Industry 4.0 is essential for making us Atmanirbhar

Warm Greetings, hope you along with family & friends are keeping well!

The Indian manufacturing sector is in a transitional phase. While the threat of Covid-19 recedes over time, the pandemic will change the Indian manufacturing quite substantially. With uncertainty in demand and supply most of the manufacturing facilities are still running at sub-optimal capacities as they gradually move towards recovery. Serious cash crunch and reduced workforce are also significant issues that the industry is facing. In spite of all these challenges we have a silver lining with extreme focus on making India Atmanirbhar which in long term will drive increase in demand, production facilities and reduce supply chain disruptions. This needs a mindset change. Technology will be able to support this positive disruption with constraints of skilled workforce availability and safety concerns. Focusing on automation needs driving the transformation, we are getting into a co-existence of Man & Machine.

Although advanced and collaborative technologies are making manufacturing efficient, finding the right technology stack at this

juncture is important. Addressing uncertainties on assembly lines, reduced manufacturing waste, cost and other shop floor activities will drive Industry 4.0 adoption.

We are happy to see companies coming forward with strong urge to redefine their operations with digital adoption. Manufacturing Innovation Challenge (MIC-2020) that we recently hosted received exceptional response from industry, startups and academia. This has made us much more confident of the platform we are building to bring all stakeholders together with an objective to drive innovation with digital. We are also seeing mutual co-existence of large technology companies and start-ups to address the changing needs of the industry.

AMIT SALUJA
Sr. Director & Center Head,
NASSCOM CoE-IoT & AI

NASSCOM Insights - Digitalization is becoming inevitable for business transformation and competitive positioning in the industry

The business environment is going through a rapid disruption. Digital technologies are gradually getting integrated into the value chain of most industries due to the changing dynamics and preferences. According to a NASSCOM report in collaboration with AVASANT titled "Defining the Digital Enterprise", 63% of enterprises have already realized that going digital is critical to stay competitive in the market. The mature firms are more focused on charting out disruptive objectives through digital adoption. Hence, 56% of current digital projects have already converged analytics, artificial intelligence (AI), Internet of Things (IoT) and Robotic Process Automation (RPA) signifying that these foundational tools have reached adoption maturity and can be used as convergence initiatives. The convergence of these emerging technologies drives the Industry 4.0 adoption. Though each technology stands at a different point of maturity, the technologies widely adopted in production

are cloud, social media and Cyber Security. While different industries are planning to adopt different technologies in the next 24 months, manufacturing companies would primarily adopt Additive Manufacturing in the coming times.

Link to the report:
https://community.nasscom.in/communities/digital-transformation/defining-the-digital-enterprise-nw-2020.html

Voice of Manufacturing - Addressing the Manufacturing Sector Rebound

COVID-19 Implications on the Manufacturing Industry - Manufacturing needs fast track of digital adoption
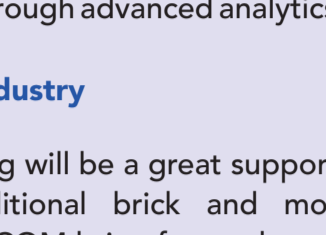
Manufacturing industry in current time which is reeling under the impact of the COVID pandemic is experiencing a massive decline in business due to a stagnating economy, market demand and the disruption of global supply chains. Raw material availability has been severely impacted due to constraints in production and challenges in transport and logistics. Customs clearance/port operations is another challenge companies are facing. Labour workforce has also been majorly hit due to the migrant workers returning to their natives. There is a sense of fear amongst employees.

Digital technologies can help mitigate these challenges to large extent particularly to improve employee safety, operational efficiency, asset productivity and product quality. Advanced technologies are improving remote collaboration thereby reducing the need for employees to be at workplace. Apart from contact tracing mobile apps and videoconferencing applications, advanced solutions such as machine-vision algorithms and wearable technologies can help to enhance employee safety and product quality. Accelerated adoption for fast-track solutions will aid companies to respond and adapt to the new norms.

While companies keep working on long term digitalization plans there are immediate technology led short term initiatives that can help:-

- Flexible approach through Digital work instructions, AR based assistance, inexpensive retrofit automation
- Strict guidelines on employee safety through cloud-based digital solutions and visual analytics models
- Strict vigilance on the facilities infrastructure and social distancing norms tracked by Smart ID Cards

- Constant reminder and awareness on the worker health, symptoms and the regulations of Do's and Don'ts
- Analytics led task allocation based on shift rotations
- Enabling Work from Home through Smart Technologies for employees who are not directly on shop floor jobs.
- Increasing supply chain visibility through advanced analytics.
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K. K. SEKHAR
Former Managing Director
Bosch Automotive Electronics

Ecosystem that NASSCOM is building will be a great support to non-IT companies, especially traditional brick and mortar industry. Will be great to have NASSCOM bring forward specific digital solutions that can help companies to manage current crisis. Continuous interactions through makers like this and other possible mode of communication must be done on an ongoing basis as the "Food for Thought". There is a need to have dedicated focus on enabling manufacturing companies on Industry 4.0 and adoption of digital technologies.

Manufacturing Innovation Challenge 2020

NASSCOM CoE- IoT & AI invited innovative and mature start-ups across the nation, having deep-tech capabilities to find solutions to few of the immediate real time industry challenges like **Workers Health & Safety, Predictive Maintenance of High Value Assets and 360-degree virtual tour of plant** given by our Industry partners JK Lakshmi Cements Ltd, Bajaj Crop Science Ltd. & Tata Chemicals Ltd. With unprecedented response from the matured start-ups in India, it was exciting to see the tremendous potential we have in our startup ecosystem. Though over 50 solutions were identified as the most compelling and innovative, the rigorous process of evaluation announced AirVibes, Allurvianand Chitans as winning entities. The panel of Jury and Mentors was a blend of senior industry leaders and academia. The initiative to foster the collaboration of industry leaders & startups is bringing about a digital differential an overwhelming response by the industry. Vinita Singhania, MD, JK Lakshmi Cement was quoted saying **"We are delighted to be a part of such an initiative from NASSCOM CoE. Manufacturing Innovation Challenge has helped us connect with top class start-ups who can be of big help in creating our future innovations. We encourage other manufacturing companies also to leverage this platform as a means to make your plant smarter and safer with digital".**

Speaking on the occasion, Sunil Gaur, Joint Secretary, MeitY, Government of India, said "In current times, the significance of such an initiative is at an all-time high. Even the Government of India is cognizant of this and made the clarion call for an Atmanirbhar Bharat. The Manufacturing Innovation Challenge 2020 is a perfect example of this cross collaboration to further innovation & build Self reliant manufacturing." A panel of mentors comprising Shanmugamathan Raman, Dr Madhu Vadali from IIT Gandhinagar and few others had been assembled into six cohorts to mentor start-ups on any technical challenges, feasibility of the solution and bringing it innovation with the proposal.

The chosen start-ups will now get an opportunity to work on a remunerative Proof of Concept with companies who nominated their use cases. In addition, start-ups will also get one year membership to the NASSCOM CoE Accelerator Program.

1st MIC 2020 – Benchmark in Enterprise – Startup Collaboration

Voice of Manufacturing Webinar Series

The e-Conclave led by NASSCOM CoE IndDIC is an industry drive to understand the immediate challenges to sustain the 'New Normal' across the manufacturing sector, dodging the supply chain bottleneck and ideation the emerging technologies enabling revival amidst the crisis. This revolves around pressing points on manufacturing industry functions, advanced technologies and digital solutions to navigate the way ahead.

- **Voice of Manufacturing, Edition 3 held on 14TH July 2020, Unlock with Self-Reliance** - NASSCOM CoE & Volvo-Eicher constructively discussed the various possibilities to solve the underlying industry challenges. It also highlighted certain challenges pertaining to unavailability of end-to-end solution, the technology gap, limited digital integration. NASSCOM CoE IndDIC proposed few areas of adoption like Workplace Health Compliance, Connected Supply Chains, Promotion of Localization helping the industry to move with the New Normal.

for transformation through IIoT framework, an integrated ecosystem, focus on driving low cost and efficient manufacturing process. In addition, right cultural mindset and customer excellence was also part of the discussion.

- **Voice of Manufacturing, Edition 4 held on 20th July 2020 - Rebooting the Industry Supply Chain through Smart Manufacturing & Digitally connected operations** - The fourth edition of the Voice of Manufacturing E-Conclave led by NASSCOM CoE IndDIC engaged withMahindra & Mahindra and Endurance Technologies. The session marked participants from L&T Infotech and Foundation of Smart Manufacturing (IIT Delhi & Automation India Association) an Industry 4.0 program under the Department of Heavy Industries (DHI), Government of India. Participation across industry segments highlighted the current state of the automotive industry, with the two-wheeler segment likely to benefit due to the rising demand of personal mobility. It also addressed key concerns like - Disruption such as COVID19 driving digital technology adoption, customized framework

Virtual Masterclass Series on Industry 4.0 for the enterprise in association

The 'Virtual Masterclass Series' in association with SAP as a Knowledge Partner, NASSCOM ERBD and NASSCOM Future Skills is about Industrial transformation using new digital technology, helping industry recalibrate customer priorities & re-imagine technology adoption. The 12-part knowledge series is a deep-dive into the world of enterprise technologies and learning on creating 'The Intelligent Enterprise'. The Masterclass series will also help to understand the significance of Industry 4.0 as just not about automation of the shop floor and its interconnectedness to the supply chain.

- The event held on 29th July 2020focused on workings of all-things IoT particularly on device connectivity, digital twin, contextualize sensor data, action-driven business integration, shop floor integration and more.
- The session held on 12th August 2020 was based on Big Data and Analytics learnings helping to understand the building blocks of predictive analytics.

Weaving the Digital Thread for Manufacturing happened on 22nd July 2020 with a focus on changes and challenges in manufacturing due to COVID19 and implications of next gen technologies in addressing industry challenges.

Demystifying 5G - Current State and Preparedness for 5G readiness focused on fundamentals of 5G, current state of readiness and path forward to 5G enablement. The event took place on 5th August 2020.

Announcement

NASSCOM CoE IoT & AI and CIOs of India signed an MoU to accelerate technology adoption and to foster the innovation ecosystem. Dynamic business environment today with unpredictable challenges is demanding innovative solutions to increase productivity, efficiency and agility in manufacturing processes and Industry 4.0 delivers just that. This collaboration is aiming to solve industry challenges through piloting innovative digital solutions by working on a list of Use-Cases that are relevant for the Manufacturing Industry. The association between NASSCOM CoE and 'CIO's of India' will help to enable industry to keep abreast of advancements and practical applications of new age technologies like AI, ML, AR, VR, IoT, Blockchain and Cyber Security. This association is aimed to help build partnership with innovator ecosystem (Startups / SMEs) to accelerate technology adoption.

UPCOMING PROGRAMS

Digital Dialogues: Season 2 - Industry 4.0

The amalgamation of key business issues like devising strategies, attracting and retaining the right talent in the age of AI, automation and robotics, manufacturing best practices and how to come up with probable solutions is what is the focus of the 4-episode series. While the first segment of the series took place on August 28th, 2020 the broader themes on Intelligent Industry, Agile Industry, Autonomous Industry and Resilient Industry would take place as on September 8, 16, and 29th, 2020 respectively. This virtual event done is in association with StrategINK, sponsored by Dell Technologies and supported by NASSCOM Center of Excellence.
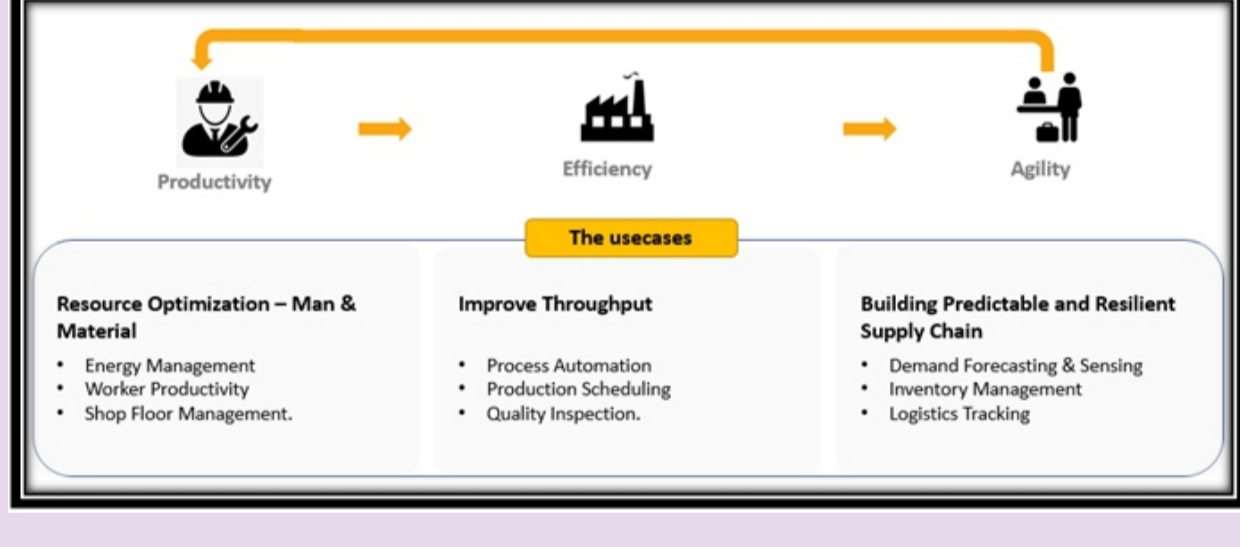
You may want to register to hear out the industry and technology leaders -
https://register.gotowebinar.com/register/7093239474452802063

Manufacturing Innovation Challenge, Second Edition

Manufacturing Innovation Challenge (MIC) was launched to accelerate the collaboration between the industry and the start-ups to solve existing challenges through technology adoption. With the huge success of the first edition and after receiving overwhelming response from the industry and the start-ups, we are ready to launch the 2nd edition of MIC in the second week of October. 2020. We are calling for the nominations of the use cases from the enterprises on three broad categories to solve the challenges around Resource Optimization – Man & Material, Improve Throughput and Building Predictable and Resilient Supply Chain. The last date of nominating the use cases is 18th September 2020. The nominations can be emailed to mahesh.v@nasscom.in

Accelerating through Innovation - Startup Corner

Plugo India Pvt. Ltd

Team: Nawal Laddha, Abhishek Kumar | **Solution:** PlugO

Use Case: A network of internet-connected vending terminals to dispense power banks across locations like airports, offices, shopping malls, restaurants, universities, etc.

Solution Implementation: Plugo an IoT enabled, fully automated power bank rental platform focusing on solving a problem which users can find themselves with a dead battery and no power bank at hand. The solution implemented connects the dots of internet and IoT to offer power banks on rent. The product is a compact device equipped with charging guns. Simplicity and optimum user experience makes the device one of its kind. The company's innovative power bank rental service is clearly connection is made through hardware software interaction which they have ingeniously implemented by applying the latest IoT framework.

The key users of the service are: Office going population; Out-station travellers & feet on street. The user base has a very high dependency on their mobile phone and is impacted financially or emotionally if their device runs out of battery.

Major Customers: Hyderabad Metro, Mumbai Metro, Durzo, Swiggy, Zomato, Fortis Hospital, Apollo Hospital, Manipal Hospitals, Deloitte, Accenture, SBI, HDFC, Phoenix Market City, etc.

Website: https://plugo.in/

Plutomen Technologies Pvt. Ltd

Plugo India Pvt. Ltd

Team: Keyur Bhalavat, Hiren Kanani, Ravi Patel | **Solution:** Plutomen ARMS and Plutomen V-Notes

Use Case:
Plutomen ARMS - Preventive maintenance, inspection, problem identification &troubleshooting, on-the-Job training, & quick fixes
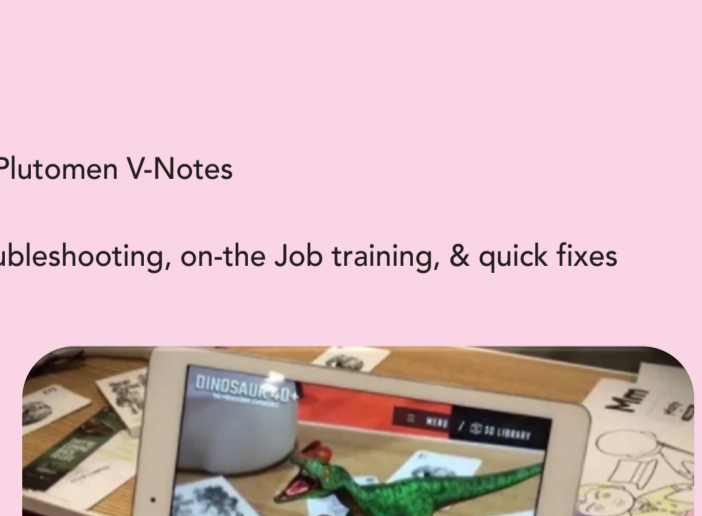**Plutomen V-Notes** - Better planning, designing, audit and task allocation

Industry Challenge: Complex maintenance of machineries, equipment and products make it a stressful task to explain and demonstrate to the operational managers and technical engineers. Along with it, lack of efficient technology to train service field engineers makes it difficult to achieve operational productivity and profitability. Capturing the knowledge of retiring and resigning senior employees in an organizational learning is also a challenge.

Solution Implementation: Plutomen ARMS is Augmented Reality based Remote Assistance Platform for peer-to-peer collaboration, better & faster maintenance operations.**Plutomen V-Notes** is an AR based Virtual Sticky Notes tool which allows to tag Notes/Images/Videos in the real-environment. V-Notes facilitate collaboration of Computer Vision and Augmented Reality. The solution is available currently in iOS & Android. The team is exploring technology offerings like Smart AR Glasses as well.

Major Customers: Arvind, Adani, L&T, Transformers and Rectifiers, Milacron.

Website: https://pluto-men.com/

Alluvium IoT Solutions Pvt Ltd

Plugo India Pvt. Ltd

Team: Mr. Suraj Aranamkkote Rajan, Mr. Aranamkkote Ajith Sivan and Ms. Siri Chandana Medichil

Solution: Iahvachi, dhruvh and Magic Key

Use Case:
Iahvachi - Safety Score Card of Contractual Workers with IoT
dhruvh - Analytics based solution to keep COVID at bay
Magic Key - Contactless operation of day to day touchpoints

Industry Challenge: How to improve worker safety and productivity in large workforce? How to improve worker productivity without fear? After the Internal Crisis, functioning of a organizational/company is vital & there is a need to look at risk in work environment with covid-19 in mind. With Workmen getting back to work environment, how to reduce touch without impacting the workmen operations.
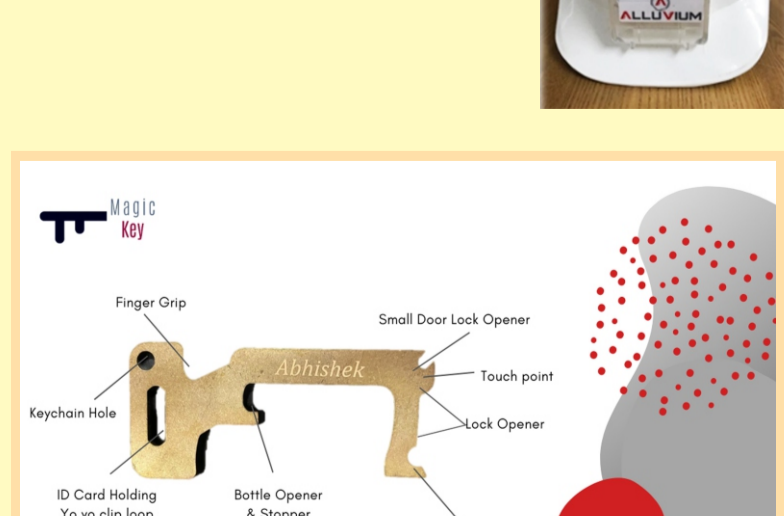
Solution Implementation:
Iahvachi - 'IoT' based analytics-based 'key action' steps to enhance Productivity & Safety. They have applied the Geofencing technology, the device is mounted on the different forms namely Safety Vest, Helmet or Belt Buckle and Locks, Environment and Safety and Quick

Magic Key - Magic Key allows any individuals to touch any surface, door, and switches without transmitting bacteria to hands. Magic Key is available in Brass, Stainless Steel and Copper variants.

dhruvh - HRA institute backed analytics-based recommendations on key action steps to reduce risk of covid-19. dhruvh is the low-cost analytics solution to keep COVID at bay. dhruvh offers Propositions on various strategies to keep a track of Social Distancing and Monitoring of Workplace.

Magic Key - Magic Key allows any individuals to touch any surface, door, and switches without transmitting bacteria to hands. Magic Key is available in Brass, Stainless Steel and Copper variants.

Major Customers: Aries Agro Ltd., Laxcon Steels Ltd.

Website: http://www.alluvium.in