



MODERN
MANUFACTURING
INDIA

WWW.MMINDIA.CO.IN

The Official Magazine of

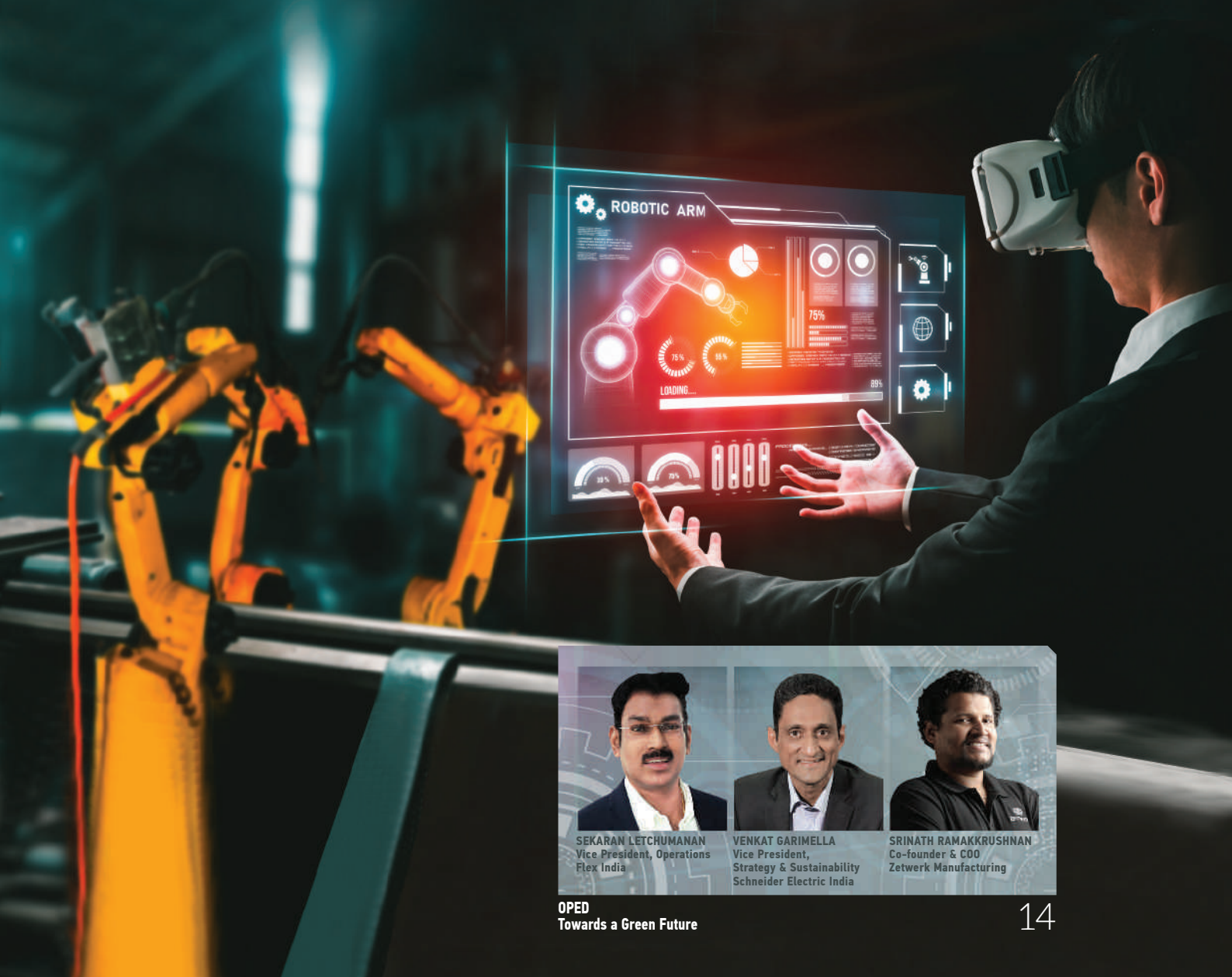


Indian Machine Tool
Manufacturers' Association

In Association with



IMMERSIVE TECHNOLOGIES IN MANUFACTURING



SEKARAN LETCHUMANAN
Vice President, Operations
Flex India

VENKAT GARIMELLA
Vice President,
Strategy & Sustainability
Schneider Electric India

SRINATH RAMAKRISHNAN
Co-founder & COO
Zetwerk Manufacturing

NATIONAL PRODUCTIVITY SUMMIT 2021

“Showcasing Excellence in Manufacturing”

10 -11 December 2021

VIRTUAL SUMMIT



To champion the cause of Productivity and enhancing competitiveness in the Indian manufacturing industry, Indian Machine Tool Manufacturers' Association is organizing the 15th edition of National Productivity Summit, 10-11 December 2021 (Virtual Summit). The event showcases best practices in manufacturing through Inspiring Keynotes and Live Case Study presentations, which will witness a large participation of manufacturing professionals across the country.

Winners will be crowned as Productivity Champions and awarded the IMTMA - Ace Micromatic Productivity Championship Awards 2021, which will comprise of cash prizes upto Rs.10 Lakhs.



IMTMA-ACE MICROMATIC Productivity Championship Awards 2021

Contesting Companies

TVS Motor Company



Bosch



BOSCH

Mahindra and Mahindra

Mahindra
Rise.

Bharat Electronics Ltd.



Hindustan Aeronautics Ltd.



Ucal Fuel Systems



ROOP Automotives

ROOP

ZF Wabco India



Badve Autocomps



Associated Plasmatron



Watson & Chalin India



KEY TAKE AWAYS

- Listen to keynote presentations from industry leaders
- Learn and benchmark from best manufacturing practices
- Innovative approaches to address productivity challenges

ORGANISED BY



Indian Machine Tool Manufacturers' Association

AWARDS SPONSOR



To register online, log on to www.productivity.imtma.in

For details, contact : **Abhishek** :

Mob: 9844294387 | E-mail: abhishek@imtma.in

Prashant : Mob: 9916855765

E-Mail: prashant.k@imtma.in

AUTOMOBILE



ENERGY

AEROSPACE



DEFENCE

INFRASTRUCTURE

HEALTHCARE

TEXTILE

OIL & GAS

PUMPS & VALVES

DX Large Series
CNC Large Turning Centre



AX Series
CNC Turn Mill Centre



EX Series
5-Axis CNC Moving Column
Machining Centre



K3X8 FIVE
5-Axis CNC High Speed Bridge Type
Vertical Machining Centre



MX 12
5-Axis CNC Universal Machining Centre



MTX Series
CNC Multi Tasking Machining Centre



JYOTI CNC AUTOMATION LTD.

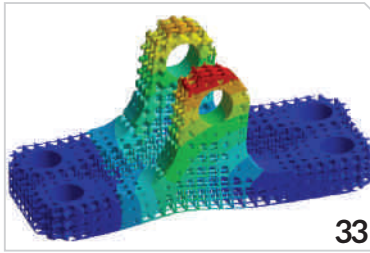
G – 506, G.I.D.C. Lodhika, Village : Metoda, Dist : Rajkot – 360021, Gujarat (INDIA).

T + 91 – 2827 – 235100/101, E info@jyoti.co.in, sales@jyoti.co.in jyoti.co.in

JyotiHuron

CONTENTS

VOL 5, ISSUE 4 - NOVEMBER-DECEMBER 2021



- | | |
|--|--|
| 06 FOREWORD | 29 PRODUCT
Frequency Analysis Without
Programming Requirements |
| 08 PUBLISHER'S NOTE | 30 MEDICAL MACHINING
Embracing a
Transformative Approach |
| 10 EDITORIAL | 32 SUBSCRIPTION FORM |
| 12 IMTMA'S DESK
IMTEX & IMTEX Forming 2022:
A Plug and Play of Innovations | 33 ADDITIVE MANUFACTURING
Creating Layer by Layer |
| 14 OPED
Towards A Green Future | 36 DIGITAL MANAGEMENT
On the Digital Path |
| 17 INSIGHT
For a Better Tomorrow | 39 SME
In the Right Direction |
| 19 PANORAMIC PERSPECTIVE
Internalizing the 'Why' Question | 42 SKILLING
Power of Collaboration |
| 20 VIEWPOINT
Changing Focus of Digitalization | 44 STARTUP
A Pioneer in Robotic Automation |
| 22 COVER STORY
Immersive Technologies
in Manufacturing | 48 EVENT SNAPSHOT
Impetus for Self-Reliant
Manufacturing |
| 26 COMPANY PROFILE
Going Beyond Solutions | 50 COMPANY INDEX &
ADVERTISER INDEX |

IMPRINT

**PUBLISHER &
DIRECTOR GENERAL & CEO, IMTMA**
V Anbu

EDITORIAL

Editor-in-Chief
Soumi Mitra

Chief Copy Editor
Poonam Pednekar

Senior Correspondent
Arunima Nath

Sub-Editor
Sovan Tudu

Correspondent
Arpan Ghosh

Design
Magic Wand Media

SALES & MARKETING

Indian Machine Tool Manufacturers' Association
(IMTMA)

Murali Sundaram, Magic Wand Media Inc
murali.sundaram@magicwandmedia.in

Published and Printed by V Anbu on behalf of Indian Machine Tool Manufacturers' Association (IMTMA). Printed at Pentaplus Printer's Pvt Ltd 20/1, 4th main, 5th cross, Industrial Town, Rajaji Nagar, Bangalore-560044, Karnataka and Published from Indian Machine Tool Manufacturers' Association; Head Office: 10th Mile, Tumkur Road, Madavara Post, Bengaluru - 562123, Karnataka. Editor: Soumi Mitra

Publishing frequency: 6 times per year

Manuscripts: No liability is accepted for unsolicited manuscripts. They will be returned only if accompanied by sufficient return postage.

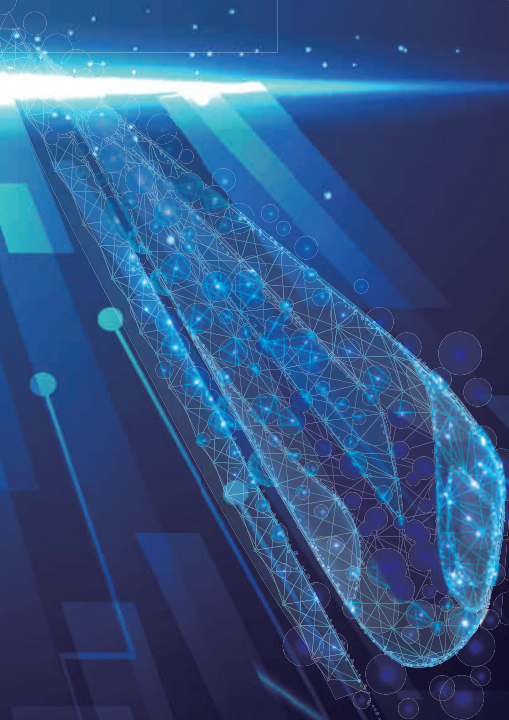
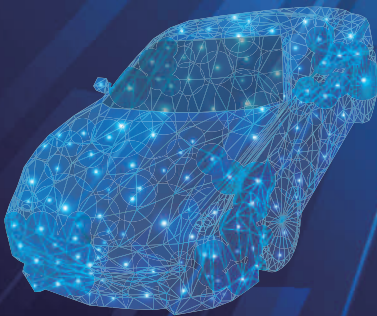
All rights reserved. Reprints, digital processing of all kinds and reproduction only by written permission of the publisher. Any views, comments expressed are the sole responsibility of the respective authors, IMTMA and Modern Manufacturing India and its partners do not undertake any responsibility, implied or otherwise.

Disclaimer: Every effort has been taken to avoid errors or omissions in this magazine. In spite of this, errors may creep in. Any mistake, error or discrepancy noted may be brought to our notice immediately. It is notified that neither the publisher, the editor or the seller will be responsible in respect of anything and the consequence of anything done or omitted to be done by any person in reliance upon the content herein. This disclaimer applies to all, whether subscriber to the magazine or not. © All rights are reserved. No part of this magazine may be reproduced or copied in any form or by any means without the prior written permission of the publisher. All disputes are subject to the exclusive jurisdiction of competent courts and forums in Bangalore only. While care is taken prior to acceptance of advertising copy, it is not possible to verify its contents. IMTMA cannot be held responsible for such contents, nor for any loss or damages incurred as a result of transactions with companies, associations or individuals advertising in its newspapers or publications. We therefore recommend that readers make necessary inquiries before sending any monies or entering into any agreements with advertisers or otherwise acting on an advertisement in any manner whatsoever.

TAIWAN

MACHINE TOOL

A Trusted Partner for
Intelligent Manufacturing



Sponsored by:



Bureau of
Foreign Trade



Taiwan External Trade
Development Council



Taiwan Machine Tool &
Accessory Builders' Association

USHERING IN A NEW ERA FOR MANUFACTURING



Source: BFW

RAVI RAGHAVAN
PRESIDENT
INDIAN MACHINE TOOL
MANUFACTURERS' ASSOCIATION
(IMTMA)

Dear Readers,

I feel privileged to address the readers of Modern Manufacturing India (MMI) magazine for the first time since being elected as President of Indian Machine Tool Manufacturers' Association (IMTMA) at its historic 75th Annual General Meeting (AGM) held in September 2021.

The country is quickly emerging from the dark clouds of uncertainty that had engulfed its economic landscapes due to the pandemic. The resurgence of economic confidence is widely apparent with a recent report of the International Monetary Fund (IMF) projecting real GDP to grow at 9.5 percent and 8.5 percent in 2021-22 and 2022-23, respectively.

The economy is picking up pace as consumer demand improves and supply constraints ease with strong agricultural production and resumption of manufacturing activities. According to Reserve Bank of India (RBI) estimates, India's real GDP grew by 9.6 percent in the July-September quarter. RBI survey also reveals higher Government spending, stronger order books and an improved pace of execution leading to improved demand conditions, primarily in the Infrastructure and Services sectors.

IMTEX 2022, the metal cutting machine tool exhibition & IMTEX FORMING 2022, the metal forming machine tool exhibition along with concurrent shows - Tooltech 2022 and Digital Manufacturing are being held on January 20 - 26, 2022, at BIEC, Bengaluru.

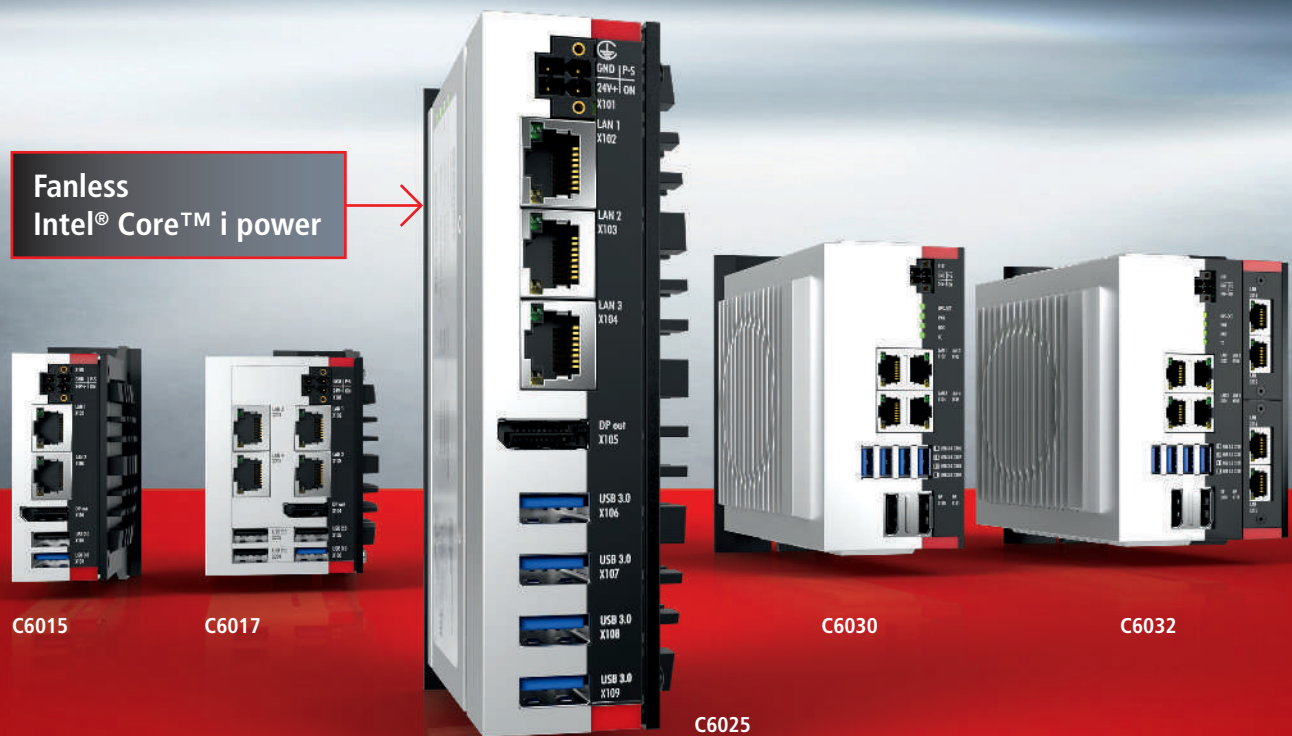
In the post-COVID era, we see different opportunity frameworks emerging for Manufacturing industries. The Machine Tool industry has been quick in adopting technologies and bringing in digitalization in the manufacturing ecosystem.

Manufacturers will have a lot to unearth when IMTMA organizes its flagship exhibition IMTEX in January 2022. I am happy to share that **IMTEX 2022**, the metal cutting machine tool exhibition & **IMTEX FORMING 2022**, the metal forming machine tool exhibition along with concurrent shows - **Tooltech 2022** and **Digital Manufacturing** are being held together on **January 20 - 26, 2022, at Bangalore International Exhibition Centre (BIEC), Bengaluru**. I call upon readers to visit the show to witness a live demo of technologies and solutions.

IMTMA is also organizing the 15th edition of the **National Productivity Summit 2021** on 10 - 11 December 2021, as a virtual event and **IMTMA-ACEMICROMATIC Productivity Championship Awards 2021** will be conferred during the Summit.

Once again, I wish all the readers of MMI magazine, happy reading and a great time ahead.

Fanless and powerful: C6025 ultra-compact Industrial PC



www.beckhoff.com/c6025

As a powerful member of the ultra-compact Industrial PC family from Beckhoff, the C6025 allows flexible installation and is designed as a fanless device which, despite its compact dimensions of 82 x 127 x 40 mm, offers exceptionally high computing power. This performance is delivered based on the Intel® Core™ i U processors with up to four processor cores and significantly reduced energy requirement. Even in the basic version, the C6025 offers 4 GB DDR4 RAM and 40 GB M.2 SSD as 3D flash memory (both expandable), a DisplayPort and four USB 3.0 ports, as well as an on-board Ethernet adapter. This feature set enables the cost-effective implementation of demanding control applications as well as advanced gateway or communication tasks.



Beckhoff Automation Pvt. Ltd.
Pune – 411 001, India
Phone: +91 (20) 6706 4800
info@beckhoff.co.in

New Automation Technology **BECKHOFF**



V ANBU
DIRECTOR GENERAL & CEO
INDIAN MACHINE TOOL
MANUFACTURERS' ASSOCIATION

With India's manufacturing PMI rising to 55.9 as against 53.7 in September, the focus now is on sustaining and expanding businesses as well as tackling everyday challenges to achieve optimum performance.

Dear MMI Readers,

The Manufacturing industry is trying to regain ground that it lost in the second wave of COVID-19. As the pandemic wanes, confidence in the economy is being strengthened. The perseverance of the Manufacturing industry is bearing fruits as India's manufacturing PMI expanded in October on strong demand conditions, rising to 55.9 as against 53.7 in September, according to IHS Markit India research. The focus is now on sustaining and expanding businesses as well as tackling everyday challenges to achieve optimum performance.

Meanwhile, Modern Manufacturing India (MMI) continues to bring you up-to-date information from the Manufacturing sector, including the Machine Tool industry, for you to keep tabs on the developments. This month's edition focuses on the Manufacturing sector.

Read on for a quick peek into an article by IMTMA on IMTEX & IMTEX FORMING, scheduled to be held in January 2022 at the Bangalore International Exhibition Centre in Bengaluru, which will spur manufacturing growth.

As we continue to share inspirational stories from across the world, we also reach out for your feedback, which would be highly valuable in helping us understand your needs.

My heartfelt thanks to each and every one of you, the readers of MMI, for your continued interest and support.

Readers can download previous issues of MMI from the IMTMA website.



The Official Magazine of



Indian Machine Tool
Manufacturers' Association

In Association with



Knowledge is Power. Sharing is more Powerful. Turn your knowledge into Action!

Advertise in the January-February IMTEX Special edition

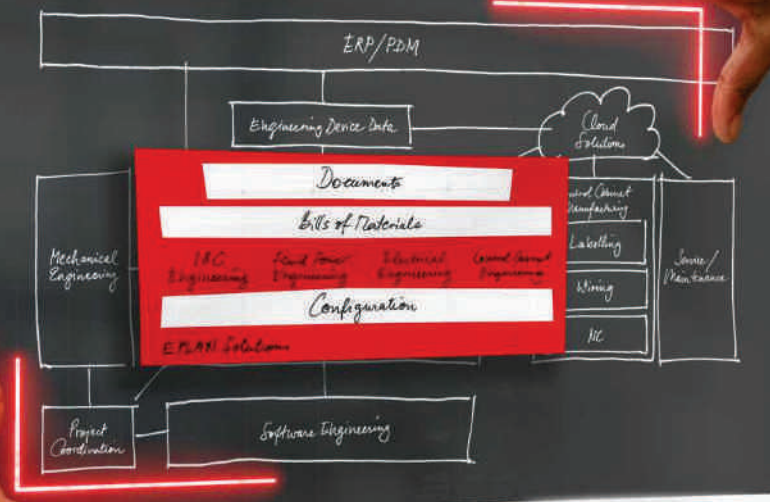


20 - 26 January 2022
Bengaluru, India

For Bookings Contact: Murali Sundaram M: +91 9740048390 murali.sundaram@mmindia.co.in

Let's focus on progress.

It's in your hands!



EPLAN

efficient engineering.

Let's focus on progress.

Forging new paths: Systematic data consistency and automated processes make a significant contribution to the ability to remain competitive over the long term for industrial companies.

EPLAN is there at your side as a strong partner in the industrial ecosystem – with solutions that move far beyond our proven engineering software.

In addition, our cloud solutions offer innovative, secure and efficient forms of collaborating with co-workers, customers and partners.

For More Information:

Contact EPLAN India for your software and service solutions in the fields of electrical, automation and mechatronic engineering.

Ms. Sindhu Krishnappa

☎ +91 96865 50509 ✉ sindhu.k@eplan.in

🌐 www.eplan.in ✉ info@eplan.in

PROCESS CONSULTING

ENGINEERING SOFTWARE

IMPLEMENTATION

GLOBAL SUPPORT





Soumi Mitra

SOUMI MITRA
Editor-in-Chief
Modern Manufacturing India
soumi.mitra@magicwandmedia.in

REFLECTIONS TO MOVE FORWARD

Again, it is that time of the year when it calls for reflection on our experiences, memories, events, achievements, and bloopers. In a retrospective mode, we make a note of what we learned from the past year as we move on to the next.

The year that is ending gave India a mixed bag of difficulties and defining moments in terms of success and failure. When confronting challenging situations, often the best path is through innovative solutions, collaborations, and partnerships. Likewise, to spur the country's growth, efficiency, and investments, the Government is actively focusing on Public Private Partnerships (PPPs).

The launch of the Indian Space Association (ISpA) aims to accelerate India's development in the Space industry and make the country a leading player in this segment. It is slated to facilitate private players to work with Indian Space Research Organization (ISRO). The focus of the association is on capacity building and the creation of space hubs and incubators in the country for private space start-ups. ISpA will work towards building global linkages for the Indian Space industry to bring in critical technology and investments into the country to create more high-skilled jobs.

In the same vein, the recent inauguration of the first operationalized private sector defence manufacturing facility in the Uttar Pradesh Defence Industrial Corridor (UPDIC) is termed as a 'shining example' of a strong PPP. The facility,

"Let us enter the New Year cheerfully. Let us resolve to look onto the bright side, to make the best of whatever may befall, to maintain faith that doing the right thing will ultimately bring victory."

- B C Forbes

run by Aerolloy Technologies Ltd, a subsidiary of PTC Industries Ltd, will manufacture parts of engines for aircraft and helicopters, structural components for aircraft, drones and UAVs, submarines, ultra-light artillery guns, and space

launch vehicles. Also, the foundation stone was laid by Shri Rajnath Singh, Hon'ble Defence Minister, for an integrated metal manufacturing facility to produce key raw materials in titanium and other exotic alloys for aerospace applications to help significantly reduce the country's dependence on imports.

In today's competitive landscape, not only big conglomerates but also medium-sized enterprises are adopting advanced technologies such as Artificial Intelligence (AI), Machine Learning (ML), Industry 4.0, Digital Manufacturing, and many more to become self-reliant and stay afloat.

Towards this endeavor, we present you this issue, highlighting how India is marching towards progress and keeping pace with technologies that would go a long way to make it 'Atamanirbhar' in true spirit.

As always, we solicit your valuable feedback to continue bringing you enriching stories.



On the go. Always arrive

With CNC machining centres and turnkey solutions from CHIRON, STAMA and SCHERER. With everything that the automotive industry needs: highest precision, maximum availability and minimum costs per piece.

CHIRON Group

chiron **STAMA** **CMS** **FACTORY⁵**

THE ECONOMIC TIMES



**CHIRON India Machine
Tools Private Limited**
Bangalore, India
Tel +91 80 4905 6490
info@chiron-india.com

www.chiron-group.com



Source: Magic Wand Media

IMTEX & IMTEX FORMING 2022: A PLUG AND PLAY OF INNOVATIONS

IMTEX, South East Asia's largest and most efficient industrial exhibition, is scheduled on January 20-26, 2022, at BIEC, Bengaluru. For the first time, the highly coveted show on machine tools is being held with IMTEX FORMING along with the concurrent shows ToolTech 2022 and Digital Manufacturing, to fulfil its promise to bring the best and latest in innovations...

A country's ability in manufacturing is largely dependent on the proficiency of its Machine Tool industry. The Manufacturing industry is strong when the Machine Tool industry is strong. IMTEX, the flagship exhibition of the Indian Machine Tool Manufacturers' Association (IMTMA), has been epitomizing this through its wide range of technology and solution displays for numerous industries. The pandemic was a major disruptor for physical shows. Many events across the world were postponed. IMTEX too was rescheduled. For the first time in more than a decade, IMTEX 2022 is being held along with IMTEX FORMING, al-

though only for this year, at the Bangalore International Exhibition Centre (BIEC) in Bengaluru, on January 20-26, 2022. Tooltech 2022 and Digital Manufacturing will also be held concurrently. While the former will showcase parts, accessories, and systems for machine tools and manufacturing technology, the latter will feature additive manufacturing and evolving Industry 4.0 concepts.

An iconic exhibition

Right from the time it was first organized in 1969 at Vikhroli Campus in Bombay, IMTEX created an instant impact. This set the tone for the exhibition to grow by several notches to emerge as the largest manufac-

turing and technology solutions show in South East Asia and become one of the very few exhibitions to complete 50 years. IMTEX is unique as it showcases only live machines of various sizes and magnitudes, which has never been seen before. The beauty of the show lies in the fact that it provides a distinctive opportunity to interact and understand new technologies and how those could be integrated into the manufacturing process. Visitors get enthralled when they see 'live' machines that enable user industries to procure the right machines. IMTEX also provides a learning platform for young engineers and entrepreneurs as they get an opportunity to learn from industry stalwarts



about how manufacturing industries function.

A coveted brand

IMTEX is a place where innovations can be witnessed. New products, new customers, and new business deals are forged. The large-scale international participation and business generated is a major differentiator. This is why IMTEX is a successful brand, says Ravi Raghavan, President, IMTMA, as he reflects on what makes the show a grand success. The show has created a homogenous ecosystem of the entire machine tool world. Today, every industry that uses some kind of machine tool knows about IMTEX, and all companies are glad to showcase it on their websites and marketing materials. This has helped IMTEX achieve its iconic status.

Moving with the times

Having battled COVID-induced challenges, India's economy is about to grow at around 10 percent, according to the latest Government estimates. The share of manufacturing will undoubtedly increase and many of the champion sectors will

be keen to procure machines for their production lines, says V Anbu, Director General & CEO, IMTMA. According to him, IMTEX will achieve the twin goals of bringing the latest technologies and solutions to the doorsteps of manufacturers, besides showcasing the prowess of the Indian Machine Tool industry to overseas markets. The exhibition will showcase technologies focusing on metal cutting and metal forming, including 3D printing, automation, robotics, evolutionary Industry 4.0 concepts, and many more. Anbu adds that IMTEX is a gateway that works purely on B2B dynamics. The exhibition showcases new developments and serves as a medium for developing new customers and entrepreneurs.

Safe exhibition

IMTMA, in organizing IMTEX & IMTEX FORMING 2022 at BIEC, is following all COVID-related protocols and safety norms laid down by the Government. Pre-registration of exhibitors, visitors, and service personnel are being done online. Visitors vaccinated with both doses

alone will be permitted entry into BIEC. All other safety norms will be followed religiously.

A series of coronavirus-induced lockdowns made in-person events impossible to hold in 2020 and much of 2021. However, things began to change with the vaccination drive picking up pace. The Ministry of Health & Family Welfare's latest move to allow fully vaccinated international travellers from any country with which India has reciprocal agreements for mutual acceptance of WHO approved COVID-19 vaccines is a welcome step and will boost the confidence of the Exhibition industry stakeholders to stage events.

A much-needed approach

Every IMTEX offers a futuristic outlook through the technology and product displays that it brings, offering visitors a wholesome, enriching, and fruitful experience. This is what has made IMTEX South East Asia's largest and most efficient industrial exhibition. Visitors are encouraged to participate in the show and unearth all the technologies and innovations by the Machine Tool industry for their manufacturing needs. 

IMTEX is a gateway that works purely on B2B dynamics. The exhibition showcases new developments and serves as a medium for developing new customers and entrepreneurs.

TOWARDS A GREEN FUTURE

Industry experts share their take on why using renewable energy is crucial for sustainable engineering and enlist the challenges in deploying it in manufacturing facilities in India and the benefits derived out of it in terms of savings and environmental protection.



Sekaran Letchumanan
Vice President, Operations
Flex India

Sustainability strategy and disciplined approach

The Manufacturing sector is a significant contributor to India's GDP and has created several opportunities for all stakeholders such as employment, etc. However, it is also a major consumer of energy and natural resources such as water, while generating waste which is detrimental to the environment. Sustainability in manufacturing should therefore be a critical area of focus as we move forward.

Manufacturing to be sustainable depends on the industry's ability to develop and use sustainable materials and products with long lifecycles considerations. It also involves the implementation of systems and processes that curtail the amount of damage that is caused to the environment, use the least amount of resources, and are safe for all the people involved.

The movement towards adopt- ing sustainable manufacturing

is already underway, and manufacturers in India have begun to be more conscientious about how they can optimize the use of resources and materials, lower emissions, and up machine efficiency to reduce wastage.

One of the key methods that sustainable manufacturing can become a reality is by adopting a sustainability strategy and a disciplined approach towards it in all that a company does. To be focused on significantly reducing greenhouse gas emissions across the entire manufacturing and supply value chain, one must take a circular economy approach, chart a path toward zero waste to recycle and repurpose materials throughout the product life cycle, and remain responsible in the usage of natural resources such as water through reduced consumption and resource-protective practices.

Also, most manufacturers can see the value in the use of emerging technologies such as Industry 4.0 and automation, which have the potential to create significant cost and energy savings by an efficient manufacturing process that incorporates remanufacturing and recycling initiatives.

The Government of India is encouraging companies to take renewable initiatives through various policies and incentives. One of the most prohibiting factors is the cost element involved, and the second is space constraint. Besides this, it requires compa-

nies to invest in research and development to deploy new and efficient methodologies for better performance.

Walking the talk

At Flex, sustainability is in our DNA. We strive to drive a tangible measurable difference in all that we do, including our journey towards a sustainable future.

We are committed to significantly lowering emissions through science-based targets in partnership with suppliers and customers, investing in our communities, advancing a safe, inclusive, and respectful work environment for all, and driving ESG-compliant practices with transparency. As part of the United Nations' Sustainable Development Goals (SDG), we have a 92 percent growth in renewable energy use year over year and have reduced the incident rate by 21 percent year over year. As part of the company's new long-term sustainability strategy, we have a global sustainability program that aims to cut down operational emissions in half by 2030, and we aim to practice this program across all our sites across the world.

As responsible manufacturers, we established a solar power generation system in our facility in Sriperumbudur near Chennai in 2018. Almost 20 percent of our energy requirements for our factories are met by this system, and we have offset close to 4,438 tonne of CO₂ emission per year.

POONAM PEDNEKAR
Chief Copy Editor
Magic Wand Media Inc
poonam.pednekar@
magicwandmedia.in





Venkat Garimella
Vice President
Strategy & Sustainability
Schneider Electric India

Going 'Electric and Digital'

The impact of global warming is quite evident today. That being the case, it is imperative to reduce Earth's carbon footprint by adopting sustainable practices in business operations in line with the UN's 2030 SDGs. Notably, global energy consumption has increased 40 times in the last 100 years and is set to double by 2050. Of the total CO₂ emissions, more than 80 percent is from the production or consumption of energy. As the current levels put us in the 3.5-degree celcius scenario, there is a need to reduce emissions drastically to remain within the 1.5-degree celcius limit.

Due to its lower carbon trail, it is necessary to deploy renewable energy sources to drive sustainable engineering operations across all industries worldwide. The utilization of renewable sources of energy can help in addressing the increasing energy demand through fossil fuels in agriculture, industries, and commercial and residential buildings. This is possible only through the adoption of renewable energy technologies and a constant transfer of knowledge and expertise. Globally, we are going to see renewable energy share increase more than six times in the coming 20 years.

When it comes to India, we have taken ambitious renewable ener-

gy targets (450 GW by 2030). Our installed power capacity would be more than double by 2030, while our electricity demand would be four times by 2050, which is a positive trend, as 'Electric and Digital' will pave way for accelerating a low/no-carbon energy transition, and thereby putting us and the world on the 1.5-degree celcius trajectory. Using electric can make our energy supply and demand more efficient and sustainable, as electricity is the only vector of energy that can be efficiently decarbonized. Subsequently, we must become more digital as IT + OT convergence opens new and bigger opportunities to harness the maximum potential of renewable energy and make installations and operations super-efficient with improved energy productivity. Significant market opportunities are being created in India in various sectors, ranging from digital and electric solutions to renewable technologies, all a result of the new focus on sustainability. We are seeing an evolving landscape of Distributed Energy Resources (DERs), Energy Storage, Peer-to-Peer (P2P) energy trading, Green Hydrogen, supported by next-generation technologies like Smart Grid, Artificial Intelligence, Machine Learning, and Blockchain. For instance, Schneider Electric, through its EcoStruxure platform and digital offerings like Microgrid Advisor, Resource Advisor, Energy Storage Management and Demand Response (DR), and Demand Side Management (DSM) solutions, enable our customers to decarbonize their supply and demand side to the maximum extent possible and embrace the new energy landscape.

Playing on both sides of the equation

We deploy renewable energy both internally and externally.

In 2017, Schneider Electric joined RE100 and committed to source 100 percent of electricity from renewables by 2030. To deliver our target, we leverage four complementary tools: green tariffs, renewable certificates, power purchase agreements, and on-site generation.

Currently, around 60 percent of the electricity used at our most energy-intensive sites in India is sourced from renewables, saving more than 12,000 tonnes of CO₂ emissions per year. We have a mix of on-site solar installations and off-site renewable power through wind and solar PPAs across our sites in India.

We differentiate our sustainability strategy by playing on both sides of the equation. We are leading by example in our ecosystem, and at the same time, with our complete range of EcoStruxure offerings, powered by digitization, we are also part of the solution for making our customers and communities sustainable and efficient.

With our state-of-the-art digital power conversion, and distribution and software solutions, we help our customers to harness the maximum potential of renewable energy. In India, 15 percent of the solar power installed capacity runs on Schneider Electric solutions. With our consulting services, our Energy & Sustainability Services (ESS) team helps various organizations in India and across the world to build, commit, and execute a carbon-neutral and net-zero emissions strategy while adhering to objectives like RE100. In India, our ESS team manages a portfolio of more than 600 MW of renewable energy power purchase agreements, including on-site solar installations, off-site solar, and wind energy procurement.



Srinath Ramakrushnan
Co-founder & COO
Zetwerk Manufacturing

Green manufacturing, key for long-term business benefits

Manufacturing, while a crucial driver for economic growth, is a highly energy-intensive sector. Traditional manufacturing warrant significant levels of energy consumption and are major contributors to GHG emissions. The clarion call by the United Nations as laid down in the ESG practices has provided an impetus to sustainable business practices globally, and organizations are increasingly looking towards creating an ecosystem that aligns with their commitment to sustainability. It is imperative for manufacturers to adopt renewable sources of energy to not only gain a competitive advantage but also to ensure faster growth than

their less eco-conscious competitors. Leveraging technology and innovation to ensure a lean and green manufacturing setup that can drive renewable and sustainable practices is key to driving long-term business benefits.


There is an immediate need for continuous line-based manufacturing organizations to shift towards renewable sources of energy to drive environmental sustainability and long-term economic viability.

Smaller manufacturers need to buck up

There have been concerted efforts made towards ensuring sustainable manufacturing practices in India, with large-scale players investing heavily in pressing renewable energy practices into action and working towards the reduction of carbon emissions. However, the overall manufacturing ecosystem in India is highly fragmented, with several smaller players across the country making up some value chains. These players are unable to operate productively, innovate quickly, and implement sustainably. There is a pronounced need for a manufacturing framework that establishes benchmarks for smaller manufacturers and suppliers to implement green manufacturing practices. The sector also needs a technological

impetus that can help provide a variable cost structure, enhance agility, and facilitate a shift of resources that allows a focus on sustainable manufacturing.

Green practices at Zetwerk

At Zetwerk, we have the goal of creating an environment conducive to sustainable manufacturing. We have invested in technologies that help us drive green practices. Zetwerk works closely with the Government on various Transmission & Distribution projects and has aided in the supply, installation, testing, and commissioning of over 500 solar water pumps in Jaipur, Bikaner, and Ajmer, among other districts. These solar panels are assembled atop steady purlin structures and are sufficient to run 5 HP and 7.5 HP pumps, resulting in output power of up to 4,800 Watt-peak (Wp). In states where rainwater is scarce, multi-crore projects contribute to the delivery of irrigation water from underground water tables up to 100 m deep. These pumps help farmers in remote villages increase their income and become more independent through sustainable sources of irrigation and de-dieselizing India's Agricultural sector under the PM KUSUM Scheme. 

Who did you notice more?



**MODERN
MANUFACTURING
INDIA**

WWW.MHIINDIA.CO.IN

The Official Magazine of



Indian Machine Tool
Manufacturers' Association

In Association with



For Advertising Contact:
Murali Sundaram: +91 9740048390
murali.sundaram@magicwandmedia.in

FOR A BETTER TOMORROW

According to a recent AVEVA survey, 85 percent of industrial businesses plan to increase their investment in digital transformation and sustainability.



AVEVA, a global leader in industrial software, driving digital transformation and sustainability, reveals that 85 percent of businesses plan to increase their investment in digital transformation over the next three years to tackle climate change, embrace automation, and unlock the performance benefits of advanced technologies. The findings were drawn from an AVEVA-commissioned survey focused on the innovation prior-

ities of senior industry leaders and managers.

The survey covered over 850 digital transformation experts across industries such as Manufacturing including large-scale Agribusiness, Food and Beverage, Infrastructure, Energy, Power, and Chemical Processing. The objective was to understand the different market opportunities, pressures, and innovations driving industries to embrace digital operations, using a combination of artificial intelligence

(AI), industrial software, and human insight to deliver unprecedented performance.

“Industrial leaders are leveraging advanced analytics and digital innovation to rethink how they design, engineer, and operate,” says Ravi Gopinath, Chief Strategy Officer & Chief Cloud Officer, AVEVA. “Bringing together rich, timely, and accurate industrial data with the scope and scale of the cloud, smart analytics, and AI are empowering industrial teams to

Source: AVEVA

The pandemic has increased focus on the need for urgent climate action and most industrial enterprises (90 percent) cite this as a core action area.

collaborate better, operate with agility, and elevate what they can achieve. This is set to transform how we all live and work.”

Pandemic catalyzing digital acceleration

Nine out of 10 industrial companies see combining advanced technologies such as the Industrial Internet of Things (IIoT), AI, and cloud with their teams’ insights as key to driving better performance in a post-pandemic world. AI and automation are now seen as necessary technologies to keep pace with competitors. In China and Germany, more than half (56 percent and 55 percent, respectively) have identified digital transformation as their top priority for the coming year, with investments focusing on workforce solutions, cyber security, connected worker strategies, and the cloud.

Tackling climate change through digital transformation

The pandemic has increased focus on the need for urgent climate action and most industri-




Source: AVEVA

“Industrial leaders are leveraging advanced analytics and digital innovation to rethink how they design, engineer, and operate.”

Ravi Gopinath
Chief Strategy Officer & Chief Cloud Officer
AVEVA

al enterprises (90 percent) cite this as a core action area. Nine in ten (89 percent) are committed to achieving net-zero

carbon emissions across their businesses and to tackling climate change within a five-year time horizon. Indeed, focus on sustainability has become a prerequisite for success in the industry, leaders affirmed. Sustainability-led demands will consequently drive innovation across the value chain, 85 percent of companies say. These companies are planning to increase visibility and performance assurance for sustainability-related metrics as a result. Germany, Austria, and Switzerland lead the global race for environment-linked business innovation, with 47 percent seeing it as a significant focus, compared to 41 percent globally.

About 80 percent of industrial companies are focused on meeting or exceeding environmental regulations, while 83 percent say they will prioritize the transition to renewable energy sources. Circularity and recycling within the value chain are important to 83 percent of customers, with Latin America leading the way (44 percent of companies). 



MODERN MANUFACTURING INDIA
WWW.MMIINDIA.CO.IN

The Official Magazine of



Indian Machine Tool Manufacturers' Association

In Association with



If you are reading this

Print is NOT DEAD!!!

MMI: CONNECT WITH YOUR AUDIENCE



For Advertising: Murali Sundaram • E: murali.sundaram@gmagicwandmedia.in • M: +91 9740048390



INTERNALIZING THE ‘WHY’ QUESTION

In the preceding issues, we have been discussing setting goals, getting there, unlearning to learn, reaching objectives, etc. Perhaps we need to formally bring in the question ‘Why?’. Among all, this seems to be the most fundamental question. It is the conceptual objective framework of engagement and should be in prime consideration for decision-making across the organization. While we use and are aware of the terms ‘goals & objectives’, how do we internalize them as individuals, as departments and, holistically, across the organization?



While both goals & objectives provide the foundations for measurement, goals are the outcome statement of what the organization is trying to accomplish, whereas objectives are precise time-based actions that are measurable and support the accomplishment of the organization’s goal.

However, there has always been some confusion about the term ‘objective’. Is it an aim or an end? In daily parlance, it is used as a guide to intermediary decisions and actions. As an example, on the sales front, it is common to say we should have our sales engineers make as many calls as possible but fundamentally the objective is the sales volume. It is not rare that in larger organizations, in situations when we lose sight of the objective, we multiply our efforts. In an organization, if we ask key people across the spectrum to write down their principal objectives, we get conflicting perspectives. The Product Development team could be making investments in areas that are not in sync with markets. The Supply Chain team could be pursuing partners that are not in sync with the scaling needs etc. Committees could very well be wasting resources thrashing out-of-sync problems.

Along with the clarity of objectives, the balance among the objectives and their connection to the goals is to be understood and internalized across the organization. An organization is not a singular or a small group of well-harmonized individuals, but it consists of many groups of functional structure like service, accounts, production, quality, etc. So, unless there is a strong ‘why?’ across the enterprise, it is difficult for an engaged interaction among people working together or for leadership to try organizing them.

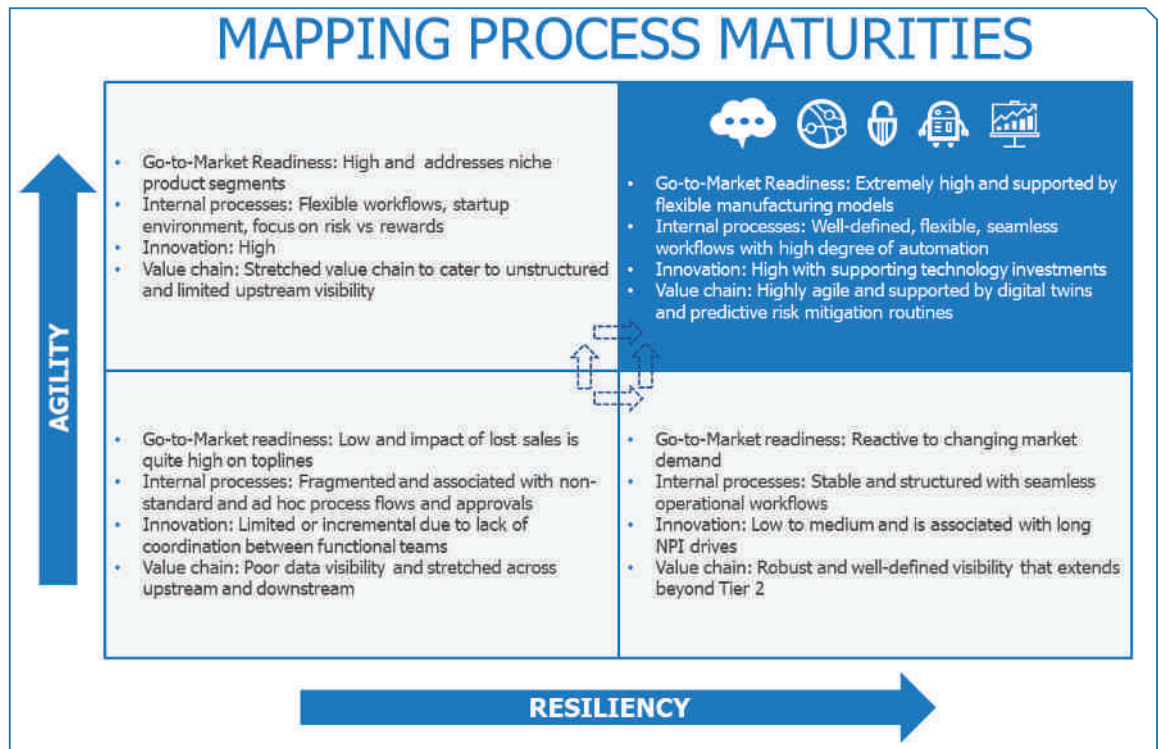
While people derive social satisfaction from working together, they build up, often unconsciously, elaborate codes of behavior, loyalties, likes, and dislikes that have little to do with the organization. Thus, every part of the organization must be an expression of the purpose and awareness of the organizational ‘why’, which is linked to the individual and collective ‘whys’ of its people. An organization with a clear purpose is easy to understand and manage across levels and produces effective sustainable results.

“
Every part of the organization must be an expression of the purpose and awareness of the organizational ‘why’, which is linked to the individual and collective ‘whys’ of its people.
TK Ramesh
Managing Director
Micromatic Machine Tools Pvt Ltd
”

The views expressed by the author are personal and he can be contacted at rameshtkr@gmail.com

CHANGING FOCUS OF DIGITALIZATION

The manufacturing sector in India has been going through some massive transformations with the key focus on data-driven process designs to help address the productivity, efficiency, and quality gaps. Here's knowing more about it.



Though the conversations around digital transformations (DX) have been going on for a while, it was in the last 18 months that the investments hit an inflection point. According to IDC's Asia/Pacific Manufacturing Insights Survey 2021, a majority of the Indian manufacturers highlighted the need for new revenue streams along with product innovations as an immediate priority to tackle the volatile market conditions. Additionally, new challenges in the form of remote access and monitoring need to be added to the operational complexity. Though a cliché, the end objective was clear - stay agile and build in/enable operational resiliency.

The common perception has been to invest in technologies that can help digitalize processes but what organizations do not account for are the 'soft costs' that are associated with fixing the existing gaps. The most important aspect of the solutioning is the creation of a baseline model that accurately identifies and estimates the perceived benefits. The lead visual is an indicative and generic plot of how organizations view their operational readiness. The intention is to reach the far-right corner, which would be possible through a set of process reengineering drives and relevant technology implementation investments that allow improved

operational visibility and enterprise performance.

Fostering digital resilience
According to a recent survey conducted by IDC Asia/Pacific Manufacturing Insights, 'Improving the resiliency of business and operating models to reduce uncertainty and operational risk' is one of the top five priorities for Indian manufacturers in the next 2 to 3 years. The finding also highlights the need for technology applications and data streams that allow organizations to have increased visibility of possible impediments or bottlenecks. Several organizations invest in 'what-if' scenario simulations coupled with contingency

SAMPATH KUMAR VENKATASWAMY
Senior Research Manager
Manufacturing Insights
IDC Asia/Pacific



plans for unscheduled outages, but the lack of real-time data feed introduces lag in decision making, which increases the reaction time and subsequently impacts the resiliency frameworks. Apart from historical trends, there is a need for executable insights that subsume unstructured information feeds to overlay contextual data for addressing real-life operational challenges.

For instance, Deepak Fertilisers and Petrochemicals Corporation Ltd (DFPCL), an India-based chemicals and fertilizer manufacturers with a turnover of over US\$1 billion, has launched a massive digitalization drive at four of its manufacturing facilities. One of the significant challenges was the availability of asset performance/utilization data, which was fragmented, disjointed, and present in multiple databases. Also, the organization still relied on traditional excel-based solutions that limited their respective predictive analytics roadmaps.

DFPCL's transformation journey was quite structured. It started with gap analysis, IT/OT integration roadmaps, followed by a detailed ecosystem review to identify a viable partner who can drive and support its long-term digitalization plans. The key technologies considered and implemented were real-time analysis, AI-based machine health monitoring, and integrated S&OP (sales and operations planning). The remote monitoring technology solutions will aid the company in keeping its manufacturing assets operational even during workforce availability challenges. After implementing Supply Chain Planning, DFPCL was able to create 'what-if' scenarios and increase its forecast accuracies consider-

ably. Improved upstream and downstream visibility aided in increased supply chain agility, resulting in accurate planning and forecasting metrics. These initiatives, in the long run, will provide sustainable benefits by enabling top-line and bottom-line contributions while supporting the DFPCL transformation journey.

And this is one of the many examples of how manufacturing organizations in India are pivoting on data-dependent process drives rather than the other way around. Though not every DX drive will yield similar kind of returns, organizations do agree that there are substantial benefits associated with data-centric modules.


Internal and external buy-in

The DX journey for each organization is unique and needs to be curated to address its respective internal challenges. Though not comprehensive, the following set of recommendations aid in reducing the gap between ideation and execution:

- **Sell the Idea Internally** - Often, the core intentions of a digitalization drive get masked by the cost reduction or organizational re-jigs resulting in resistance within. Organizations need to invest in efforts to sell the idea within to highlight the intangible benefits that feed into long-term growth aspirations rather than equating it to automation-enabled operational productivity.
- **Allocate Budgets and Periodically Review the Investments** - Budgets need to be allocated by considering the strategic vision of the organization. Look to invest in processes that can cut down the operational risks and improve product quality which would have a strong

bearing on how the overall business shapes up in the near to medium term. DX investments need to be reviewed periodically for ensured sustenance. Also, when the DX drive is devised, specific, measurable, attainable, relevant, and timely (SMART) goals need to be created and tracked.

- **Invest in Re-Skilling Initiatives** - To mitigate the effect of external factors and competition, organizations tend to invest in technology applications requiring the need for outsourced services, which would significantly increase the cost of operations. One of the biggest challenges that most organizations have been facing in the recent past is the misalignment between technology vision versus people investment.
- **Create Industry Consortia** - Despite the existing competition, organizations should look to form industry forums that could aid in establishing best operational practices across the various manufacturing processes. For instance, industry cloud solutions could drastically reduce the procurement and sourcing timelines and would aid in bringing renewed profits across the value chain. Similarly, smart manufacturing and logistics-specific forums could also lead to the development of custom solutions that address function and region-specific challenges.

And organizations that are uninitiated need to change their digitalization-related queries from 'why' to 'when' and start taking tangible steps towards an approach that suits their future vision, bearing in mind that an end-to-end enterprise-wide DX drive would yield much more benefits than the sum of its parts. 

Organizations that are uninitiated need to change their digitalization-related queries from 'why' to 'when' and start taking tangible steps towards an approach that suits their future vision, bearing in mind that an end-to-end enterprise-wide DX drive would yield much more benefits than the sum of its parts.

IMMERSIVE TECHNOLOGIES IN MANUFACTURING

Both augmented and virtual reality technologies are vastly increasing productivity and efficiencies for manufacturing companies. Their benefits are enormous - from reducing training costs and increasing knowledge retention, to getting products to market quicker, and making assembly lines and maintenance tasks vastly more efficient. There are huge opportunities available for manufacturers, and they are only going to get even more pronounced as the technologies mature.



Source: Magic Wand Media

Both virtual and augmented reality (VR and AR) technologies have a significant place in the manufacturing cycle and are bringing real benefits to businesses on a host of levels. A look at where VR and AR are currently being used by manufacturers and what the near future holds.

The first thing to note is that virtual reality is nothing new to large-scale manufacturing. Early adopter companies such as Ford, Boeing, and Lockheed Martin have been using the technology for decades. But with the relatively recent development of new, more affordable, and better performing hardware and software, the pace of adoption across the Manufacturing sector has increased rapidly.

Add to this the dawn of a suite of augmented reality devices and applications over the last few years and the scene has been set for a real revolution in immersive manufacturing.

So, let's have a look at where the technologies are currently having an impact and what the next phases of development, application, and usage look likely to be.

Many manufacturers are now seeing the benefits that both augmented and virtual reality can offer in an industrial environment. From design and visualization in premanufacture, right through to enhanced worker guidance and training during the production process. New and improved ways of using technologies across business lines are constantly being piloted and deployed across enterprises.

Source: VR Intelligence

"In design, everybody I've seen working in manufacturing is using augmented reality in some form."

Rich Rabbitz
Principal Member of
Engineering Staff
Lockheed Martin Aeronautics

Design and visualization

Both VR and AR bring incredible opportunities for product design teams to shape and test their designs before any physical materials are brought into the process more accurately. Gone is the need for clay models or other expensive prototypes; creating 3D assets in VR can deliver extremely accurate representations of real-life products before a piece of metal is cut, a screw is tightened or a bolt is fixed.

In industries such as Aerospace and Automotive, as design reviews take place, the opportunity to test ergonomics and safety features is hugely improved with the use of virtual environments. Most of the leading OEMs now rely heavily on (Cave Automatic Virtual Environment) CAVEs to enable their design teams to continually test and adapt designs with incredible accuracy. The immersive nature of CAVEs and the ability to create digital twins also allow for a much more collaborative approach to design, which delivers real benefits. Elizabeth Baron, who led Advanced Visualization and VR at Ford Motor Company, said in a VR Intelligence webinar, "Collaboration is the single most beneficial thing that the executive leaders at Ford saw in the potential and promise of AR and VR. Globally connected collaborative working is what really sold the technology and has provided the biggest ROI in our company."

AR on the assembly line

Any product manufacturing involves putting together multiple components (often hundreds or thousands) in a precise sequence as quickly as possible. This is true whether one is manufacturing televisions or car engines, and every new product requires a new set of assembly instructions.

Emerging AR applications give new life to delivering real-time instructions to workers on the front line and can provide the opportunity for guidance on all tasks and overlay images to make assembly more accurate.

Using HMDs (Head-mounted Display) or glasses, instructions and support can be always in a worker's field of view, enabling hands-free operation and minimizing the need to check in at workstations, all of which increases productivity. Rich Rabbitz from Lockheed Martin detailed, "AR adds to the knowledge of the person working - whatever point they are working at on [the] assembly line. They have this added augmented data that they can use when they are doing their task. It's really proving to be critical to get performance from these people."

New workforce recruitment, training and knowledge retention

Because of the immersive and realistic nature of VR, it is well placed to enable companies to create real-life scenarios and situations that would either be impossible - or very costly - to replicate in real life.

In an industrial setting, GE is taking advantage of this. Julie Grzeda, Director of Global Leadership Programs and University Relations at General Electric, revealed that GE has started using virtual reality to improve its employer brand and show-

With the relatively recent development of new, more affordable, and better performing hardware and software, the pace of adoption of VR across the Manufacturing sector has increased rapidly.



Emerging AR applications give new life to delivering real-time instructions to workers on the front line and can provide the opportunity for guidance on all tasks and overlay images to make assembly more accurate.

case its tech-forward positioning with millennials and other audiences. Potential candidates at college and recruiting events can use a VR headset to experience one of the company's new trains rushing across the plains or the technology behind its undersea oil and gas operations. Once in place, AR and VR can speed the onboarding of new workers and improve worker productivity by offering a more immersive, on-the-job train-

ing. Glasses that project video, graphics and text can visually guide a worker through assembly or maintenance tasks. Together with providing companies with an opportunity to showcase work to potential employees and on-board workers better, AR and VR also give them the opportunity to retain the knowledge of an aging workforce. No longer does an expert technician need to be in place to train and oversee

every technician or machinist; companies can now use the AR technology to supplement their employees' existing knowledge - potentially even with the engineering expertise delivered via telepresence. Put simply, with the right application of augmented reality on the production floor, training becomes truly 'on the job'. One can feed training information right on top of the actual parts and assemblies. They can



Source: Magic Wand Media

start mixing the actual delivery of tasks directly with the training, which ultimately makes the equipment easier to learn and use.

Ongoing maintenance, error detection and quality assurance

Training and operational usage of AR and VR is the opportunity to use it for ongoing maintenance and error detection. Mark Sage from AREA said,

“Newport News Shipbuilding reports a 96 percent saving in time on its inspections since it has started incorporating AR into the process.”


Other examples include Thyssenkrupp, the elevator manufacturer who provides technicians with HoloLens technology as a tool in service operations. Using HoloLens, service technicians can visualize and identify problems with elevators ahead of a job, and

have remote, hands-free access to technical and expert information when on site. This has reduced the average length of Thyssenkrupp's service calls by up to four times.

Also out in the field, GE Renewable Energy has a video on YouTube showing a worker completing wiring insertions for a wind turbine. The video compares the worker using paper instructions versus an AR headset. The technician sees an immediate 34.5 percent productivity improvement.

Back in manufacturing plants, the equipment, machinery, and components, all being used to manufacture products, can also get a helping hand from augmented reality. Important maintenance procedures can be made much easier and more accurate, which means the status of equipment can also be assessed in far shorter timeframes, saving a significant cost.

The monitoring of incoming component parts and outgoing products has traditionally been done by means of drawings or simple checklists, which require time and effort to compile. But with the new AR applications, preset CAD models can be accurately overlaid onto a real-time video image. When placed over a physical component, this enables a direct comparison of the component with the plan or CAD data and any discrepancies can be recognized instantly.

In addition to the pure geometry of the part or assembly, the inspector can also have all other necessary information on the device, such as ISO standards, core data, metadata etc., so no other medium is needed for the inspection process. This all makes it possible to carry out incoming goods inspections more quickly and easily than ever before. 

Once in place, AR and VR can speed the onboarding of new workers and improve worker productivity by offering a more immersive, on-the-job training. Glasses that project video, graphics and text can visually guide a worker through assembly or maintenance tasks.

GOING BEYOND SOLUTIONS

For more than three decades, WIDMA has been leading the special purpose machine tool industry in India, elevating it to the best global standards. Here's knowing its journey, and the highly inspiring philosophy behind it that aims to empower customers in order to change the game...

WIDMA was established as a captive machine tool building division of Kennametal in Bengaluru, India. Since 1984, the brand has established itself as a leader in building Special Purpose Machines (SPMs) in India, catering to several leading automobile manufacturers. The company gradually diversified from SPMs to offer a host of standard machines for the entire spectrum of machining requirements across industries, right from micro tools to large structural parts for the Locomotive and General Engineering industries.

"Several customers across India and other parts of the globe are benefiting from the expertise of WIDMA in engineering the most complex components with precision, including the manufacturing facilities of our parent company, Kennametal Inc., both in India and abroad, that make advanced metal-cutting solutions," shares Vijaykrishnan Venkatesan, Managing Director, Kennametal India Pvt Ltd.

Broad range of offerings
Informing on WIDMA's indigenous and innovative products and the industries they cater

to in India, Venkatesan states, "Our portfolio is broadly categorized into component manufacturing and tool manufacturing solutions."

The former comprises customized boring and milling machines, multi-spindle drilling, tapping and boring machines, fine boring machines, gundrilling and BTA boring machines, and a variety of customized machining centers for manufacturers of two-wheelers, passenger/commercial vehicles, railways, farm equipment, earthmovers, general engineering, and defense. "We offer a host of other semi-standard machines, including vertical

POONAM PEDNEKAR
Chief Copy Editor
Magic Wand Media Inc
poonam.pednekar@
magicwandmedia.in



Source: Kennametal India

turn-mill centers for up to 4-meter components, multi-axis gundrilling machines, BTA boring machines, and flexible machining centers to customers seeking higher flexibility over SPMs," he adds.

The tool manufacturing solutions include two major 5-axis CNC platforms - the Eco grind & Ezeegrind Series - which are suitable for manufacturing simple and complex round tools for extremely accurate machining as needed by various industries. These are used for Kennametal tools manufacturing as well.

WIDMA also offers engineering support for component manufacturing and process design through fixtures and tooling solutions on standard machines of other reputed makes to end-customers.

Focus on the customer

Today, the numerous machines and fixtures that are running successfully in India and abroad provide rich evidence of the success of WIDMA's philo-



Source: Kennametal India

"Over the years, WIDMA has established itself as a leading player in a niche that covers the entire spectrum of critical machining needs. This calls for technological prowess and the ability to translate knowledge of design into high-performing machines."

Vijaykrishnan Venkatesan
Managing Director
Kennametal India Pvt Ltd

ophy of complete focus on the customer. Venkatesan elaborates, "Over the years, WIDMA has established itself as a leading player in a niche that covers

the entire spectrum of critical machining needs. This calls for technological prowess and the ability to translate knowledge of design into high-performing machines. We believe that our value proposition entails harnessing a blend of machining and engineering to develop solutions for the future that manifests in our brand promise of 'machineering tomorrow'."

The company's philosophy of customer-centricity, he shares, rests on three strong pillars, viz, 'We team' - by doing it all - from getting grease on our hands to delivering customer delight; 'We build' - by not resting on our legacy of expertise, but breaking new ground, so we can build what's next; and lastly, 'We pioneer' - by going beyond solutions to empower our customers to change the game.

Ahead of the curve

WIDMA has established a well-defined quality assurance system that covers every step of the process, right from the

Realizing the need of the hour to drive productivity through connected data, WIDMA has integrated IIoT into its machines that provide both intuitive and data-driven analysis of machine performance.



Source: Kennametal India

WIDMA's new product development team is relentlessly working on expanding its portfolio, leveraging its strength in special purpose machines to augment its offerings in the custom- and semi-standard space.

supply chain up to final trials and installation. Sharing what it is that helps the company stay ahead of its contemporaries, Venkatesan says, "Our key USP is our state-of-the-art manufacturing facility, strategically located in Bengaluru, the technology hub of India. This helps us leverage the strength of the local supply chain to imbibe best-in-class quality in all of our processes." The manufacturing facility, he informs, is equipped with advanced equipment manufacturing tools and industry-leading software that simulate the end-to-end process and ensure precision and accuracy. "Realizing the need of the hour to drive productivity through connected data, we have integrated IIoT into our machines that provide both intuitive and data-driven analysis of machine performance. Apart from these, our competitive edge lies in the robust in-house capability through the value chain, where teams across R&D, procurement, manufacturing, quality, and commissioning collaborate seamlessly with a structured review mechanism to ensure on-time

performance and 'right-the-first-time' deliveries. Last but not least, we take pride in the competence of our passionate team who always puts the customer first," he adds.

Pandemic woes

The challenges faced by WIDMA were no different from the industry in general, where the first wave brought operations to an abrupt halt overnight, and the more catastrophic second wave led to tepid demand just when the economy was beginning to witness signs of recovery. "Amid these challenges, we prioritized the safety of our employees and other stakeholders, which is a core value for Kennametal. We implemented robust COVID-19 protocols in conjunction with leading health authorities, so as to ensure the health and safety of our employees, while continuing to serve our customers who are relying on us," shares Venkatesan.

The company's engineers leveraged virtual reality technology for equipment installations when they could not be onsite due to travel restrictions. "There cannot be a better testimony to

the focus, dedication, and capabilities of our engineers to ensure customer satisfaction than this. We also proactively supported the community during this unprecedented crisis by providing masks, sanitizers, and other PPEs to frontline workers, home quarantine kits to low-income households, and medical equipment such as ICU beds and oxygen concentrators to Government and private hospitals," he adds.

Plans for the future

Venkatesan reveals that WIDMA will remain committed to its brand promise of 'machineering tomorrow' by working closely with its customers to deliver solutions that equip them to stay competitive in the evolving environment. "Our new product development team is relentlessly working on expanding our portfolio, leveraging our strength in special purpose machines to augment our offerings in the custom- and semi-standard space. Our innovation helps solve customers' biggest challenges, so they can deliver the products and solutions we rely on every day," he adds, summing up. 



Source: Kennametal India

Analytics Software

Frequency Analysis Without Programming Requirements

TwinCAT Analytics expanded with easy-to-configure condition monitoring functions

The TwinCAT Analytics software from Beckhoff offers a complete workflow from acquisition of data through to its storage and analysis to dashboards for continuous machine monitoring. Traditional condition monitoring algorithms are now also available in TwinCAT Analytics using simple configuration with no programming requirements. This addition optimizes both the standard workflow and spontaneous measurements, such as during machine commissioning or service.

Beckhoff presented the TwinCAT Condition Monitoring library as early as 2010. This library includes numerous algorithms that support Moment Coefficients, Discrete Classification and Vibration Assessment according to the ISO standard, in addition to functions such as Magnitude Spectrum, Envelope Spectrum, Zoom FFT, Power Cepstrum and multiple RMS calculations. All functions are available as standard PLC function blocks, which means that condition monitoring functions, for example, for permanent monitoring of bearings or gearboxes, integrate directly and easily into the machine controller.

precisely where TwinCAT Analytics can help – by reducing a programming task to a simple configuration task. All condition monitoring algorithms are available in the analytics toolbox and can be easily dragged to the Analytics editor and configured. After using the 'Start Record' function, the results will then be provided at the output of the algorithms, and they can be displayed clearly and graphically in the charting tool based on the interaction between TwinCAT Analytics and TwinCAT Scope View.

Machine operators and service engineers consequently have an easy-to-use solution at their disposal with the TwinCAT Analytics Service Tool (TE3520) and can interpret the clearly presented results. Continuous monitoring with the aid of the condition monitoring algorithms can be configured just as conveniently in the TwinCAT Analytics Workbench (TE3500) and converted automatically into readable PLC code. This code can then be downloaded onto the local machine controller or remote device to perform the necessary calculations in parallel with the machine application. The TwinCAT HMI visualization solution rounds out the Analytics workflow by automatically creating analytics dashboards.

Source: Beckhoff Automation Pvt Ltd



In the past, commissioning staff and service engineers had to invest significant time and effort to calculate a frequency spectrum that would allow selective inspection of machine components, for example. This is

Beckhoff Automation Pvt Ltd
 E: info@beckhoff.co.in
 www.beckhoff.com/analytics



Shaping
the future.
Together.

Two world leaders in **industrial process fluids**, Quaker Chemical and Houghton International, have come together as one company to keep our metalworking customers ahead in a changing world.

As Quaker Houghton, we are proud to partner with metalworking industries around the world that are driving a sustainable, more prosperous future. We work with your teams to deliver expertise, service, and advanced technology related to industrial process fluids.

quakerhoughton.com

©2021 Quaker Houghton. All rights reserved.





Source: ESPRIT

Paragon Medical – Southington’s use of ESPRIT to program its Citizen machines has yielded major time savings and enabled the company to produce the highly complex parts required for the medical, aerospace, pharmaceutical, and other industries.

EMBRACING A TRANSFORMATIVE APPROACH

Paragon Medical – Southington leveraged ESPRIT CAM, which helped it reduce the time it took to program a 7-axis lathe from three days to one and offered many other benefits.

Paragon Medical – Southington, formerly known as Economy Spring & Stamping, is a manufacturer of precision and custom wire forms, metal stampings, coil springs, tubular components, and product assemblies. It serves the Medical, Pharmaceutical, Aerospace, and Industrial markets. To stay competitive, the company has invested in the latest manufacturing equipment, including two Citizen 7-axis Swiss-type turning centers boasting 400-watt L2000 laser cutting systems.

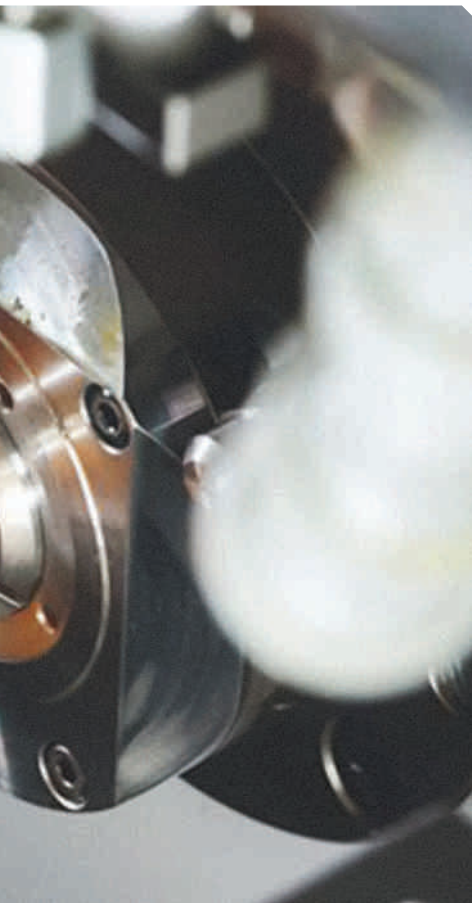
Complex parts, complex manufacturing

The company manufactures a wealth of complex parts, such as two concentric tubes used in the Medical industry for administering fluid to incisions. The outer tube requires a 0.172-inch outer diameter and a 0.158-inch inner diameter, while the inner tube requires a 0.152-inch outer diameter and a 0.128-inch inner diameter. The front end of the inner tube is marked by several intricate shapes, including two boot-shaped features precise-

ly 180 degrees apart from each other. To make matters more complex, the inner tubes also require drilling of 22 0.007-inch diameter injection holes in a helical pattern. There’s also a 12-inch slot in the part that is longer than the total travel of the lathe.

Programmers at Paragon Medical – Southington previously programmed this and other similar parts using the machine control. They would enter many manual commands, including laser commands and

Source: ESPRIT



Challenges:

Programmers at Paragon Medical – Southington previously programmed complex parts using machine control. They would enter manual commands but would not be sure of accuracy or collisions until they ran the part for the first time. Balancing operations between the machine's two spindles was also difficult and time-consuming.

Solution:

The company switched to ESPRIT CAM software because it supported the latest machine tool features and its powerful simulation capabilities that enable it to optimize the program without taking up valuable machine time.

commands to coordinate the operations of the two spindles. After completing the program, programmers would not be sure of accuracy or collisions until they ran the part for the first time.

Balancing operations between the machine's two spindles was also difficult. For example, pro-

grammers had no way to determine whether it was efficient to perform turning and drilling on the main spindle and perform a secondary operation on the sub-spindle at the same time. If time is money, then these decisions were doubly important. One spindle often sat idle until the other finished its operation.

Finding solution

"We decided to switch to ESPRIT CAM software because it supported the latest machine tool features and its powerful simulation capabilities that enable us to optimize the program without taking up valuable machine time," says Dale Akerley, Advanced Manufacturing Department Leader, Paragon Medical - Southington.

Akerley began programming the tubes with ESPRIT by importing the SolidWorks CAD file that was provided by the customer. Importing the part geometry saves time and minimizes errors by ensuring that the program matches the customer's original vision. ESPRIT then analyzes the imported geometry and automatically recognizes all the features, such as the holes and boots mentioned earlier.

He selected each feature of the part and picked a tool to machine from a graphical representation of the Citizen Swiss lathe. The knowledge base, included with the software, automatically generates typical machining parameters such as cutting speed, feed rate, and depth of cut. Both the detailed features on the front end of the part and the holes were produced by the laser—which can produce nearly any geometric shape to an accuracy of 0.00001 inch. When the company first began using the laser, it wasn't supported by any CAM software, so it required time-consuming manual programming.

Benefits abound

ESPRIT sent a technician to Paragon Medical - Southington. The technician spent days working with Akerley to develop a post-processor that automatically generates the instructions needed to set up the laser and perform the machining

Balancing operations between the machine's two spindles was also difficult. Programmers had no way to determine whether it was efficient to perform turning and drilling on the main spindle and perform a secondary operation on the sub-spindle at the same time.



Source: ESPRIT

Paragon Medical — Southington's first laser Swiss machine, a Citizen L220 Type 8, was installed in 2016. Development of laser cutting processes continues to open new avenues of business for the shop.

Switching to ESPRIT reduced the time required to program complex parts from about three days to one day, and the company achieved proportional time savings on a wide range of other parts.

operations. With the post-processor in place, Paragon Medical – Southington programmers treat the laser as if it were an ordinary cutting tool. ESPRIT then automatically generates the G-code instructions for the laser and metal cutting operations needed to produce the part.

Akerley then tentatively assigned the operations to spindles and simulated the complete machining operation, so he could visualize exactly how the operations were flowing and also determine if any time was being wasted.

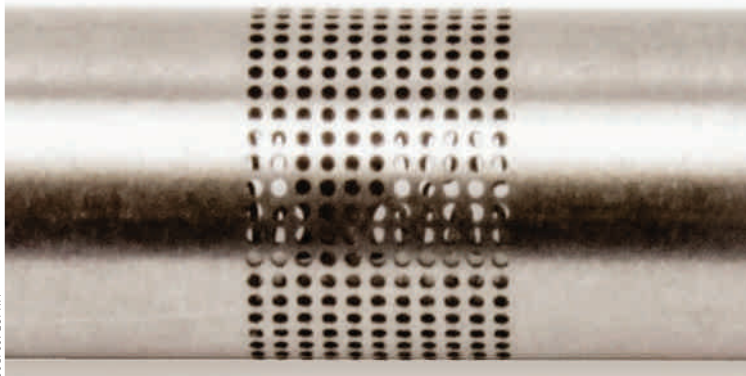
“We can reorder operations, move operations from one spindle to another and sync operations so they start at the same time with a few clicks of

Benefits:

- Switching to ESPRIT has reduced the time required to program complex parts from about three days to one day, helping Paragon Medical – Southington achieve proportional time savings on a wide range of other parts.
- The time required to test the program of the machine is also greatly reduced because simulation typically helps get the program right the first time.
- The company has achieved significant cycle time reductions by identifying idle time during the simulation and modifying the program to make it more efficient.

a mouse,” Akerley says. He used a regrip operation to move the stock from the main spindle to the sub-spindle so the 12-inch slot could be fully machined. “Switching to ESPRIT reduced the time required to program

these parts from about three days to one day, and we have achieved proportional time savings on a wide range of other parts,” he adds. “This represents a major time saving and the time required to test the program of the machine is also greatly reduced because simulation helps us nearly always get the program right the first time. We have also achieved significant cycle time reductions by identifying idle time during the simulation and modifying the program to make it more efficient. All in all, switching to ESPRIT has helped us significantly increase the efficiency of our machining options.”



Source: ESPRIT

Small holes cut on part with the L2000 laser cutting system.



WWW.MMINDIA.CO.IN

SUBSCRIBE THE PRINT MAGAZINE AND GET THE DIGITAL FREE!



www.mmindia.co.in/magazine_issues

THE OFFICIAL MAGAZINE OF

PARTNERED BY



Yes, I wish to subscribe to **MODERN MANUFACTURING INDIA**

1 Year	₹ 750
2 Years	₹ 1200

PERSONAL DETAILS

Company _____
 Name _____
 Department _____ Designation _____
 Company Address _____

 City & Pin Code _____ Country _____
 E-mail _____ Contact No. _____
 Industry _____

SUBSCRIPTION PAYMENT DETAILS

Please find enclosed cheque / DD No.: _____
 Drawn on (Name of bank & branch): _____
 Dated _____
 For Rs. _____ Rupees in words _____

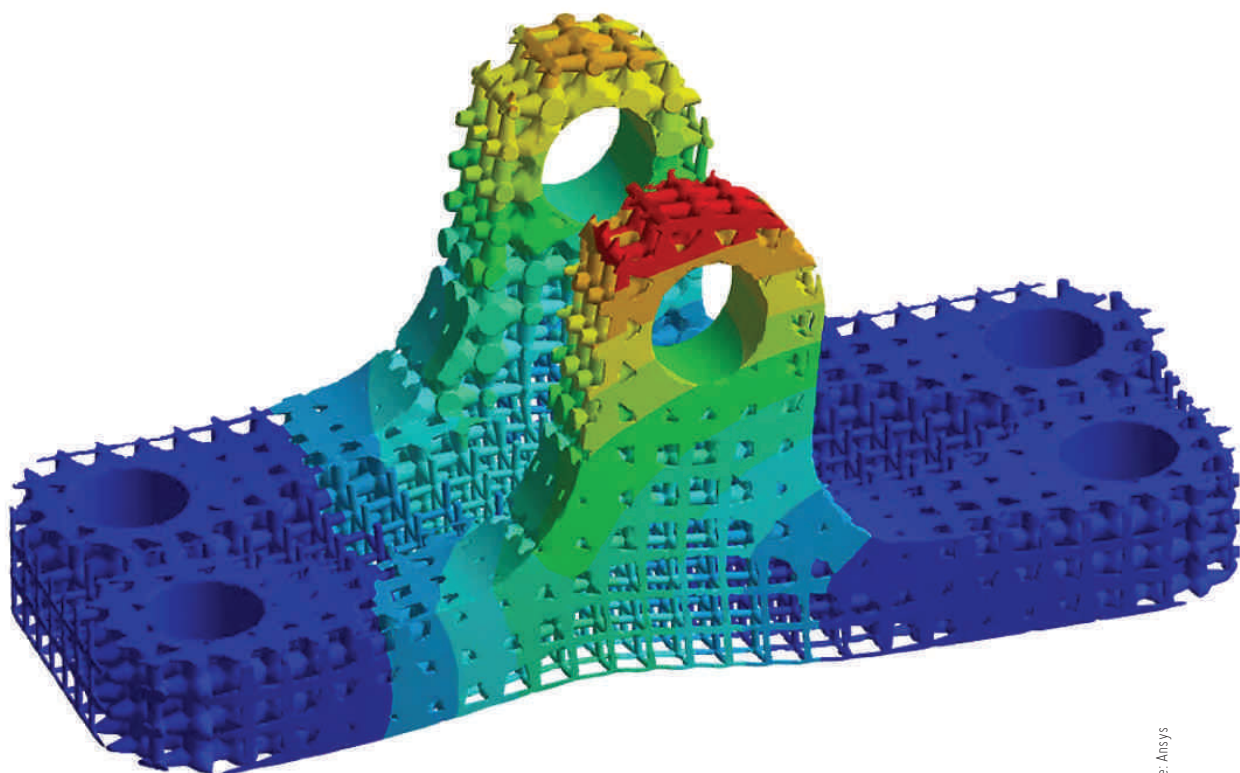
Favouring **INDIAN MACHINE TOOL MANUFACTURERS' ASSOCIATION**

IMTMA, Bangalore International Exhibition Centre (BIEC), 10th Mile, Tumkur Road, Madavara post, Bangalore - 562123
 Tel: 080 - 66246617 imtma@imtma.in

Sources & Terms of Supply: Orders can be placed directly with the publisher. No claims for the supply of back copies or reimbursement of subscription fees can be entertained for non-delivery of the magazine for reasons beyond the publisher's control.

CREATING LAYER BY LAYER

Additive manufacturing, a technology that started with the goal of rapid prototyping, has now expanded its goal towards making lighter, complex shapes with acceptable strength. The reduction in the material used, lesser number of parts for maintenance, lesser transportation, and reduced energy consumption make this manufacturing technique a truly sustainable solution.



Structural simulation of a bracket's lattice structure

Source: Ansys

A recent conversation with one of my non-Indian friends on the topic of how we are taking on sustainable development ended with my reply: *“When any automobile company wants to sell its product in India, the first question they come up with is ‘Kitna deti hai/What is the mileage?’”* This translates to how efficient/less polluting a vehicle is. Jokes apart, the recent pandemic has made people and organizations rethink sustainable development. Millions of hectares of forest are lost year-

ly, and billions of kilograms of toxic material waste are generated every year and pollute both water and air. Many big cities in the world today are in the red zone. Hence, there is an urgent need to minimize our carbon footprint at every stage. When introducing a new production technology, because many parts must be produced and verified until target quality can be achieved, the traditional trial-and-error validation process is extremely time-consuming and expensive.

Advantages of additive manufacturing

Creating a simulation-based workflow can predict part quality and has the potential to significantly reduce the process time required by the traditional method. Simulation software lets one create additive manufacturing (AM) designs and simulate the metal additive manufacturing process to reduce product development time. It is an end-to-end manufacturing solution that can save both time and money.

LALAN SINGH
Technical Manager
A&D
South and ASEAN
Ansys
lalan.singh@
ansys.com



As the name suggests, this technique is all about adding materials layer by layer to create parts, whereas traditional manufacturing worked on the subtraction of material from an initial block. Hence, this drastically reduces the waste or scrap generation that results in saving energy through the recycling process.

Let me elaborate on the new evolving technology in the manufacturing process and detail the benefits and challenges that lie ahead of this advancement in manufacturing technology.

Additive manufacturing makes the product lighter

In a conventional product design process, engineers use techniques like generative design, topology optimization, and so on to improve their product strength while keeping the weight in check. In general design processes, design starts with a somewhat known configuration initially and then parametric studies on dimensions are performed along with a few constraints. Many of these constraints came from the manufacturability perspective as well. This approach, to help achieve improvement on the designed parts, was not optimal. Hence, products created by the conventional process have much scope for improvement, like making them lighter and, thereby, reducing the overall carbon footprint. Parts designed and printed with a complex lattice structure are becoming very common with additive technology. This results in lighter products without compromising their functionality requirements for strength.

Additive manufacturing reduces wastage

The gap created by conventional manufacturing constraints is getting filled with the new additive manufacturing technique, also known as 3D print-

ing. It is capturing the imagination of the international business world and innovators because of the enormous possibility of shape and complexity. As the name suggests, this technique is all about adding materials layer by layer to create parts, whereas traditional manufacturing worked on the subtraction of material from an initial block. Hence, this drastically reduces waste or scrap generation that results in saving energy through a recycling process. One can argue that the support structure required for 3D printing is a waste. However, it is comparatively very less. *Additive manufacturing enables companies to realize digitalization* Companies have great potential to realize their digitalization journey with additive manufacturing. Even if you keep printing parts aside, the journey towards digitalization requires a digital form of information to store, share, inspect, and reuse. AM provides a platform for various stakeholders, starting with the designer, manufacturer, supplier, and operator. They all share the same common source of truth. This data can be easily stored on the cloud and made available among all stakeholders. This leads to the realization of a critical stage called the 'Digital Thread' part of digital manufacturing. Digital manufacturing emphasizes the use of technology in a 'Digital Thread' environment to efficiently manage change, inspect, and save energy and cost.

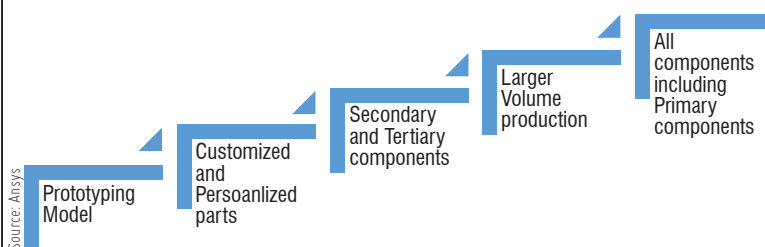
The transformation of physical files to a digital ones makes this technique an environmentally friendly one as well.

Additive manufacturing simplifies the manufacturing assembly lines

AM supports product innovation and market responsiveness because designs can go from a digital file to a finished product in a very short span of time. It is not only the complexity, but also the combining of many different parts of a large assembly into a single bulk part that results in a reduced number of parts required for that asset. These benefits are taken to a new height by various industries. For example, aerospace companies are trying to build a rocket engine with 100 parts instead of 10,000 parts. This was just a dream a few decades ago, but today it's realizable using the additive technique. This way, design has the potential to optimize further because there are no more end-part constraints. Hence, it simplifies the manufacturing process and assembly lines that translates to fewer man-hours spent on the assembly line and better handling of logistics. This makes the entire assembly lighter and the final product is more efficient.

Additive manufacturing consumes less energy

The initial part of material generation like mining and processing could have the same energy requirement for any type of manufacturing process. But it has been observed that traditional CNC machining consumes more energy than additive for similar part creation. This difference becomes more significant, especially for energy-intensive material products like titanium. AM also allows organizations to produce parts very close to their users. Reduced transportation costs for moving various raw materials and parts from one



location to another will reduce costs by a greater proportion, in addition to lowering environmental entropy.

Challenges in additive manufacturing

In recent years, additive technology has drawn the attention of many researchers and innovators, and has built a big expectation of transforming the Manufacturing industry to be more economical and eco-friendly. However, the journey of adopting this technology by the industry is not a smooth one as any other new innovative technology.


The range of materials that qualifies and satisfies all the regulatory requirements for industrial parts is still evolving. Most printers are limited by their printing volume capacity. Industries have many large-sized components and, at present, very few printers are available to meet such requirements. There is a large scope of improvement in the energy required for printing between different additive techniques.

Since AM is more digital, it is also prone to major cyber-attacks. Hackers may be able to hack the digital file over the Internet, look at the information and play unethical games. With new business models evolving, many companies may just share the printed CAD models where users can use this service to print the product on their own. Although 3D printing may not be used for the entire product design, industries are taking advantage of both methods and technologies.

The future

With the progress in Artificial Intelligence (AI) and Machine Learning (ML), this new technology is going to bring immense benefits to Manufacturing industries. With the use of various ML techniques, engineers can now characterize the material in different classes and groups. Process parameters can be further optimized by the processing of large sets of data. Product defects can be analyzed better and faster. Engineers can do a trade study between process parameters

and product functional outputs. They can even generate a surrogated model to optimize product quality and process with minimum sets of data.

There are numerous analytical as well as physics-based tools and techniques that are available to address many of the challenges faced by adopters of additive technologies. Engineers and scientists are leveraging this tool to predict distortion compensation, support generation, thermal strain, layer by layer visualization, potential blade crash, and so on to print the part effectively and efficiently as per requirements. Physics-based tools are also used by engineers to validate those parts for different environmental conditions and reduce the expensive process of trial and error. A technology that started with the goal of rapid prototyping has expanded its goal towards making lighter, complex shapes with acceptable strength. The road ahead for the adoption of this technology could be bumpy, but it's encouraging to be a witness to various resource reductions. 

Since additive manufacturing is more digital, it is also prone to major cyber-attacks. Hackers may be able to hack the digital file over the Internet, look at the information and play unethical games.



MODERN
MANUFACTURING
INDIA

WWW.MMINDIA.CO.IN

The Official Magazine of



Indian Machine Tool
Manufacturers' Association

In Association with



Get Curated Content on Advanced Manufacturing in your Inbox

SUBSCRIBE!

MURALI SUNDARAM
E: murali.sundaram@magicwandmedia.in
M: +91 9740048390





Source: Magic Wand Media

ON THE DIGITAL PATH

Gemini Power Hydraulics builds repeatable processes and strengthens customer connect with Salesforce.

POONAM PEDNEKAR
Chief Copy Editor
Magic Wand Media Inc
poonam.pednekar@
magicwandmedia.in



For over 30 years, Gemini Power Hydraulics Pvt Ltd has been introducing the finest international brands in industrial and construction equipment in India. The company believes in delighting customers not just with products and services, but also holistic solutions.

The company strives to offer the customer a maximum value at every step of the experience from recognizing the problem area to proposing a solution that fully addresses the customer need and ensuring that the solution continues to deliver over the years.

For a smooth sales process
As an engineer passionate about customer service, Rajiv Sethi, Founder, Gemini Power Hydraulics, understood early on the role of repeatable processes in building this problem-solving approach. In 1990, he set up a desktop computer and wrote



a code to standardize the sales quotation process so his Sales team could serve customers independently and consistently.

As Gemini has grown, so has the use of technology. Since it operates in a capital-intensive industry, Rajiv sought to reinvent Gemini's processes for greater efficiency. He started with sales processes.

The Sales teams used to record customer interactions on various home-grown and branded CRMs (Customer Relationship Management). But these solutions fell short in what they could offer. "The CRMs we built



Source: Gemini Power Hydraulics

"Salesforce has opened a completely new perspective for us in terms of what a CRM can do."

Rajiv Sethi
Founder
Gemini Power Hydraulics

internally were limited by what we knew and how much we could program into them," shares Sethi.

In 2019, Gemini decided to deploy Salesforce to ramp up its digital journey.

Building a process-driven cycle

Gemini's existing CRM solution was static and only partly on the Cloud. This meant two things – the Sales teams did not have access to the latest product information such as price, version, and availability when at the customer site. There was also no way for them to record details of customer interactions on the go. So, a complete information needed to make decisions during customer interactions was not always at hand.

With Salesforce CRM software, salespersons now have information updated in real-time at their fingertips. "Salesforce has opened a completely new perspective for us in terms of what a CRM can do," notes Rajiv.

Besides product details, every customer interaction is now available on the Sales Cloud. This includes details such as how likely a lead is to convert, or how urgent a customer need is. A mapping of customer profiles and the solutions they may need has also been set up.

All this data provides the Sales teams with the intelligence to get the best out of every customer interaction. Automated task creation also ensures timely follow-ups, and has boosted productivity by around 60 percent, while shortening the sales cycle by 10 percent.

The focus on processes has also meant the company's salespeople are able to consistently offer customers comprehensive solutions rather than merely selling products. No longer person-dependent, the Sales teams work off the data and streamlined processes for decision-making. "We have said goodbye to subjectivity in our sales cycle. Salesforce has made sales processes and decision-making entirely data-based," he adds.

Improving service processes with Salesforce

Gemini Power Hydraulics has also automated service processes on the Service Cloud, and is now focusing on optimizing them.

Service agents record customer service calls on the Service Cloud. Each call request is assigned as a case to the asset which needs repair, and a ticket is raised. The final goal is to see, at the click of a button, the complete schedule of repairs that have been performed on one or many assets owned by a customer.

The streamlining of the service process has boosted the Service team productivity by 10 percent. Going forward, a single customer view will help Gemini promptly offer options to customers whose assets fall outside

Automated task creation now ensures timely follow-ups by the Sales teams, and has boosted productivity by around 60 percent, while shortening the sales cycle by 10 percent.

the warranty period. The system will also collect customer feedback to help improve the next generation of products.

Driving adoption of Salesforce across the company

The Management team at Gemini is highly focused on boosting the adoption of Salesforce across the company as a path to digitization. "We have always been a technology-first company. The customers are increasingly expecting to interact with us digitally. So, making Salesforce the single source of truth for all our employees is a step in that direction," states Aahan Sethi, Director, Gemini Power Hydraulics.

To achieve this, Rajiv and Aahan have hired an Adoption Executive who is charged with evangelizing Salesforce across the company. Teams are strongly discouraged from having conversations on any other digital platform; all customer and project conversations must be captured on Salesforce. Internal communications like memes with pop culture figures are used to drive home the message that every business activity needs to be captured on Salesforce.

The Management team also requires all offline conversations to be supported by dashboards and reports on Salesforce. Whenever a report is discovered to be on Excel, internal developers are immediately asked to migrate it to Salesforce.

Gemini will soon move to cloud telephony for sales calls, so these are recorded on Salesforce as well. All employees are also being trained on Trailhead to boost the adoption.

As adoption increases, more employees are updating important data and fields. With this, Gemini can generate richer reports and dashboards to make better decisions.

The company has also automated service processes on the Service Cloud and is now focusing on optimizing them. Its streamlining has boosted the Service team productivity by 10 percent.

Challenges:

- Gemini Power Hydraulics was looking towards reinventing its processes for greater efficiency. In sales processes, the Sales teams would earlier record customer interactions on various home-grown and branded CRMs. They were static and only partly on the Cloud.

Solution:

- The company has switched to Salesforce CRM that ensures that product details and every customer interaction be available on the Sales Cloud. Details such as how likely a lead is to convert or how urgent a customer need also get stored. A mapping of customer profiles and the solutions they may need has also been set up.

Benefits gained:

- Automated task creation now ensures timely follow-ups by the Sales teams, and has boosted productivity by around 60 percent, while shortening the sales cycle by 10 percent.
- No longer person-dependent, the Sales teams work off the data and streamlined processes for decision-making.
- Gemini Power Hydraulics has also automated service processes on the Service Cloud, and is now focusing on optimizing them. Its streamlining has boosted the Service team productivity by 10 percent.

Building a customer 360 on Salesforce


Thus far, the company is happy with Finesse as an implementation partner. "They have great process understanding and know how it can be translated into a technology solution," says Rajiv.

Gemini is now pursuing company-wide digitization to achieve even stronger business process orientation. "All our processes are being baked into Salesforce. As Aahan rightly said, it is our single source of truth," he adds.

The company is implementing Pardot for personalized and targeted communication with current, dormant, and prospective customers. Pardot will also be used for product launch campaigns and drip marketing. The team plans to use Tableau for deeper data-driven insights and

Einstein for predictive sales and preventive maintenance. Eventually, the entire customer journey will be on Salesforce.

Inspired by gamification, Aahan is also looking at building a customer community on Salesforce. Here customers will be able to find everything they need about Gemini's products and solutions at the click of a button. Two-way discussions on the community around new and innovative products and applications will keep customers involved and help to cross-sell and up-sell.

"We want to start moving beyond brick and mortar selling to complete digitization and automation. A Gemini employee should be able to just open their laptop anywhere and access anything they need to connect with the customer," concludes Aahan. 

IN THE RIGHT DIRECTION

Rajamane Industries Pvt Ltd has stayed consistent in its growth, manufacturing high-quality coolant pumps for various industries. With resilience and focus as its primary driving forces, the company has tided over many a challenge only to emerge as a winner every single time.



The Bangalore facility of Rajamane Industries

Source: Rajamane Industries Pvt Ltd

POONAM PEDNEKAR
Chief Copy Editor
Magic Wand Media Inc
poonam.pednekar@
magicwandmedia.in



Established in 1975 in the garden city of Bangalore, Rajamane Industries Pvt Ltd has been manufacturing high-quality coolant pumps for various industries.

Taking us through its journey, Rajendra S Rajamane, Managing Director, Rajamane Industries Pvt Ltd, shares, "We had started small, and when I took over the operations in

1996, we strove hard to be a leading player in coolant pumps for machine tools. Our vision was to be a one-stop solution provider for all coolant requirements. We have been growing

Starting with three models, today, Rajamane Industries produces over 120 models to meet the needs of a wide array of industries, including Machine Tools, Printing, Packing, Filtration, and Chemical.

aggressively since and expanding our range for various pressures, flows, and materials. We have also been developing our infrastructure.”

With plants and offices at Dobbspet and Bangalore, Rajamane Industries’ current turnover is ₹120 crore. It targets ₹150 crore by the next fiscal year.

Rapid rise

The company is proud of its comprehensive product line that caters to the ever-changing requirements of the market. “We have a wide range of pumps and their subparts for all the variations of OEM requirements. We can supply pumps with a range of motor powers, voltages, and frequencies, with CE and UL approvals in place,” informs Rajamane.

It even makes the motors for all the pumps it manufactures. “We produce several electric motors for OEM applications like Filtration Gear Boxes, Lubrication Systems, and Gear Pumps. Our specialty is to deliver small quantities in a short period,” he adds.

It has also had the opportunity to produce an oil skimmer



Source: Rajamane Industries Pvt Ltd

“The Government is giving us the opportunity to bring back our focus and growth. Many of the schemes will take time to be implemented. The industry needs to focus on moving in that direction, which will require us to think differently and look for the opportunities that lie ahead of us.”

Rajendra S Rajamane
Managing Director
Rajamane Industries Pvt Ltd

for a machine tool application. “Our in-house designing and manufacturing of parts is the strength that helps us make

products which are 100 percent made in-house,” he adds.

Starting with three models, today, Rajamane Industries produces over 120 models to meet the needs of a wide array of industries, including Machine Tools, Printing, Packing, Filtration, and Chemical. Revealing the best-selling models and the sector that generates business the most, he states, “The models are available in a wide range for various flows, pressures, and different materials like plastic, brass, and SS. Although most of our business still comes from the Machine Tools industry, we also cater to the Chemical and Printing industries.”

The company also has the capability of manufacturing custom-built pumps in the shortest time, he informs. The range contributes to a large percentage of its monthly production.

State-of-the-art manufacturing facilities

Rajamane Industries started in Whitefield, Bangalore, and currently operates from two locations that house the assembly, motor winding, and critical grinding operations. “We have a separate site for volume-based, off-the-shelf products. In our endeavor to be the best, we have established a state-of-the-art 200-tonne ferrous and 10-tonne non-ferrous foundry. Hence, we are now able to turn in our casting assignments within days. The quality also has improved with better finish and lesser weights, making our pumps on par with international brands,” shares Rajamane.

Enlisting the company’s strengths, he says, “Our well-established ERP system ensures that we deliver our products on time. Our team at Rajamane is another major strength that strives to satisfy every custom-



Source: Rajamane Industries Pvt Ltd

er through some of the best industry practices. We work with many OEMs on the Kanban system and do the same with our suppliers. Our wide range of dealer networks plays a vital support system."

The company has a planning system that helps it plan to manufacture products two weeks in advance and for all its raw materials to come on time. "Many of our customers are also on Kanban, which helps us manufacture products as per the batch quantity required. Our foundry and machines work in tandem with the assembly line. The material is shifted as per the requirements

of the customer and the stock to sell," he adds.

The team members are provided with some fundamental training, after which they are consistently reviewed and updated with the required skills.

SMEs and automation


SMEs in India are still reluctant to embrace automation. Rajamane tells us how far the company has come in leveraging it for its growth, "SMEs are reluctant as the cost of automation needs to do justice with the volume produced. We, at Rajamane, have gone with the low-cost automation required for the scale at which we pro-

duce. We have also made our equipment; the auto Electric Division that we have is of help to us when we need to plan for any automation."

Tiding over challenges

Like all industry players, Rajamane Industries, too, had to face tough times during COVID-19 lockdowns. Sharing some of them, Rajamane says, "The industry had never experienced a COVID-like situation before. Hence, we were unprepared and had to face challenges, including managing our people and finance. The issue of our people took some time to stabilize, and we, as an organization, had to keep inventing newer methods to get people back to work."

"The Government is giving us the opportunity to bring back our focus and growth. Many of the schemes will take time to be implemented. The industry needs to focus on moving in that direction, which will require us to think differently and look for the opportunities that lie ahead of us," he adds.

"Collaboration and co-working will play a crucial part in this journey as we will need rapid changes to happen, and the same cannot be brought in single-handedly," he concludes. 

The company has a planning system that helps it plan to manufacture products two weeks in advance and for all its raw materials to come on time.



Source: Rajamane Industries Pvt Ltd

Shop floor of Dobbspet Facility

Disclaimer: The quality of images is hampered due to limitation in procuring high resolution images.



When Goals Matter!

 MODERN MANUFACTURING INDIA
WWW.MMIINDIA.CO.IN

The Official Magazine of

In Association with


For Advertising Contact:
MURALI SUNDARAM
E: murali.sundaram@magicwandmedia.in
M: +91 9740048390



POWER OF COLLABORATION

Cognizant of the fact that a lot can be achieved in working together, ELGi Equipments has joined forces with NASSCOM FutureSkills Prime, a skilling program powered by a partnership between the Ministry of Electronics and Information Technology, the Government of India; NASSCOM; and the IT industry to build vital digital skills for the future of work.



Source: Magic Wand Media

One of India's leading air-compressor manufacturers ELGi Equipments has come into partnership with NASSCOM's (The National Association of Software and Service Companies) FutureSkills Prime initiative. With this partnership, ELGi aims to equip every employee with a set of foundational digital skills that will enable them to operate in a digital environment, continually adapt to new ways of working, and add value beyond what can be done by automated systems and intelligent machines.

Knowing the deal

NASSCOM is an Indian non-governmental trade association and advocacy group focused mainly on the information technology (IT) and business process outsourcing (BPO) industries. Established in 1988, it is a non-profit organization. FutureSkills Prime, a skilling program focused on emerging technologies, is powered by a partnership between the Ministry of Electronics and Information Technology, the Government of India; NASSCOM; and the IT industry. Over one thousand ELGi employees are sched-

uled to undertake this program. It is a platform built by the Government and the IT industry with a vision of reskilling 2 million of the 4 million workforces employed in the IT industry. Through this initiative, the Government and the industry aim to reskill/upskill a total of about 1.4 million employees over a period of 5 years (1 million from company supported (B2B) skilling and another 0.4 million from Government supported/facilitated (B2C) schemes). It focuses on providing solutions to the challenges encountered while upskilling people

SOVAN TUDU
Sub-Editor
Magic Wand Media Inc
Sovan.tudu@
magicwandmedia.in





Source: ELGi Equipments

“Now more than ever, the need for each citizen to get equipped with the skills of emerging technologies is of paramount importance to leverage the waves of opportunity rising through this digital transformation we are going through.”

Kirti Seth
CEO
SSC NASSCOM

with emerging technologies such as Artificial Intelligence, Cloud Computing, Cybersecurity, Big Data Analytics, Robotic Process Automation, and more. FutureSkills Prime is one of the lighthouse schemes under the Government’s Trillion Dollar Digital Economy initiative. The registered candidates can develop core proficient skills, take aptitude diagnostics tests, acquire SSC NASSCOM certifications and scholarships, and become more digitally fluent.



Source: ELGi Equipments

“We recognize that emerging digital technologies will be central pillars in providing the best experience at each stakeholder touchpoint. Hence, it is imperative that all of our employees have a foundational knowledge of the various digital technologies to enhance that experience.”

Dr. Jairam Varadaraj
Managing Director
ELGi Equipments Ltd

Intent behind the endeavor


Sharing his views on the collaboration, Dr. Jairam Varadaraj, Managing Director, ELGi Equipments Ltd, said, “Our purpose is to provide the best experience at each stakeholder touchpoint. In our journey towards this purpose, we recognize that emerging digital technologies will be central pillars in providing such an experience.”

He further added, “Be it customers, employees or investors, digi-

tal can substantially and significantly enhance the experience. This has to be architected by our people and the starting point is to imagine the opportunities through the lens of digital technologies. To enable each employee in our organization to do this, it is imperative that they have a foundational knowledge of the various digital technologies. We are committed to ensuring all of our employees are digitally proficient and conversant with digital technologies as we adapt to the future.”

Kirti Seth, CEO, SSC NASSCOM, said, “Now more than ever, the need for each citizen to get equipped with the skills of emerging technologies is of paramount importance to leverage the waves of opportunity rising through this digital transformation we are going through. It is also important for each individual to speak the language of ‘digital’ and stay in tune with the world that is changing rapidly around us.”

“FutureSkills Prime has the vision of making individuals from across sectors and across job roles digitally fluent. We are proud that our voice has been recognized by industries across sectors. The fact that ELGi Equipments, a leading compressor manufacturing company, is going to leverage FutureSkills Prime to build the digital quotient of their employees, is a strong signal of how this need cuts across all industries and domains,” she opined.

“I wish ELGi’s employees an exciting learning journey to not just build on their technological foundations but unleash a fresh burst of creativity. This digitally-ready workforce will be the key to not just exponential growth of their company but also contribute to India’s dream of creating a trillion-dollar digital economy,” she added further. 

Through FutureSkills Prime, the Government and industry aim to reskill/up-skill a total of about 1.4 million employees over a period of 5 years. It is one of the lighthouse schemes under the Government’s Trillion Dollar Digital Economy initiative.



Source: Magic Wand Media

A PIONEER IN ROBOTIC AUTOMATION

In just five years, Addverb Technologies has become a major player in the field of warehouse automation. Here's knowing the company's remarkable journey and its disruptive plans for the future...



Source: Addverb Technologies

The Government of India wants the country to be a US\$5 trillion economy by 2025-26, with the Manufacturing sector contributing US\$1 trillion of it. This will be possible only when industries in India function at top gear, making full use of automation, robotics, and other latest technologies. Europe and America have been doing it, and so have some countries in Asia such as China, Japan, and Taiwan. India is doing it in a calibrated manner, but the pace needs to be increased if we want to meet the Government's aspirations. This is what Addverb is trying to achieve.

According to Sangeet Kumar, CEO, Addverb Technologies, the company's journey began when Kumar was working with the

other co-founders - Prateek Jain, Bir Singh, Satish Shukla, and Amit Kumar - at Asian Paints. All of them were involved in setting up for the paint giant some of the most automated factories and warehouses in the world.

Recollecting the market situation of 2016, Kumar says that at that time, most automation requirements were being met by companies based in Europe and the US. There were several challenges in installing and deploying these automation solutions in the Indian context, and there was a void with no major Indian player in the market segment.

Subsequent changes in the second half of the previous decade such as the implementation of GST, the rise of organized retail, the growth of e-commerce, and the push to

'Make in India' nudged the colleagues to start Addverb in June 2016. All of them had tremendous insights into the latest technologies and valuable experience in operating highly automated factories and warehouses. "We felt that we could create some unique product offerings by merging our knowledge of technology and operations," Kumar recalls.

Exhaustive range of automation

Addverb Technologies had humble beginnings when it started in two rooms located at Tagore Garden in Delhi. As the team grew in size and business volumes increased, the company shifted its operations to Noida in 2018. It now has a brand-new facility called Bot-Valley in Noida.

POONAM PEDNEKAR
Chief Copy Editor
Magic Wand Media Inc
poonam.pednekar@
magicwandmedia.in



Kumar says the company has come a long way and he can look back with some degree of satisfaction as it rose from a turnover of ₹1.5 crore in the first year to around ₹200 crore in the last financial year.

He explains that Addverb provides robotic automation for warehouses and fulfillment of operations. The company's end-to-end product portfolio helps in the complete automation of warehouse processes. "Our products and services merge the information technology and operational technology and help us deliver innovative automation solutions that help businesses increase the throughput and accuracy of their operations and make the fulfillment operations highly reliable," he states.

Since the startup designs, develops, and deploys its products, it is easier to incorporate any change as per the needs of the customer, thus giving the customer the flexibility to incorporate changes during the project implementation as well. "Our products and services can be categorized as robotics, ASRS, and software, which cover the entire range of automation," he informs. These products and services help businesses to automate processes such as in-warding, put-away, order picking, material movement, order consolidation, sorting and packing.

Addverb's software helps in controlling different automated equipment and in executing warehouse processes through automation. Its product line includes robots such as Dynamo (autonomous mobile robot), Zippy (sorting robot), Quadron (carton shuttle robot), Multi-Pro (ASRS), Cruiser (pallet shuttle robot), intelligent software like Mobinity (warehouse control system), Optimus (warehouse management system), and semi-automated systems like



Source: Addverb Technologies

"Our ability to combine traditional or fixed and flexible automation is a unique feature, which, coupled with our in-house state-of-the-art manufacturing capabilities, gives us the flexibility to provide innovative solutions."

Sangeet Kumar
CEO
Addverb Technologies

Rapido (pick-to-light) and Khushi (pick-by-voice), he shares.

Leveraging technologies

The automation expert uses a number of technologies to build products that help improve the performance and accuracy of warehouse and factory operations. Its products can be visualized as electro-mechanical devices controlled by intelligent software. As such, its products have elements of both hardware and software, and the company has a multi-disciplinary engineering team to cater to these requirements; it has more than 450 engineers, out of whom around 20 percent are dedicated to R&D. "We use different technologies for different products, and also use technology extensively in our internal processes. This gives us a competitive advantage. For instance, we use industry-leading PLM software to deliver our products. We leverage complex

design, simulation, and rendering software to develop the look and mechanical design of our products," informs Kumar.

For the automation and control elements of the company's products, it uses a digital twin. To crash project delivery timelines, it follows the practice of simulation and virtual commissioning, which helps it to anticipate and identify issues in projects before the physical installation takes place.

Addverb uses artificial intelligence and machine language in its software for solving task scheduling and order prioritization for customers in warehouses. Many of its offerings like WMS and WCS are cloud-based, which is a first in the industry.

Funding based on trust

More often than not, startups are prone to running into financial crises, but Addverb has had a smooth journey. "When we decided to exit Asian Paints and start Addverb, the first person we informed was Jalaj Dani, one of the promoters of Asian Paints. He was also the President of Asian Paints' supply chain, HR and international business at that time. He assured us of full support whenever we felt the need. He also invested US\$11 million in Addverb over a period of two years," shares Kumar.

As all of them belonged to the same culture at Asian Paints and had worked with him for 12 long years, there was a certain level of trust. Dani knew their plans and believed in them. He was not only an investor, but also a mentor. "Both the investments that we have raised so far have primarily come from Jalaj Dani. GAIL also invested in us under its initiative, Pankh, which was launched under Startup India," he adds.

The investment in terms of time and R&D came from their experience working with Asian Paints. "I would like to point out here

The company has come a long way from a turnover of ₹1.5 crore in the first year to around ₹200 crore in the last financial year.

that Jalaj Dani invested money in Addverb in his personal capacity, not on behalf of Asian Paints," Kumar informs.

Expanding amid competition

Kumar believes that Indian companies have not really embraced technology for their supply chain and not automated their operations fully: "When we started, there were only a handful of automation players. All were foreign players including American, Japanese, Korean, Italian, German and British. But their products were typically not accustomed to the Indian conditions and had little scope for any customization as per the business requirements and operations in India, thus leading to a considerable ramp-up and commissioning time."

This limited the adoption of automated solutions to a few large companies. These large companies were also reluctant to try out new solutions since they had faced challenges from the already installed solutions. Also, as these solutions were expensive, small and medium companies could not afford them.

He shares that the company's initial days were filled with endless sessions with its customers. "Our approach has been to educate the customer about the benefits of



Source: Addverb Technologies

automation. As Indian companies are scaling up, they are realizing the need for automation. At Addverb, we offer automation solutions that are flexible and affordable, leading to their wide-scale adoption," he adds. The company has since been able to build a world-class team of engineers and has bagged more than 100 customers, including the likes of HUL, Marico, Reliance, Flipkart, and Amazon.

Addverb is now looking forward to expanding across the globe, especially South East Asia, the US, Europe, and Australia. It has established offices in Singapore, Australia, and the Netherlands, already deployed its solutions in projects located in Hong Kong and Singapore and is currently working on a project in Australia. It is soon to open an office in the US too.



Source: Addverb Technologies


"Our ability to combine traditional or fixed and flexible automation is a unique feature, which, coupled with our in-house state-of-the-art manufacturing capabilities, gives us the flexibility to provide innovative solutions," he states.

Automation in the time of COVID

The global pandemic has changed many things. Companies are constrained by inadequate manpower availability to manage their warehousing operations since many people have left for their hometowns due to lockdowns. To maintain adequate social distancing and ensure that their products are not touched by many people during warehousing operations, goods-to-person technologies such as mobile robots and carton shuttle robots have been picking up. These technologies ensure fast, productive, and reliable warehousing operations.

Another factor is the rise of micro fulfillment centers (MFCs), which are sprouting across the country to ensure low-cost, last-mile delivery of orders. MFCs can achieve their performance expectations through manual and automated solutions.

"The robotics and warehouse automation field has got a tremendous push due to COVID-19. In India alone, the warehouse automation market will be worth more than ₹10,000 crore in the next five years. The major players in the global market are Knapp, Dematic, Intelligrat-ed, Vanderlande, Daifuku, and Schaeffer, to name a few. However, we have a wider product portfolio than our global peers, and our software suite is more powerful," Kumar shares.

"Our journey till now has been highly exciting and fulfilling. We want to extend robotics to other industry verticals as well," he adds summing up. 

"The robotics and warehouse automation field has got a tremendous push due to COVID-19. In India alone, the warehouse automation market will be worth more than ₹10,000 crore in the next five years."

ONLINE PERSONALISED TRAINING PROGRAMMES IN DESIGN THROUGH MANUFACTURING

To facilitate continual training and development of manufacturing professionals across the globe, **IMTMA** (Indian Machine Tool Manufacturers Association), the organisers of **IMTEX & TOOLTECH** exhibitions in India, are organising a series of “**Instructor led online training programmes**” and “**e-learning programs**”. These programmes have been developed to address various aspects of manufacturing and to provide learning content that is useful, practical and comprehensive.

Access at Anytime

Access from Anywhere

Access to Anybody



INSTRUCTOR LED ONLINE TRAINING PROGRAMS

Online Instructor led Webinars & Training programs using the latest video conferencing tools to enable real-time training from anywhere in the world and connect with a Subject Matter Expert.

Key features

For further details and to register your participation, please visit www.imtmatraining.com

- Access to expert training, through a real time training forum
- Facilitates exchange of ideas amongst industry professionals across the globe
- Active participation through quizzes, chat forums and interactive demos / simulations
- Improved tracking of the learning process through online feedback / questionnaire
- Cost effective training programmes to facilitate greater participation from the industry

Simplified, relevant, organized & instructive, training programmes on “**Design thru' Manufacturing**” through usage of Videos, animations, diagrams and graphs, for presenting moving parts, physical reactions, flowcharts and technical drawings.



E-LEARNING PROGRAMS



Key features

- Web based courses, accessible 24x7; Learn from desk at flexible timings
- Courses developed by Industry Experts with rich industry experience of 30+ years
- Unlimited access for 30 days from the day of obtaining licence
- Evaluation and Certification based on final assessment
- Bulk licencing option available for multiple users
- Widely sought after by manufacturing industries such as TVS Motor, Wabco India, Bajaj Auto and Buhler, to name a few.

For further details and to register your participation, please visit www.imtmaelearn.in



IMTMA Technology Centre
Indian Machine Tool Manufacturers' Association
www.imtmatraining.com | www.imtmaelearn.in

For further details and registration, please contact:

Indian Machine Tool Manufacturers' Association
BIEC, 10th Mile, Madavara Post, Tumkur Road, Bangalore - 23
Contact : 9886331231 | e-mail : training@imtma.in

IMPETUS FOR SELF-RELIANT MANUFACTURING

It is critical to assess the impact of the nationwide lockdowns and the challenges that the manufacturing industry faces to stand strong and become self-sufficient. VDMA India deliberated on this need and much more in its flagship event. A report...



The Government's impetus and policies, strategic ties, smart manufacturing trends, and focus on accelerated digitalization and localization are called upon for deliberations. Touching upon these points, the 10th VDMA Mechanical Engineering Summit, VDMA India's annual flagship event, was held on October 8, 2021, at the Hotel Sheraton Grand Bangalore, drawing over 260 participants from 17 Indian cities.

Welcoming the audience, Rajesh Nath, Managing Director, VDMA India, explained the impacts on the economy and the business situation during the lockdowns and the second wave of the COVID-19 pandemic. He also gave glimpses of the improvement in the circumstances currently happening. He further elaborated on some of VDMA India's key activities for the current year 2021, such as organizing the Additive

Manufacturing Symposium, the first VDMA symposium after the second wave of the pandemic, followed by 'Emerging Technology Trends in Manufacturing Processes' at Pune and Bangalore, the North India Members Meet, and the recent German Technology Day symposium at Ranchi. He stated that the VDMA India team has completed over 100 webinars with over 15,000 participants since the initial lockdown.

The Guest of Honour, Achim Burkart, Consulate General of the Federal Republic of Germany, Bangalore, spoke on the 'Indo-German Relations: Prospective Business Synergies & Government Support'.

In his special address, the Guest of Honour, Kamal Bali, President & Managing Director, Volvo Group, India, focused on the 'Transformation of Manufacturing in India' and emphasized the importance of small-

and medium-sized enterprises (SMEs) and the Manufacturing sector in creating job opportunities and contributing to the GDP, making India a US\$5 trillion economy. He stated that the current situation in India is the best time for the Manufacturing sector, owing to the implementation of Government policies such as the Product-linked Incentive and GST, which are in place to improve the ease of doing business.

Impetus to manufacturing

Atish Laddha, Senior Associate, Indirect Taxation, Roedl & Partner India Pvt Ltd, spoke on 'Government Incentives and Subsidies- Unwrap the gifts on your desks', highlighting manufacturing incentives, GST refunds, state industrial policies, customer bonded warehouse policies, and the EPCG Scheme (Export Promotion Capital Goods Scheme).

SOVAN TUDU
Sub-Editor
Magic Wand Media Inc
Sovan.tudu@
magicwandmedia.in



In his presentation on 'Ease of Doing Business in Tamil Nadu State', Aditya Nagarajan - Vice President, Investment Promotion, Guidance Tamil Nadu, Industries Department, Government of Tamil Nadu, elaborated on the future investment opportunities in Tamil Nadu as an export market for German companies.

Umesh Pai, Managing Director, EPLAN Software & Services Pvt Ltd, spoke on the 'Digitalized Future of the Industrial Ecosystem- It's in Your Hands'. He discussed the digitalization process as well as the tectonic shift in manufacturing over the last 15 years in the context of operational management.

Future smart manufacturing trends

Sreekanta Aradhya, Global Head - Connected Industries Business Area, Robert Bosch Engineering & Business Solutions, spoke on 'Seize the I4.0 Opportunity - Onboard the Digital Transformation Journey'. He highlighted the digitalization process from a 'Bosch perspective', as well as a comprehensive road map for companies just starting on their transformational journey.

Prashanth Uppunda, Technology & Innovation Topics Leader, SIEMENS Technology & Services Pvt Ltd, assessed 'Autonomous Factories - Reality or Myth'. Speaking on autonomous factories which are unavoidable and how even small companies can take a step towards autonomous manufacturing, he added, "Now, we tell our robots what to do and how to do but, tomorrow we will tell our robots what to do, and they will decide how to." Citing several examples of how SAP's digital factories have helped companies turn around their shop floors, Sumantha Chakraborty, Senior Project Manager, SAP India, touched upon various use cases and real-world

examples of 'Digital Transformation on the Shop Floor'.

Indian economic reforms

A panel discussion on 'Economic Reforms in the Last Three Decades - Make in India 2.0' was moderated by Nath. Speakers such as Rohit Bhagade, Chief Financial Officer, SAP India Subcontinent; VG Sakthikumar, Managing Director, Schwing Stetter India; Prashanth Doreswamy, Country Head & Managing Director, Continental Automotive India; Ravi Agarwal, Managing Director, Pepperl+Fuchs Factory Automation; Ulrich Greiner Pachter, CEO & Managing Director, SMS India Pvt Ltd; and Wilson Thomas, Managing Director, Carl Zeiss India, presented their perspective on the topic.

When asked to elaborate on the Insolvency & Bankruptcy Code (IBC) and how it has helped the Indian Manufacturing sector, Bhagade elucidated that the IBC is a game-changer and a step in the right direction for companies under distress due to its sheer transparency in timelines. The policy has also benefited the banking system, with India's Ease of Doing Business index rising from 136th to 66th in just five years. Sakthikumar added that India's 'single tax' GST policy benefits both the Government and foreign investors in terms of ease of doing business. Speaking on the benefits India's MSME sector can receive, Doreswamy said that when Non-Banking Financial Companies (NBFCs) are considered, the MSME sector will benefit. Similarly, Agarwal stated that the Emergency Credit Line Guarantee Scheme (ECLGS), as well as the speed and transparency with which it was implemented, is a significant enabler for India's export growth.

Concerning the New Labor Codes implemented, Thomas stated that large companies generally follow these guidelines and would have


no trouble accommodating these reforms. However, he added, MSMEs would require some time to restructure their policies. In any case, these codes are the way forward to ensure employees a stable income and security.

Make in India 2.0 and Atmanirbhar Bharat were elevated in the second round of the panel discussion by pursuing policies that are efficient, competitive, and resilient, as well as self-sustaining and self-generating. The PLI scheme, as per Doreswamy, has accelerated investments in the Automotive sector, with nearly ₹3.5 lakh crore allotted for PLIs, and ₹56,000 crore dedicated to the Automotive sector.

A strong infrastructure growth is required to achieve India's ambiguous goal of becoming a US\$5 trillion economy by 2025. Sakthikumar explained that the National Infrastructure Pipeline Project has been in full swing since its inception in 2020. The Government is concentrating on the Transportation and Power sectors, while the Construction industry is gaining traction.

Awards

VDMA India, in collaboration with Rödl & Partner, conferred the fourth VDMA Manufacturing Excellence Awards under two categories. Vulkan Technologies and Micro Precision Products shared the 'Energy Efficiency and Conservation Award' for the 'Medium Category', while Zahoransky Moulds & Machines finished second. Continental Automotive Components won in the 'Large category', with Truetzschler India coming in as the runner-up.

R Stahl won the 'Work Condition and Work Safety Award' in the 'Medium category', with Kern-Liebers India coming in second. Daimler India Commercial Vehicles India was the winner in the 'Large category' and Bosch was the runner-up. 

The 'Summit Special' issue and knowledge paper by BDB India titled 'Government incentives for Emerging Opportunities - Atmanirbhar Bharat & PLI Scheme' was also released at the event.

Company Index

Addverb Technologies	44	Indian Machine Tool Manufacturers' Association (IMTMA)	6, 8, 12
Ansys	33	Kennametal India Pvt Ltd	26
AVEVA	17	Lockheed Martin Aeronautics	22
Beckhoff Automation Pvt Ltd	29	Micromatic Machine Tools Pvt Ltd	19
Boeing	22	Paragon Medical	30
ELGi Equipments Ltd	42	Rajamane Industries Pvt Ltd	39
ESPRIT	30	Salesforce	36
Flex India	14	Schneider Electric India	14
Ford	22	SSC NASSCOM	42
GE Renewable Energy	22	VDMA India Services Pvt Ltd	48
Gemini Power Hydraulics	36	VR Intelligence	22
General Electric	22	WIDMA	26
German Engineering Federation (VDMA)	48	Zetwerk Manufacturing	14
IDC Asia/Pacific	20		

Advertiser Index

Beckhoff Automation Pvt Ltd – www.beckhoff.com/c6025	07
CHIRON India Machine Tools Pvt Ltd – www.chiron-group.com	11
EPLAN India – www.eplan.in	09
IMTMA – www.productivity.imtma.in	02
IMTMA – www.imtex.in	52
IMTMA – www.imtmaelearn.in	47
Jyoti CNC Automation Ltd – www.jyoti.co.in	03
Quaker Houghton – www.quakerhoughton.com	29
RV Forms & Gears LLP – www.rvformsandgears.com	51
Taiwan Association of Machinery Industry – www.tami.org	50
Taiwan Machine Tool & Accessory Builders' Association – www.tmba.org.tw	05

TAIWAN MACHINE TOOL BEYOND SMART

We Believe In:

Intelligent	Production
Integrated	Programming
Infinite	Possibilities

Bureau of
Foreign Trade

Taiwan External Trade
Development Council

Taiwan Association
of Machinery Industry

Intelligent Fixtures

A breakthrough Industry 4.0 solution for Fixtures.



Smartfix 4.0 is a unique Industry 4.0 solution for all types of Fixtures and Workholding which uses Data Analytics and Artificial Intelligence to give the user a lot of useful information like:

- Tool Wear Analytics
- Cost Per Component Analytics
- Vibration Alerts
- Declamp Alerts
- Output of Fixture and Machine
- Predictive Maintenance of Fixture and Machine
- Analytics of Operator Efficiency
- Historical Analysis of performance of machine, powerpack, tools and fixture
- Powerpack oil level and oil contamination alerts

Smartfix 4.0 can be installed on existing fixtures also and is the most cost effective way of making the entire machining set up Industry 4.0 enabled.

SmartFix4.0®

For over 45 years Forms & Gears has been supplying Precision Machining Centre Fixtures to the world's leading Auto OEMs and Machine Makers in Japan, Germany, UAE, Qatar, Thailand, Turkey, Indonesia and all over India.

RV Forms & Gears LLP
MF 11, SIDCO Industrial Estate, Guindy,
Chennai - 600 032, Tamilnadu, India
Call +91 77570 53326 or email us on
marketing@rvformsandgears.com
www.rvformsandgears.com





DO IT DIFFERENTLY



International Machine Tool & Manufacturing Technology Exhibition



International Forming Technology Exhibition

CONCURRENT SHOWS



International Exhibition of Cutting Tools, Tooling Systems, Dies & Moulds, Forming Tools, Machine Tool Accessories, Metrology & CAD / CAM



International Exhibition on Industry 4.0 & Additive Manufacturing

20 - 26 January 2022, BIEC, Bengaluru

- ◆ Pre-Registration Mandatory
- ◆ No Spot Registration

- ◆ Entry only for Fully Vaccinated (2 Doses)
- ◆ Vaccination Certificate Mandatory

- ◆ Wear Masks
- ◆ Sanitize Hands Regularly
- ◆ Maintain Social Distance

Organiser



Venue

