innovation 3: Reduced time, effort and expenses. Zero security risk.

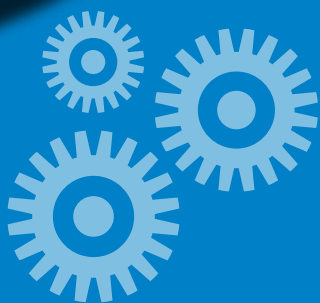
## The Future

All the above-mentioned innovations have clear roadmaps and are to evolve with emerging technologies.



# Tata Steel Limited

Tata Steel Group is among the top global steel companies with an annual crude steel capacity of 33 million tonnes per annum (MTPA). As on 31st March 2019, Tata Steel Group ranks 11th in the world in global steel production with a revenue of USD 23 Bn. Crude steel production stands at 13.23 MnTPA for Tata Steel India, with an EBITDA/turnover of 29.38%. Tata Steel India can be described as a combination of 3 businesses / industry types – mining, iron & steel and engineering & projects because of the scale at which these activities are performed in the company. The diversity in the major activities, coupled with the challenges of a long and integrated value chain, requires a complex balance of handling heterogenous raw materials (7 types) to produce homogenous hot metal to finally meet a variety of customized requirements of customers in the chosen market segments. This has been achieved through focus on quality and breakthrough / continual improvements which has helped create a leadership position in the market place. Further, Tata Steel operates in multiple geographies within India, working closely with a large number of stakeholders. The operating principle continues to be excellence driven and inclusive with a focused commitment towards positively impacting the environment and lives of the communities in its areas of operation.



## The Innovation

Tata Steel, an integrated steel manufacturing company, prides on its cold rolling mill complex which rolls premium grade steel products for the automobile customers. In any integrated steel making process, through the continuous casting route, the casting impurities can get trapped as inclusions. This is despite all the advancement in casting technologies in form of “vertical bending casters” and other supporting technologies such as “hydraulic mould oscillators” and “electromagnetic brakes”. These inclusions from the casting process will inadvertently manifest themselves into very small hole(s) during the cold rolling and skin pass process. Currently no practices can ensure 100% inclusion free steel. Therefore, it is important to accurately detect these holes arising out of rolled-in inclusions through infrastructure strengthening of Tata Steel’s internal quality processes

Manual detection of the holes, arising out of inclusions, moving at high speeds is unimaginable. Even with the introduction of state of the art automatic surface inspection systems(SIS), it is difficult to differentiate between a “severity-1 spot-mark” and “miniscule through- hole”. The sophisticated SIS will lack the capability to detect the latter. Passing a hole to the customer has serious consequences- it usually magnifies in proportion during the Auto body forming process and will manifest itself in “tear” of automotive body part. This would result in customer complaints and dent Tata Steel’s reputation.

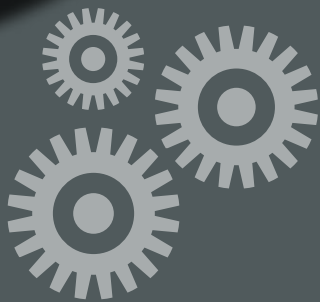
An innovative technological solution based on “imaging processing techniques” to detect minute holes in cold rolled coils was developed. This conceived solution “DE-HOLE” takes a leaf out of nature’s book and amalgamates with simple yet sophisticated imaging technology. The innovative solution ensures “zero hole” defect to automakers. This system has been deployed in various lines at Tata Steel’s cold rolling mill complex.



# Thejo Engineering Limited

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THEJO Engineering Ltd is a leading industrial solution provider for belt conveyor based bulk material handling systems, corrosion protection, mining and mineral processing applications. They are the pioneers of conveyor belt splicing by the cold vulcanizing, in-situ pulley lagging and in-situ recapping process of conveyor belts. THEJO is one of the few companies in the world offering design, manufacturing, marketing, servicing, consultation, operation and maintenance activities under one roof. THEJO has a global presence with subsidiaries in Australia, Saudi Arabia, Brazil and Chile. THEJO has five manufacturing plants and their sophisticated R&D Centre is recognized by the Department of Scientific and Industrial Research (DSIR), Government of India, New Delhi. THEJO was started as a partnership firm and now it is transformed into a listed public limited company. They are the first company to be listed in the National Stock Exchange of India-EMERGE platform.





## The Innovation

### Innovation 1

The innovation automatically controls and monitors three essential parameters (Pressure-Temperature-Time) during the vulcanization process while splicing a conveyor belt to minimize manual errors. The parameters can be remotely controlled and monitored by a process expert. This invention also enables real time data logging of the parameters and helps build a database for future reference. It has a user-friendly touch screen interface for setting or editing the parameters. A provision for live video streaming and recording the entire splicing operation for monitoring as well as future reference is also present.

### Innovation 2

Transfer chutes used in the mining and material handling industry face rapid wear, abrasion and choking leading to unscheduled breakdowns, frequent maintenance and spillage. Thejo's innovative bulk flow chutes ensure free and continuous flow of material. The design involves simulating the site conditions using advanced discrete element method modelling and is further optimized with the help of their experienced engineers and use of unique lining systems to get the best results. The segmented design helps in safe and easy installation, quick replacement and maintenance. Innovative wear monitoring feature eliminates the need for confined space entry.

### Innovation 3

Conveyor belts tend to mis-track laterally toward either side causing material spillage, conveyor damage and fatal accidents. Conventional trackers have limited tracking ability and comes a with single pivot prone to premature failures. The innovative dynamic tracker is made of multiple tracking rollers combined to form a dynamic tracking assembly. The tracking modules are mounted on a flexible base, forming a garland of tracking rollers. Multiple tracking rollers are linked together making the rollers swing in tandem. Whenever belt travels off-center, the actuating rollers activates the dynamic link mechanism thereby swinging the rollers in tandem such that the belt is guided back to the true line.

## The Benefits

### For Innovation 1:

The innovation helps the customer to set, control and record critical parameters during belt splicing with least human interference thereby reducing the probability of splice failures.

### For Innovation 2:

This innovation ensures smooth and continuous flow of bulk material thereby reducing breakdowns and creating longer intervals between liner replacement. It also helps keep the environment clean by reducing dust and spillage.

### For Innovation 3:

The innovation helps keep the conveyor belt aligned by dynamically tracking the belt with the help of a unique garland shaped multi-roller tracking mechanism keeping the belt in its natural 'U' shape.

## The Future

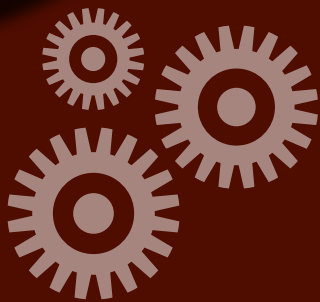
THEJO aims to be a one-stop solution provider to the core sectors, always ensuring safety, reliability and quality through innovation. Their vision is to establish globally, as a leading engineering solutions provider for bulk material handling, mining and corrosion protection industries.



# Umber IT Solutions LLP



Umber IT Solutions LLP is among the top 10 UX Design consultancy firms in India and the finalists of NAASCOM Design4India Awards 2019. Founder-Director Shetall Natuu, is a design educator from National Institute of Design. She has deep knowledge of large system design, innovation and design thinking . Umber is a company registered with Startup India. Umber Ghar is a Cloud based SaaS Platform for RERA Compliance and Management. The company has applied for Patent for its innovation. The whole platform is visualized, built and deployed with Indian eco system in mind. The software aims to bring in Social Innovation in the field of Real Estate and improve the counties 'Transparency Index'. Umber Ghar is a user centered design solution for home buyers, builders and regulatory authorities and can be used by any states, and any scale of Project.



## **The Innovation**

RERA websites shows information to the home buyers which is difficult to understand. With apprehension about their investment, the high customers do not get specific progress of their property from RERA websites. Umber Ghar platform brings transparency, ease and accuracy in RERA filing, avoids duplication of data and connects all stakeholders with a single moment of truth.

“Seeing is believing “is the prime value of Umber-Ghar, customers can easily understand the home and project progress through their mobile devices. Access management and role control mechanism can be used independently by architect firm, civil engineer firm and CA firm or in tandem with builder team .The duplication of work is avoided and buyers get to see real progress in the form of Photographic TimeLine and Videos. Dashboard for builders, time stamped photo gallery, Single page website with real-time updates for non-registered users makes this a unique solution. CRM which holds details of customer’s payments, with ability to auto generate emails makes life simpler for the builders. The same data is then used to comply with the quarterly RERA updates which are done with the power of robotic process automation. This reduces time to update information and makes the process Error free.

With city spaces shrinking there is a need of re-development. the same platform very effectively scales itself up for existing housing societies. It holds all society documents, gives access to housing society members and brings 100% visibility and Transparency to the entire redevelopment process. Umber Ghar SaaS platform helps develop strong customer relationship. And also achieve RERA compliance needs. This application can be used pan India, for all the scales of projects like the small builder, branded developer companies, multi city corporate companies and govt. housing bodies. Transparency will boost the economy and bring more investment.

## **The Approach**

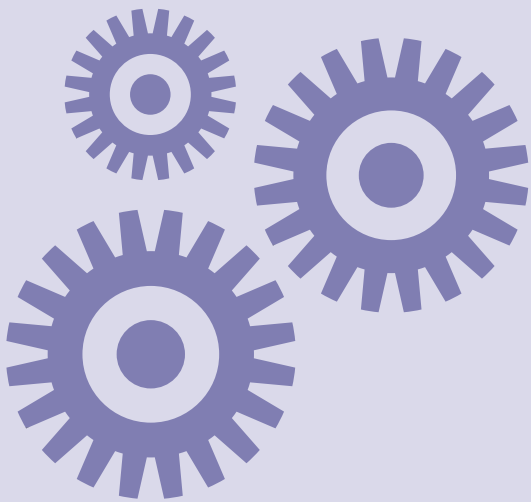
Preparation of data is simplified according to state RERA requirements, auto certificate are generated in the software and auto RERA filing of data and pdf files is managed by robotic process automation. Report management for purpose of record keeping and all projects having accesses with one single log-in to all stakeholders like Architect, engineer and CA can access their respective Forms through access control.CRM of the application has 2 unique functions. First is transparency of project (common area facilities) and buildings (different stages, floors and units). Data is taken by photo, video, CCTV, timeline, bar charts and such multiple methods.

## **The Benefits**

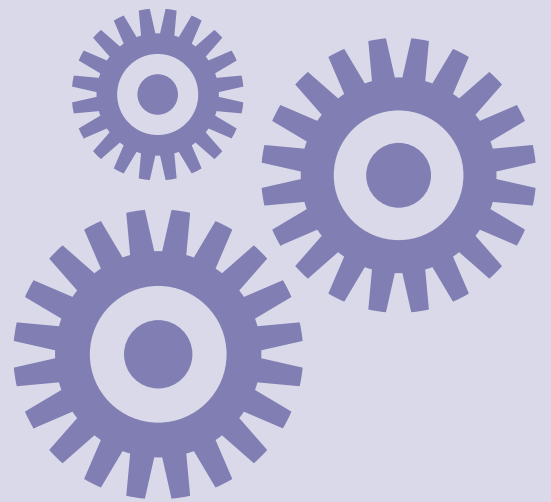
Home-buyer is the most important beneficiary of the system. He sees the project tracking and building progress, flat detailed progress, payments details and agreement details are all stored in his space. Umber-Ghar is the First Software developed keeping RERA act in mind. Umber Ghar platform when used solves and helps this topic in totality and is a unique solution in this regard and improves the counties Transparency. The construction segment is considered a low tech and non transparent market. This solution will promote more visibility and attract more external investments in the country.

## **The Future**

Unorganized segment lacks expertise to manage compliance. This being a cloud based platform all latest rules, amendments are made available to the end users resulting in 100% compliance. government bodies like PMAY should adapt to this unique platform which is secure and scalable, should be leveraged by the respective authorities.



# Award Ceremony Partner







KASSIA is a pre eminent MSME Association based in Bangalore. Set up in the year 1949, the organization was founded by R.S.Aradhya, a freedom fighter, initially with a membership of 15.

The objectives of the institution were to promote small enterprises in the Country at a time enterprise was a rare phenomenon. The focus, therefore, had to be on motivating the first generation entrepreneurs to set up industry, particularly manufacturing, as ancillaries and components suppliers to the medium and large scale enterprises, both in the public and the private sectors.

Over the years, KASSIA has grown into a huge organization of micro and small enterprises with membership of over 11,500 today with 121 affiliated associations.

KASSIA is the premier institution representing the interests of SMEs Karnataka and the Country having representation in all the major Government committees, including the membership of the MSME Board, in New Delhi, besides the committees and the boards in the State such as KSSIDC, among others.

KASSIA is run by a Council of Management elected annually with President, Vice President and Hon.General Secretary and other Office Bearers. KASSIA functions as the eyes and ears of MSMEs and vigorously takes up with the Government policy issues that concern the sector with regular interfaces. Today, KASSIA has a national and international reach and exchanges delegations with important regions of the World besides participating in fairs and exhibitions to benefit members and SMEs in general.

KASSIA is an ISO 9001-2015 certified organization and also has accreditation with QCI under the scheme of Industry Associations / Business Membership Organizations.

KASSIA works through different committees with the support of a well staffed Secretariat and state of the art infrastructure.













## Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, playing a proactive role in India's development process. Founded in 1895, India's premier business association has more than 9100 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 300,000 enterprises from 291 national and regional sectoral industry bodies.

CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes. Partnerships with civil society organizations carry forward corporate initiatives for integrated and inclusive development across diverse domains including affirmative action, healthcare, education, livelihood, diversity management, skill development, empowerment of women, and water, to name a few.

India is now set to become a US\$ 5 trillion economy in the next five years and Indian industry will remain the principal growth engine for achieving this target. With the theme for 2019-20 as 'Competitiveness of India Inc - India@75: Forging Ahead', CII will focus on five priority areas which would enable the country to stay on a solid growth track. These are - employment generation, rural-urban connect, energy security, environmental sustainability and governance.

With 68 offices, including 9 Centres of Excellence, in India, and 11 overseas offices in Australia, China, Egypt, France, Germany, Indonesia, Singapore, South Africa, UAE, UK, and USA, as well as institutional partnerships with 394 counterpart organizations in 133 countries, CII serves as a reference point for Indian industry and the international business community.

## Confederation of Indian Industry

The Mantosh Sondhi Centre

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