

# TAGMA TIMES

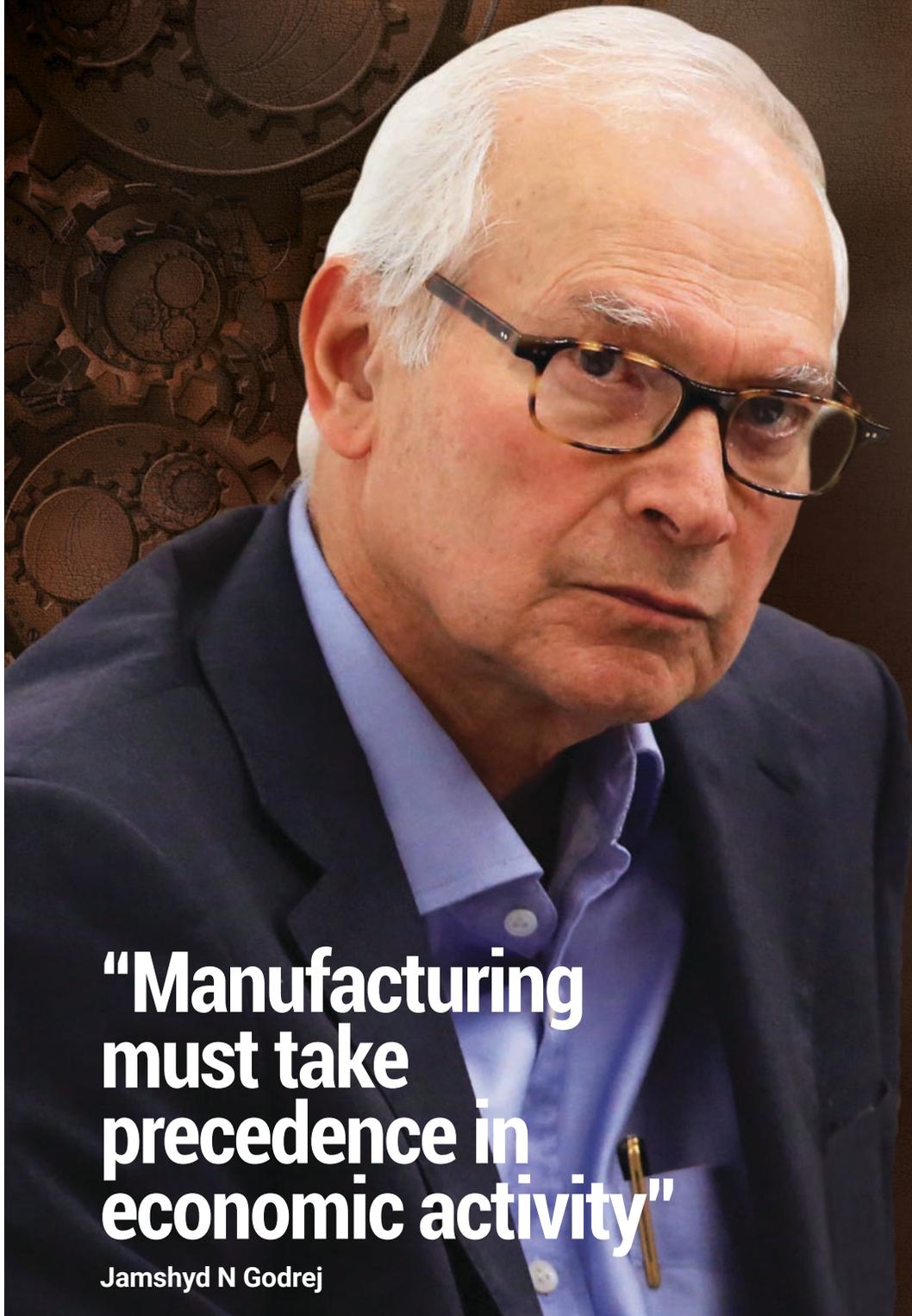
NEWSLETTER

(Technical Info. on Die, Moulds & Toolroom)

Volume: XXVI / No. 04

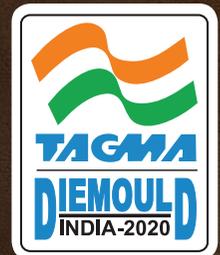
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December 2019



**“Manufacturing  
must take  
precedence in  
economic activity”**

Jamshyd N Godrej



**Die Mould India: Gateway to Global Tooling Industry.....pg10**

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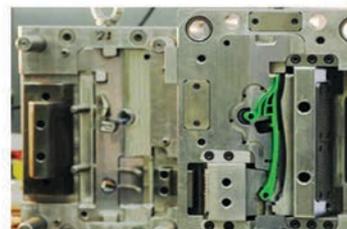
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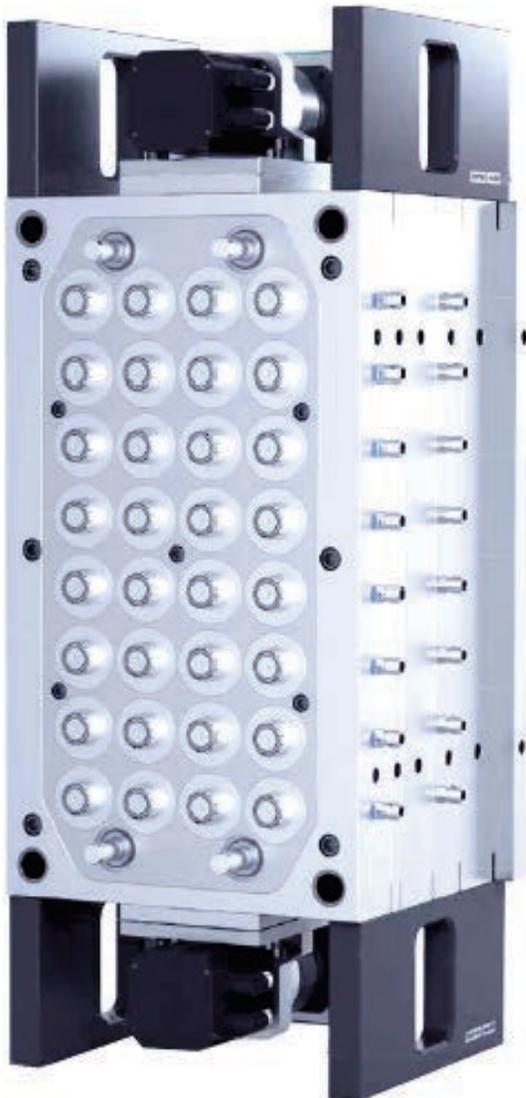


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# PRESIDENT'S MESSAGE



**M**anufacturing has emerged as one of the high growth sectors in India. Prime Minister of India, Mr Narendra Modi, had launched the 'Make in India' program to place India on the world map as a manufacturing hub and give global recognition to the Indian economy. India is expected to become the fifth largest manufacturing country in the world by the end of year 2020. However, the slowdown in year 2019 has hit the industry significantly and Indian economy still seems to be sluggish. But I am also sure that countries like India cannot afford to have long term slowdown and the industry has to bounce back. We are expecting the industry to recover in coming 3 quarters as the automotive industry has started showing some positive signs after the festive seasons and the growth observed in industries like Aerospace, Railways and Defence.

In 2019, prime driver for tooling, automobile sector, was under unprecedented slowdown. Tooling companies who depend on exports have done partially well but for others who were largely dependent on domestic customers were caught in the slowdown process. Of course, Government has taken some corrective measures to help the Indian manufacturing industry, but it will take some time to yield results.

TAGMA India is leaving no stone unturned to help the industry grow, deliver message of tool makers to government and help companies be updated with the global trend. We have taken issues with commerce ministry to review FTAs with countries who are supplying tools to India with competitive advantage. High import duties on tool steel is further decreasing the profit margins. However, we cannot entirely depend on the government to help us. We all must learn from each other's expertise, create better breeding grounds for the new entrants and emphasise more on quality and efficiency.

Recently, we got a chance to interact with Mr. Jamshyd N Godrej, the founder member of TAGMA. He opined that "SMEs, mould makers, and component suppliers must improve the efficiency of their manufacturing processes. Also, they must bring focus on the quality of products. Currently, they are largely dependent on OEMs and large buyers who educate them. SMEs must work in collaboration with their peers to not only learn from each other but also maximise output from their system by forming clusters."

*(Please see his interview on page no. 24)*

**D. K. Sharma**  
President



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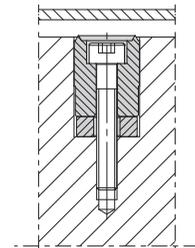
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## Let's Learn

**A**s we end the year 2019, let us look at the opportunities and challenges presented before the tooling industry. We are all aware that 2019 was not the best year for us. The automotive industry, one of the biggest consumers of tools, witnessed the worst slowdown in the last two decades. Tooling companies that are largely dependent on the automotive industry took a major hit.

However, 2019 Taught us a lot – about the increasing need for skill development, adoption of the latest technologies, and most importantly how crucial it is to diversify.

The year was also an eye-opener as it helped us realise that there are other industries beyond automotive with attractive opportunities. This resulted in an increase in demand for tools in industries like aerospace, medical, defence, and railways. Now that is something positive. 😊

We at TAGMA TIMES, also have something positive to wrap up the last edition of 2019. Mr. Jamshyd N Godrej, Chairman & Managing Director, Godrej & Boyce Mfg. Co. Ltd. and Founder Member of TAGMA India sharing his optimistic views for the year to come. Turn to page number 24 and learn how Mr. Godrej sifts out the pessimism and points out ways the industry can embrace the opportunities available and grow further.

I want to end this year with the hope to learn from our mistakes and make the best of the upcoming opportunities. In 2020, let us join hands and set higher goals for the industry together.

Wishing you a very Happy New Year! Tagma Times will be back with more informative articles and new topics in 2020.

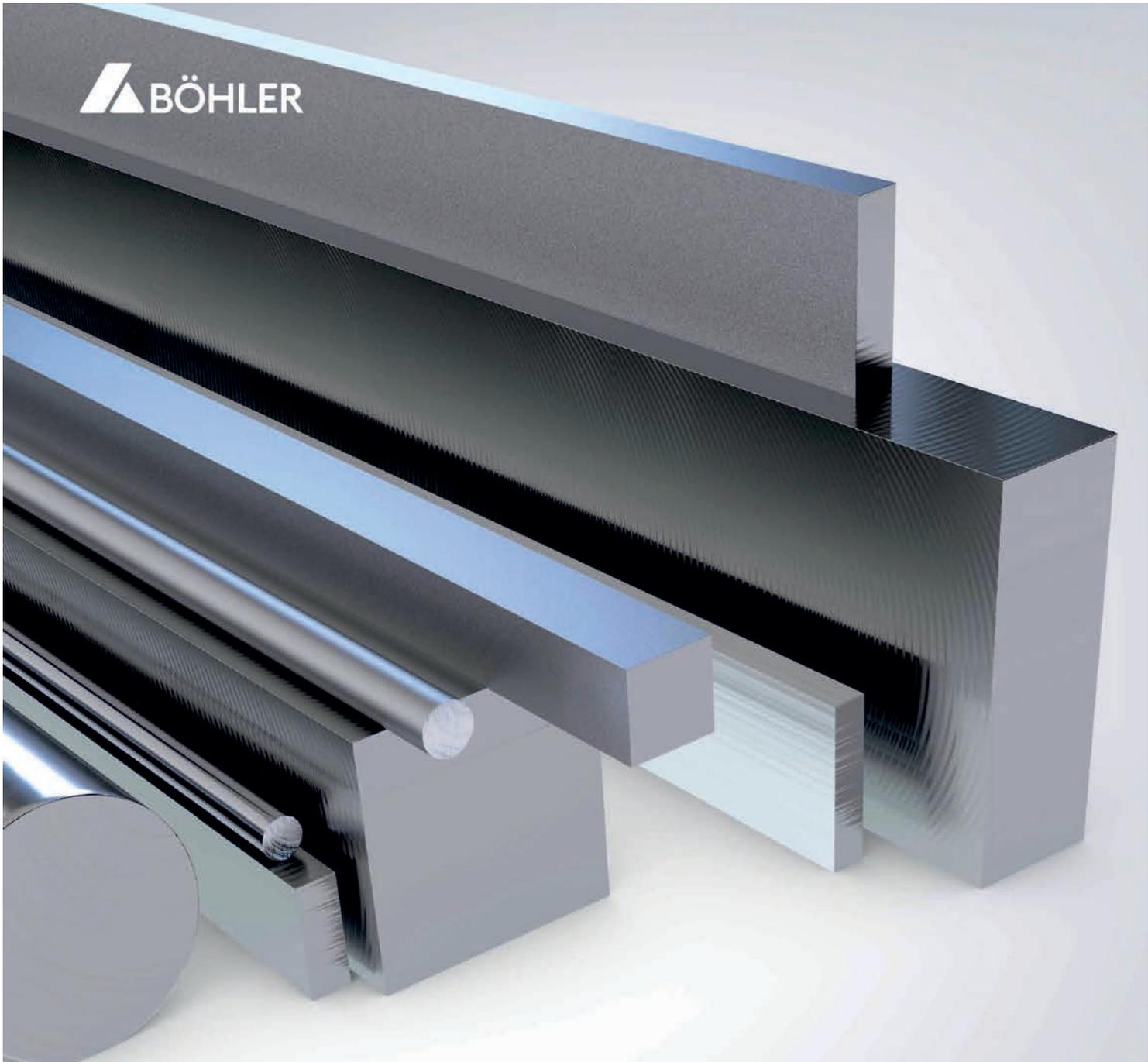
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ONE STEP AHEAD.

## Die Mould India: Gateway to Global Tooling Industry

Started in the year 1998, Die Mould India has come a long way to become India's largest show for die mould fraternity. In its 12<sup>th</sup> edition in April 2020, the exhibition promises to be the bigger and better from the previous editions.

Organised by Tool and Gauge Manufacturers Association – India (TAGMA INDIA), the Die Mould India exhibition is going to take place from April 22-25, 2020 at Bombay Exhibition Centre, Goregaon, Mumbai. Owing to the success of previous edition held in 2018, the 2020 edition has witnessed huge response from the industry and has already crossed space booking from the previous editions.

The 11th Die & Mould India International Exhibition from April 11-14, 2018 at Bombay Exhibition, Centre, Goregaon, Mumbai was a huge success wherein visitors witnessed latest technologies and innovation to new launches on display



### Highlights of Die & Mould India 2018

- ▶▶ 31,256 visitors from automotive, aerospace, die mould, machine tools, heavy engineering, plastics, packaging, consumer goods, etc.
- ▶▶ Increase in exhibitors by 20% and exhibition space by 30%
- ▶▶ Delegations from PSUs and large OEMs

"I am delighted to say that in spite of slowdown in the industry, we have already crossed space booking from the previous edition. This clearly indicates that the industry is optimistic about the coming days. At Die Mould India 2020, I am sure we all will be able to see some latest technologies, observe trends and make more acquaintance. We are inviting delegates from various industries that includes PSUs and large OEMs," said Mr DK Sharma, President, TAGMA India.

The exhibit range this year included additive manufacturing, CAD/CAM system related to dies and moulds, CNC Milling Machining Centre, coating, cutting tools, digitizing, dies & moulds, press tools, jigs, fixtures, gauges, heat treatment,



hot runner system, machine tools and accessories for dies and moulds, measuring machines, quality assurance, mould base and standard parts of dies & moulds, toolings, moulding machines/ die casting machines, sheet metal presses and ancillaries, precision machining, rapid prototyping and tooling, surface treatment, texturing, tool steel, all ancillary materials equipment accessories consumables, services and automation covering die and mould industry.

Indian manufacturing industry, especially automotive sector witnessed huge slowdown year 2019. However, things started to improve since festive season. A monthly survey has revealed that India's manufacturing sector activity has improved in the month of December 2019 driven by ramped up production by companies and resumed hiring efforts. The IHS Markit India Manufacturing PMI rose to 52.7 in December from 51.2 in November which is the strongest improvement in 10 months. These numbers clearly indicate that 2020 could be the year to regain lost momentum and Die Mould India may just prove to be the platform for mould makers and machine tool builders to grab the growing opportunities in the industry.

For more information:

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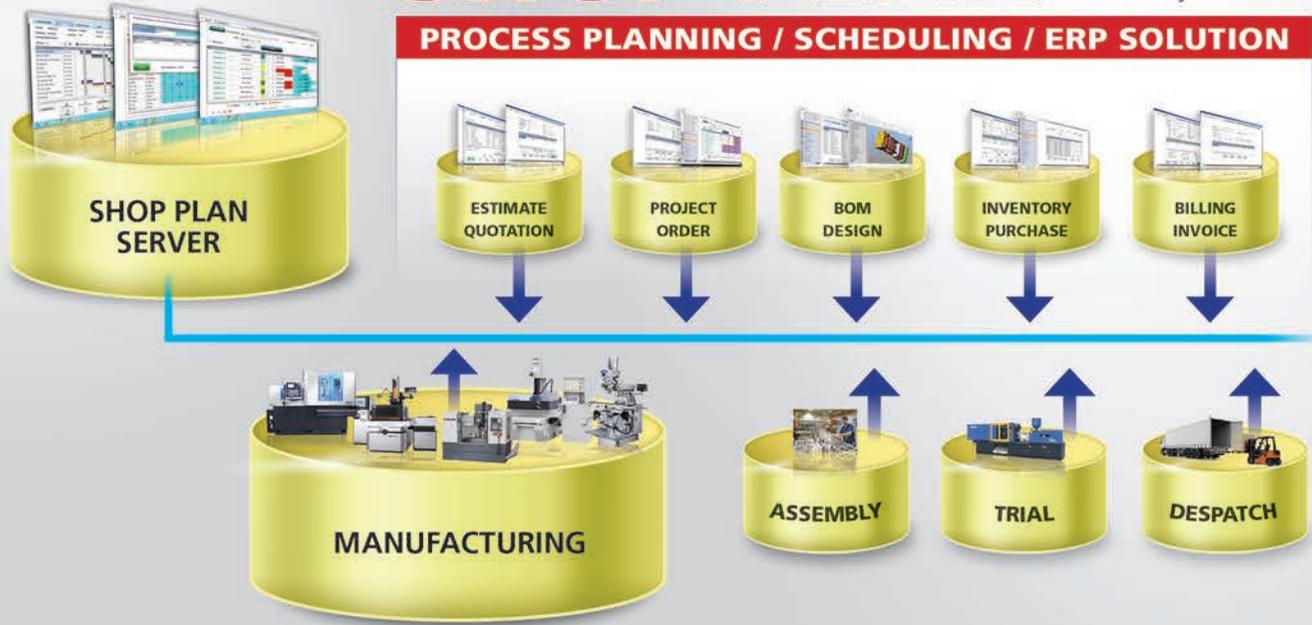
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## DHI unveils 8 centres of excellence for development of manufacturing technology

**SECRETARY**, Department of Heavy Industry (DHI), Dr A.R. Sihag inaugurated three Technology Development Projects at IISc Bangalore and Central Manufacturing Technology Institute (CMTI) Bengaluru recently. He also inaugurated two Technology Development Projects at PSG College of Technology and Scientific and Industrial Testing and Research Centre (SiTARC), Coimbatore respectively.

IISc Bangalore has developed a technology for metal additive printing machine with DHI support. This is niche technology and the development is being done for the first time in India.

An Industry 4.0 'Samarth Udyog' Centre is also coming up at IISc Bangalore in order to support Indian manufacturing to adopt and assimilate Industry 4.0 technology such as Data Analytics, 3 D Printing, Artificial Intelligence, Virtual Reality, robotics machine to Machine

Communication, Smarting of the Legacy machine.

A sensor technology manufacturing/fabrication facility is also coming up at CMTI, Bengaluru with the help of the DHI. Sensor Technology will help in making products and machines smart through the deployment of function-specific sensor specially designed for data extraction. Another facility for Nanotechnology is also coming up in CMTI that will provide a better alternative route for precision manufacturing in strategic sectors.

PSG College Coimbatore along with Industry partners developed Welding Robots, special alloy electrodes, power supply with the support of DHI. Indigenous technology has been developed at SiTARC by a triad of Academia, Industry and Government for development of Smart Submersible Pumping Solutions for Industrial and

Water Supply Applications.

Department of Heavy Industry in the Ministry of Heavy Industries and Public Enterprises had launched a pilot scheme in November 2014 for enhancement of competitiveness in the Indian capital goods sector. The scheme is focused on making the Indian capital goods sector globally competitive and give a boost to the Indian economy. The scheme addresses the issue of technological depth creation in the capital goods sector besides creating common industrial facility centres.

The scheme consists of five components which are Advanced Centres of Excellence, Integrated Industrial Infrastructure Facilities (IIFC), Common Engineering Facility Centre (CEFC), Testing & Certification Centre (T&CC) and Technology Acquisition Fund Programme (TAFP).

## A Gradual Recovery Expected in 2020: CII

CII in its press release suggests that there are nascent signs that the economy is on a better footing than what it was in the year gone by. With the proactive measures taken by the government and the Reserve Bank of India (RBI), the industry believes that the slowdown will be overcome, and a gradual recovery will soon be in place.

"The results are fast percolating through and becoming increasingly evident on the ground. Nascent signs of recovery are noted in the form of improved PMIs of manufacturing & services, jump in passenger air traffic, sharp moderation in the decline in sales of passenger cars among others", highlighted Mr Vikram Kirloskar, President, CII. Though we may continue to see a subdued GDP print in the third quarter as well, but the quarters thereafter are likely to see a rebound, Mr Kirloskar added.

With the initial difficulties associated with the structurally positive measures of GST

and the IBC getting gradually ironed out, the industry is hopeful that this will result in the accrual of substantial benefits for the economy. The year 2019 will be remembered as one where the systemic clean-up of the financial sector picked up pace, which might have resulted in short-term pain for the economy. However, this



tidying up will have extensive positive ramifications for the economy in the short to medium term.

"On balance, all these factors will have a significant bearing on growth in the next fiscal. Add to this the easing of global trade tensions along with lagged impact of monetary easing coupled with improved transmission, and we are in for a gradual recovery getting firmly entrenched by the next fiscal", Mr

Kirloskar commented. CII has actively partnered with the government by providing constructive recommendations from the industry to kick-start growth in the year gone by. We will continue to engage with the relevant stakeholders in order to make sure that our economic growth moves to a higher trajectory.

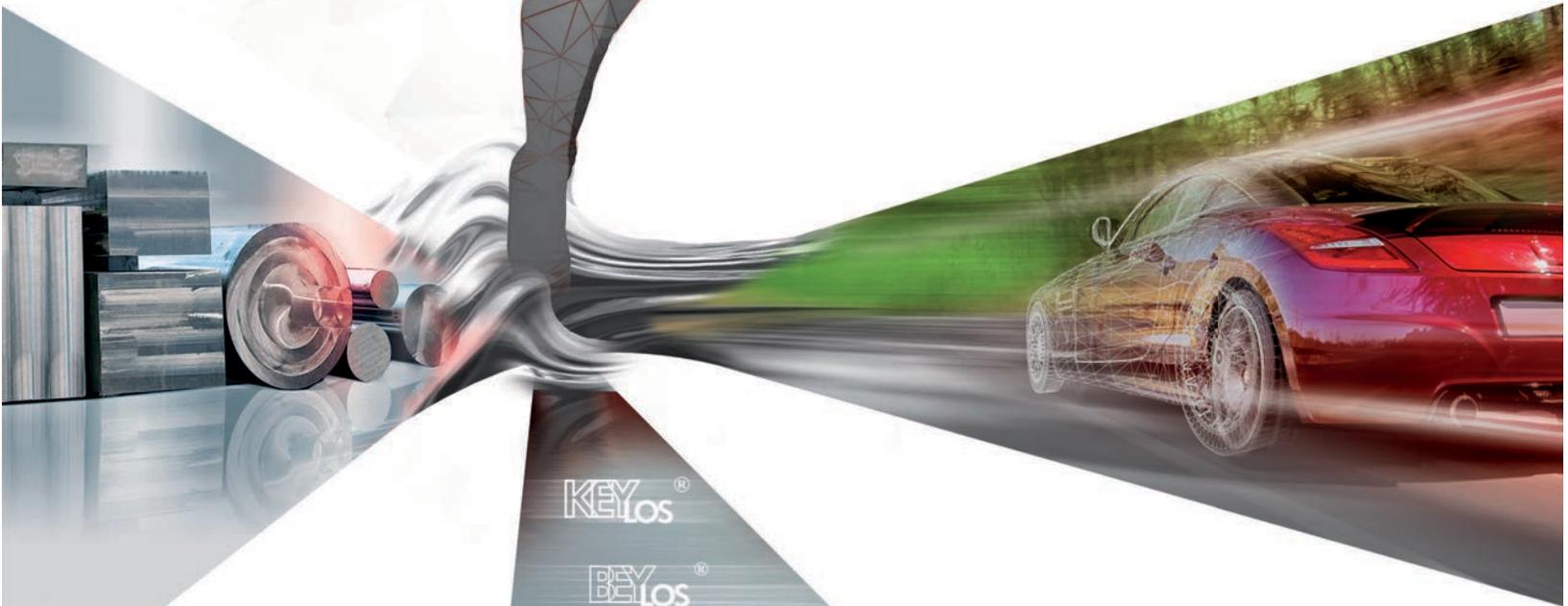
CII feels that with the sharp moderation in growth, the time has come to adopt an expansionary fiscal policy. "Just like our medium-term inflation target range, we can have a Flexible Fiscal Policy target which will set a central target for the fiscal deficit with a range of around 0.5% to 0.75%. The additional availability of funds may be spent on key infrastructure projects which can be implemented quickly. This is likely to have a significant multiplier effect on the economy", said Mr Uday Kotak, President-Designate, CII. In the subsequent years, there can be a glide path to converge to the FRBM trajectory over a 2-3-year timeframe, he added.



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## Tata Motors partners Prakriti E-Mobility to deploy Tigor EVs

**ACCELERATING** the transition to sustainable transportation for the masses, Tata Motors announced a partnership with Prakriti E-Mobility Private Limited, to deploy 500 Tigor EVs in New Delhi. Prakriti E-Mobility Private Limited, an EV based taxi service co-founded by Nimish Trivedi, Vikas Bansal and Rajeev Tiwari, will deploy the Tigor EVs on its app-based platform EVERA, which will serve in Delhi/NCR, reinforcing its commitment to service clients while enhancing sustainability. The first batch of over 160 Tigor EVs is expected to hit the road by Jan'20.



Mr. Shailesh Chandra, President – Electric Mobility Business & Corporate Strategy, Tata Motors Ltd. said, "Prakriti E-Mobility Solutions is a valuable partner on our path of social responsibility and environmental sustainability. We are confident that Tigor EVs will be a stellar addition to their company's offerings as it aptly addresses the requirements of longer range

applications and also provides higher revenue earning potential for our commercial customers. The induction of Tigor EVs will not only help the company achieve their business goals but also accomplish their objective of offering eco-friendly mobility solutions." Mr. Nimish Trivedi, Co-Founder & CEO, Prakriti E-Mobility Private Limited said, "Keeping in line with our commitment to offer ecofriendly mobility solutions, we are excited to begin offering Tigor EVs to Delhiites and are very proud to partner with Tata Motors in this journey. We strongly believe in the inherent benefits of

zero emission and lower operating costs of EVs will be the ultimate game-changer for commuting in the city. We plan to deploy 500 Tigor EVs in New Delhi and bring EV solutions closer to our customers."

Tata Motors is playing a leading role in proactively driving electric mobility in the country. The company's latest addition of Tigor EV comes with a range of 213 kms, certified by ARAI, offers an enhanced driving range, low cost of ownership, connectivity, comfort of a sedan and zero emissions.

## Mercedes Benz leases space in Bengaluru for India R&D Centre

**THE** world's largest luxury carmaker Mercedes-Benz has picked up 3.5 lakh sq ft of commercial space in Bengaluru's eastern peripheral area of Brookefield on a 15-year long-term lease. The company is expected to lease 1 million sq ft here, including the second tranche of 4 lakh sq ft next year, said people with direct knowledge of the development.



The transaction assumes significance as the automotive industry gets disrupted with autonomous, electric and shared mobility; Mercedes-Benz is expanding its research & development footprint here. The carmaker will be relying heavily on IT talent in and around India's Silicon Valley. "The company is expected to use this space for SAP delivery platform with allied research. After the first two

tranches, the balance 250,000 sq ft out of total planned 1 million sq ft will be leased later," said one of the people mentioned above. The Indian R&D set-up for Mercedes-Benz has metamorphosed from a tiny division with 20 staffers in Bengaluru a couple of decades ago into a powerhouse of over

5,000 engineers that is contributing significantly to new-age technology.

The company had already announced doubling its office space in India in 2018 as the scope of work expands significantly. The new place may house the Mercedes-Benz User Experience Team that is working on cutting edge artificial intelligence-based infotainment system for global markets, bulk of which is developed in Bengaluru.

Source: Economic Times

## J.D. Power Acquires Trilogy Automotive

**J.D. POWER**, a global leader in data analytics and consumer intelligence, announced the acquisition of Trilogy Automotive, the automotive software division of Trilogy Enterprises. Trilogy's SaaS-based enterprise lead management platform will be integrated into J.D. Power's Autodata Solutions division's original equipment manufacturer (OEM) digital dealer platform, expanding the capabilities and reach of its existing offering to better enable manufacturers and dealers to optimise retail lead management programs.

Trilogy Automotive provides enterprise level, SaaS-based automotive lead and digital management platforms, enabling OEMs and dealers to maximise the efficiency and effectiveness of their digital marketing spend. The platform improves coordination between OEMs, dealers and third parties, while generating real-time insights on consumer behaviour.

"Trilogy Automotive has built one of the industry's most powerful solutions for identifying high quality leads from the vast number of automobile shoppers, all while maintaining a seamless customer experience, continuity with OEM guidelines, and real-time insights for dealers and OEMs," said Craig Jennings, President of the Autodata Solutions division at J.D. Power. "By integrating Trilogy's capabilities with our existing OEM digital dealer platform, we will be able to create a robust suite of digital marketing platforms providing lead management, lead generation and digital management services to OEMs, Dealer Service Providers and Retailers."



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## SIAM's 4th Annual CSR Conclave Highlighted the Role of Auto Industry in Driving Sustainable Social Development

**SOCIETY** of Indian Automobile Manufacturers (SIAM) organised the 4th annual CSR conclave to highlight the contributions of the auto industry in driving sustainable development through various social welfare initiatives. The panels focussed on the theme of the event 'Social Empowerment, Sustainable Impact', and how CSR activities are essential in bettering lives of people through self-sustainable development projects. The conclave witnessed participation of key industry leaders to ensure inclusive development of the society, while protecting the ecology.

Initiating the inaugural session, Mr. Sushant Naik, Co-Chairman, SIAM CSR Group, National Head- Government Affairs, Tata Motors said, "The auto industry, which is a key driver of the Indian economy, has taken the motto of 'Building the Nation, responsibly' through SIAM." He also thanked SIAM for providing the platform to highlight the substantial work done by the auto industry for development and

welfare of the society. Mr Naveen Soni, Chairman, SIAM CSR Group and Vice President-External Affairs, Toyota Kirloskar Motor explained the value of the theme 'Social Empowerment, Sustainable Impact' in creating a sense of ownership among the stakeholders, "Creating social assets and instilling a sense of ownership about these assets within the community ensures self-



sustainability of the CSR projects. Our aim is to give back to the communities by promoting development and creating maximum impact through our initiatives."

Mr Arjun Ram Meghwal, Hon'ble Minister of State for Heavy Industries & Public Enterprises, Government of India, inaugurated the CSR Conclave and narrated the significance of social welfare activities as an integral part of Indian culture. He iterated the

importance of being mindful of the 3Ps- Perd (trees), Pani (water) and Plastic to protect our environment, "We must plant trees, conserve water and reduce the usage of single-use plastic through individual as well as corporate efforts. To that effect, I applaud SIAM's initiative of discontinuing the use of single-use plastics at their events. These are the small steps that need to be adopted and appreciated in order to preserve our ecosystem."

Dr Madhav Chavan, Founder, Pratham, recalled the early years of CSR in India and compared it to how it is practised today by the corporate sector, "The attitude of the companies towards CSR activities has matured." He also highlighted the importance of investing in the technical education through vocational programs related to auto sector, "Today, the onus must also be on promoting sustainable development in underdeveloped areas."

The event concluded with the presentation of 2nd SIAM CSR Awards.

## Valeo Opens Electrical Shoppe For High-end Components

**VALEO**, the global automotive technology supplier has set-up Valeo Electrical Shoppe in Bengaluru, an exclusive service facility for "High-end Auto Electrical Components" in the country. Through Valeo Electrical Shoppe, Valeo aims to provide reliable and superior quality service that is fast and cost-effective.

In the Indian automotive repair market, 65% of the electrical spare parts are refit rather than replaced. In this cost driven context, the quality of the original part and the corresponding services is key. Valeo is thus launching

"Valeo Electrical Shoppe" in association with its Channel Partner Santrupthi Sanco, the largest Auto Electrical Distributor in the country.

The evolution of auto technology and the resulting increase in the auto electrical content in high-end passenger cars and other vehicles has created a demand for skilled servicing of the auto electrical parts. Due to the high cost of these parts, both automobile dealerships and the end-customers prefer to service and refit the components rather than replacing them. Valeo Electrical Shoppe is the



result of acknowledgement of this evolving customer preference. At Valeo Shoppe, the customers will benefit not only from being guaranteed of genuine Valeo parts, but also from the defective part being serviced and brought back to the standard of a brand new one and delivered to them with a Valeo six-month guarantee. Valeo Shoppe will

be the first service facility in the country to provide warranty for reconditioned and remanufactured parts. This first-of-its-kind Valeo Shoppe will employ a team of technicians who are skilled in servicing high-end auto electrical products and a team of runners, who will pick the defective parts and deliver them after service to the customers at their doorstep. Valeo Shoppe promises a turnaround time of 5 hours for the serviced part to be delivered to the customer, from the time the call for repair is received.

Source: Auto Parts Asia

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## Ceratizit launches carbide, cermet grade biocompatible tools for medical industry

**THE** Ceratizit Group is now offering its customers in the medical industry 15, DIN EN ISO 10993-5-certified, non-cytotoxic carbide and cermet grades for biocompatible medical and dental tools. Testing for in-vitro cytotoxicity was carried out by the accredited testing laboratory Creamedix GmbH.

For more than 30 years, Ceratizit has been supplying the medical industry with both standard and customer-specific products based on its own specially-developed carbide grades.

### The customer saves both time and money

In the field of medical products, it's not only



performance that plays a role – patient safety is also key. Therefore, in the future, new EU legislation will require the certification of all medical products for biocompatibility. For Ceratizit's customers, the certification of non-cytotoxic carbide and cermet grades represents a monetary advantage against this background, as explained by Development Engineer Dr

Michael Dröschel: "With our materials that are already certified to DIN EN ISO 10993-5, we are removing an important obstacle in the certification of our customers' end products, thus saving them time and money".

### Wide product spectrum

With the new grades, CERATIZIT covers a wide spectrum of products.

Whether a standard stock product or a tailor-made blank, CERATIZIT supplies specific carbide grades for a wide range of applications in the medical technology industry: from tools such as drills and dental burs to needle holder plates, through to forceps and much more.

The products are suitable for a broad range of applications, such as bones, tissue and tendons as well as for titanium, metal alloys, and ceramics. Thanks to their many years of experience and know-how along the entire product chain from powder to the final product, CERATIZIT's experts can also offer the best advice on individual solutions.

## Hexagon's asset management solution helps optimise CMM performance

**HEXAGON'S** Manufacturing Intelligence division launched HxGN SFX | Asset Management, a cloud-ready software solution that helps manufacturers achieve operational excellence by offering easy access to real-time machine status and utilisation reporting.

The software unlocks the data typically siloed in individual coordinate measuring machines (CMM) to provide real-time insight into the performance, use and status of multiple CMMs across one or several sites. A web- and mobile-enabled dashboard provides real time visibility of the health, availability and performance status of CMMs, in single or multiple locations. Manufacturers can shift from managing assets

as a cost centre to optimising equipment profitability and value creation. And the data aggregated by SFX Asset Management can be used to pre-emptively schedule maintenance and identify sources of downtime.

Asset Management is cloud-based, information can be accessed anywhere from a PC, smartphone or tablet.

Asset performance management software plays a crucial role in

coordinate measuring machine (CMM) or for a set of CMMs, over various periods of time. An understanding of a CMM's OEE can help reduce spending on maintenance while achieving better overall machine performance and efficiency.



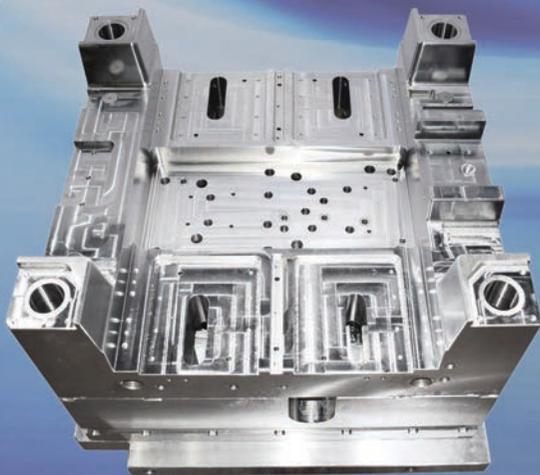
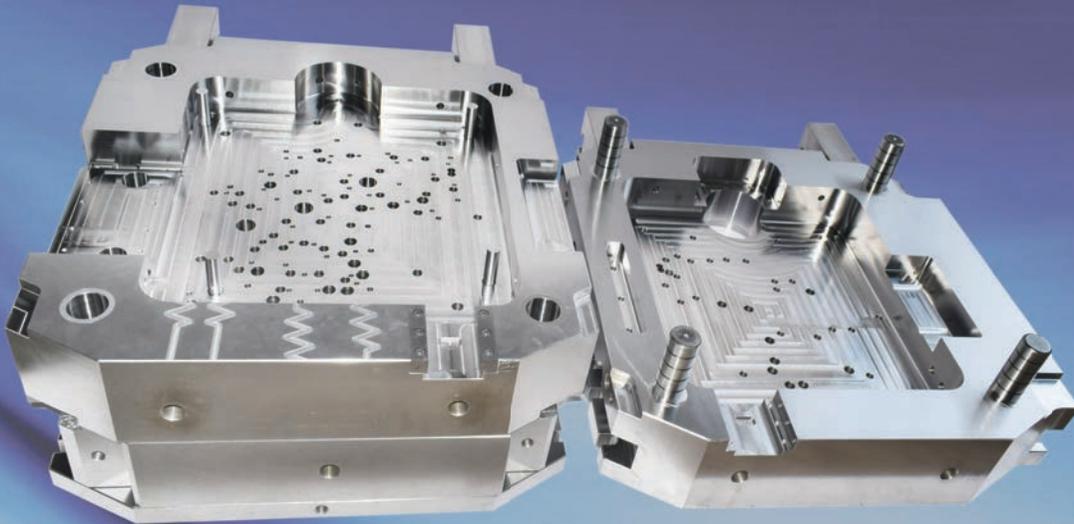
With HxGN SFX | Asset Management it is also possible to quickly identify which site has spare capacity and gain insight into how systems are used. And because SFX

optimising Overall Equipment Effectiveness (OEE). As its name suggests, OEE is a measure of how effective machines are. It can be calculated either for a single

"SFX Asset Management moves manufacturers towards the smart factory by giving them the real-time data that makes them more flexible, effective, responsive and competitive. Smart manufacturing is based on the most accurate and actionable information, and the first step is to reach a deeper knowledge of your machinery's operational fitness," said Scott Mahrle, SFX Asset Management Product Manager.

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## Collet for CoroChuck 930 maximizes pull-out prevention

**CUTTING** tool and tooling system specialist Sandvik Coromant has introduced a new collet for its CoroChuck 930 high-precision hydraulic chuck. Designed to suit Weldon shanks, the new collet features a mechanical locking interface to prevent tool pull-out or movement when producing expensive components and/or machining with challenging cutting data.



"Being 100% assured of zero pull-out for Weldon shanks when producing high value-added parts, such as aerospace frame and engine components, is paramount in the highly competitive manufacturing arena," says Mats Backman Global Product Manager at Sandvik Coromant. "Production engineers and managers are under constant pressure to minimize scrap and maximize bottom-line profitability. These thoughts were the driver for developing the new collet."

The mechanical locking interface acts between the collet and chuck, and between the collet and shank. Having confidence in no pull-out when both collet and chuck are locked enables increased productivity in heavy-duty applications. Further benefits include easy assembly into CoroChuck 930 chucks,

both slender and HD versions, while high run-out accuracy is assured with cylindrical clamping of Weldon shanks. In addition, coolant supply through the collet provides secure and reliable coolant delivery to the tool.

Ultimately, this new solution will benefit any machine shop seeking trouble-free machining in heavy applications. No pull-out or tool movement protects against the potentially sizable cost of reworking or scrapping an expensive component. Pull-out effectively changes the gauge length of the tool mid-cut, leading to the generation of features with incorrect dimensions or crash marks.

To provide an example of the potential gains on offer, a customer case trial saw CoroChuck 930 (featuring the new collet) used for a milling operation on a CNC turn-mill machine. The objective was to produce a twin-screw from 42CrMo4 alloy steel. At cutting data of 3220 rpm spindle speed, 1500 mm/min (590 in/min) feed speed, 10 mm (0.394 inch) axial depth of cut (nominal), and 20 mm (0.787 inch) radial depth of cut, the mechanical locking interface generated a stable process with no pull-out. In addition, productivity increased due to longer tool life.

## Dormer Pramet expanding options for efficient hole-making

**GLOBAL** cutting tool manufacturer, Dormer Pramet, has extended its range of Hydra replaceable head drills, launched a solid carbide drill for aluminum and added a new spotting drill.

Providing a highly cost-effective option for large diameter drilling, the Hydra program supports structural and general engineering applications. Its range of solid carbide heads – for steel, stainless steel and cast iron – are married together with a hardened steel body.

Existing body options – 3xD, 5xD and 8xD – have been expanded with a 12xD for deep hole applications and a 1.5xD option for improved rigidity in shallow hole and plate drilling.

Providing consistently high performance, even after numerous head changes, the range of bodies incorporates coolant holes to improve cutting efficiency and swarf evacuation. The exact fit between

head and body maximises tool rigidity for superior hole accuracy and precise tolerances.

Also, one body can fit multiple solid carbide head sizes, reducing inventory



requirements. In addition, heads can be easily changed without removing the body from the spindle, minimising machine downtime.

Meanwhile, Dormer Pramet has extended its Force hole-making assortment, with a solid carbide drill for all types of aluminum, from soft to abrasive grades. The flute and cutting geometry of the

new Force N range features a 32° helix angle. This helps to break swarf into small manageable chips and reduce exit burr, which can occur when drilling soft materials.

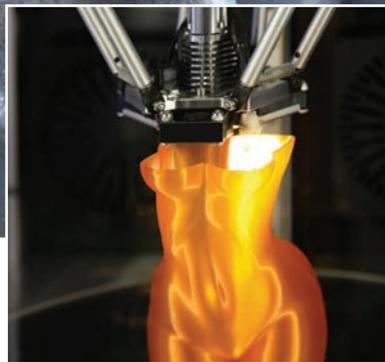
Offering high metal removal rates and reduced thrust forces to improve hole quality and productivity, Force N is available in 5xD and 8xD lengths with through coolant. Dormer Pramet's existing assortment of solid carbide drills includes Force X for use across a variety of materials and Force M for stainless steel.

Finally, Dormer Pramet has launched a new solid carbide drill for fast and accurate spotting. The R125 has a 150° self-centering point geometry, making it ideal for use with high performance drills with point angles around 140°. Providing consistent performance and repeatability in all materials, a multi-layer TiAlN coating ensures longer tool life, improved cutting-edge stability and wear protection.

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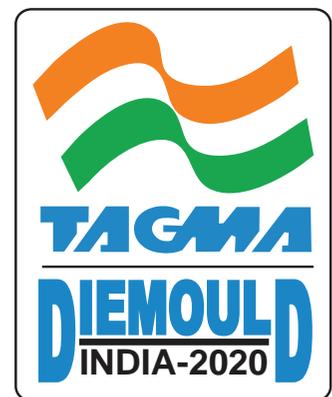
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# “Manufacturing must take precedence in economic activity”

It was during the 3rd edition of the VLFM summit that I had an opportunity to meet **Mr. Jamshyd N Godrej, Chairman & Managing Director, Godrej & Boyce Mfg. Co. Ltd. and Founder Member of TAGMA India**. During the event, he shared some great insights into the manufacturing industry. He stressed upon the need for significant policy interventions and a strong supporting ecosystem to achieve 25% of GDP target for the manufacturing industry and boost our economic growth. Excerpts...

■ **Nishant Kashyap**



today giving leadership to the Indian manufacturing community. Developed over the last 13 years to create a tectonic shift in the industry and defining the way manufacturing breakthrough is achieved in mind-set as well as through actions, it has emerged as a valuable resource reservoir for the sector.

VLFM/CSM has been contributing to India's manufacturing growth since its inception in 2007 and developed a community of more than 5,800 visionary leaders from the manufacturing sector through various programs, especially the Senior Manager's course which has made a huge impact.

Further, being a strong collaboration between industry, academia, and the government as well as with Japan International Cooperation Agency (JICA), VLFM/CSM Project is a unique co-operation project between India and Japan. It has helped to create a deeper understanding between the two societies and is contributing to the Government of India's strategic initiatives such as Make in India, Skill India, Startup India, and Digital India. This project is a symbol of good relations between India and Japan. The VLFM/CSM initiative was inspired by Dr. Abdul Kalam's encouragement and Padma Shri (2012) Prof Shoji Shiba's vision, passion, and dedication.

Q **Please tell us something about the VLFM initiative and its impact on the overall Indian manufacturing eco-system.**

To achieve India's manufacturing growth target (USD 1 trillion manufacturing economy by 2025-26), CII has embarked on a journey to build a pool of visionary leaders through its flagship program which is widely recognised as 'Visionary Leaders for Manufacturing (VLFM)'. Unique expertise in practitioners and managers at all levels including top management, are

Q **Can you elaborate on this year's theme- 'Building Sustainable Global Business Breakthrough Ecosystems'?**

Going forward, the VLFM/CSM project with the leadership and guidance of key stakeholders in government, academia, and the industry will expand to build Sustainable Global Business Breakthrough Ecosystems with a focus on strategic thrust areas. Unique capabilities will be built for forging win-win partnerships with Japanese businesses/institutions,

# In conversation With

Mastering Industry 4.0 & new emerging topics, developing leaderships for piloting & scaling up start-ups, creating a sustainable ecosystem community network, and developing capacity for sustaining the VLFM/CSM existing programs. This new project is built on the strong partnership and decade long successful engagement of stakeholders in VLFM/CSM.

The success of this project is a result of the dedication and collaboration of stakeholders in the industry, academia, and government as well as JICA. JICA has partnered in various infrastructure development projects in India but VLFM/CSM is a unique initiative of human resource development.

## **Q Tell us about the current state of the Indian manufacturing sector.**

Over the last decade, India's manufacturing sector had begun to emerge as a high growth sector and was expected to lift-off on the back of the Government of India's initiatives such as Make in India and Ease of Doing Business. However, these initiatives have not resulted in the kind of growth expected.

Though the government's efforts have helped improve India's position on the Ease of Doing Business Index, these have fallen somewhat short of results on the ground. Due to various factors, in the quarter ended September 2019, the manufacturing sector's capacity utilisation dropped to 68.9%, from 73.6% in the preceding quarter. This is far lower than the CU recorded during the global economic slowdown - 73.7% in Q1, 2008-09 and 80% in 2009-10. This reduction in capacity utilisation has meant a slowdown in capacity expansion by individual companies.

A rollback of corporate taxes is encouraging. To bring back momentum to the manufacturing sector, the Government needs to follow this up with a thrust to infrastructure development, reform of the labour laws, improvement in contract enforcement, and several such actions.

Also, manufacturing in India is still largely labour intensive, whereas the rest of the world has moved to more productive manufacturing methodologies. Even though India has a large consumer base, the country is still very heavily dependent on the import of goods as well as manufacturing technologies and know-how.

## **Q During the recently concluded VLFM event, you mentioned that manufacturing needs significant**

## **policy interventions and a strong supporting ecosystem to achieve 25% of GDP target. What kind of policies are needed in the ecosystem to achieve this target?**

The cut in corporate tax rates for new manufacturing companies is a welcome move and will make Indian tax rates comparable to Asian countries. We have requested the Government to extend this facility to partnership and proprietorship firms as well, as these are key players in the manufacturing sector.

As mentioned earlier, the need is to go in for factor market reforms. For land, we have recommended that the central and state governments create a pool of land and make it available to the manufacturing industry. Land records need updating and easier processes through computerisation to ensure quick transfers.

In labour reforms, the government is in the process of introducing 4 Codes which will amalgamate 44 central laws relating to labour. Fixed Term Employment which has already been implemented by the government should now be taken up by the state governments and they must also look at simplification of returns and procedures.

Ease of doing business would continue to remain on the table, especially at the state government level. Single window systems should be time-bound with automatic clearances after a point of time, and inspections need to be streamlined.

One important policy measure that would impart greater competitiveness to manufacturing would be bringing costs down. Currently, there are cross-subsidies on freight and power tariffs which could be rationalised so that manufacturing firms can produce at lower costs. There is also a need to make SMEs more competitive and we believe that initiatives like VLFM can infuse more leadership mentality among smaller enterprises.

## **Q It has been said that India needs to develop breakthrough ecosystems that nurture global businesses to achieve a USD 1 trillion manufacturing economy. According to you what challenges will India face to achieve this target? How can we overcome those challenges?**

The Indian manufacturing sector is highly fragmented, with the overwhelming number of enterprises being in the unorganised sector. This detracts from competitiveness down the supply chain. It is important to bring in scale and lift productivity across these smaller enterprises. The government needs to

**Though the government's efforts have helped improve India's position on the Ease of Doing Business Index, these have fallen somewhat short of results on the ground. Due to various factors, in the quarter ended September 2019, the manufacturing sector's capacity utilisation dropped to 68.9%, from 73.6% in the preceding quarter.**



provide some incentives for the growth of enterprises such as plug and play facilities at industrial parks, logistics, and infrastructure facilities among others.

One important factor would be to encourage the technology adaptation of enterprises. Tool rooms, competitiveness development centers, common facilities, availability of credit for technology up-gradation, and skill development will be critical to this endeavour. The government may consider a cluster-based approach where clusters can be provided with common effluent treatment plants, skill development centers, and tool rooms.

A third key criterion for boosting manufacturing is integration with global supply chains and building exports. Export competitiveness should be a significant objective and we have seen the government announce policies such as refund of state-level duties etc. More such measures will be needed to boost exports.

**Q How can India make a shift from a service-driven economy to a manufacturing-driven economy?**

We must understand that for India, making a shift from a service-driven economy to a manufacturing-driven economy is imperative. As a developing nation, we cannot have a services sector dominated GDP. This will require changing mindset from small m to BIG M at the macro level – i.e. manufacturing must take precedence in economic activity.

Manufacturing is a complex system that involves not only people who do the manufacturing and the planning but the entire ecosystem of technology and machinery and interactions between people and machines. Most importantly manufacturing, apart from meeting the needs of consumers also meets the strategic direction of countries and companies. It thus involves many systems and subsystems and the influence around it is huge.

In this backdrop, making a shift from a service-driven economy to a manufacturing-driven economy is not easy; it requires a concerted effort and collaboration

of the key stakeholders i.e. government, industry, and academia to make this shift. In large measure, the shift will require far-reaching policy reforms. Also, industry-academia collaboration can reduce the country's dependence on import of technologies as well as goods.

Globally there are several systems and concepts in manufacturing such as Business Excellence, TQM, and TPM among others. These are important, but it is also important to synthesise these and bring them together to transform manufacturing. Programs such as VLFM are building the leadership skills to synthesise not only these systems but also undertake R&D and innovation and achieve breakthroughs in product development.

Given that India's manufacturing sector is dominated by SMEs, an efficient and globally relevant supply chain holds the key to making India a manufacturing-driven economy. Therefore, larger companies, whether OEMs or Tier 1 need to drive breakthroughs in their supply chains while enabling them to adopt these practices.

Though Indian manufacturing has gained much ground over the last decade or so, we still have a long way to go to make it the primary driver of the country's economic growth.

**Q What should Indian SMEs such as mould makers, component manufacturers, machine tool suppliers do to match the competition?**

SMEs, mould makers, and component suppliers must improve the efficiency of their manufacturing processes. Also, they must bring focus on the quality of products.

Currently, they are largely dependent on OEMs and large buyers who educate them. SMEs must work in collaboration with their peers to not only learn from each other but also maximise output from their system by forming clusters. This will also help them sustain growth in the long term.

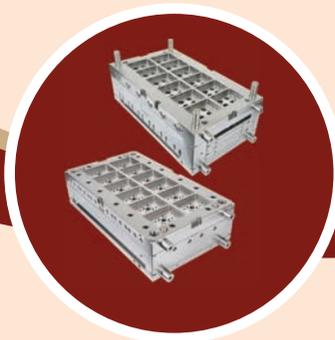
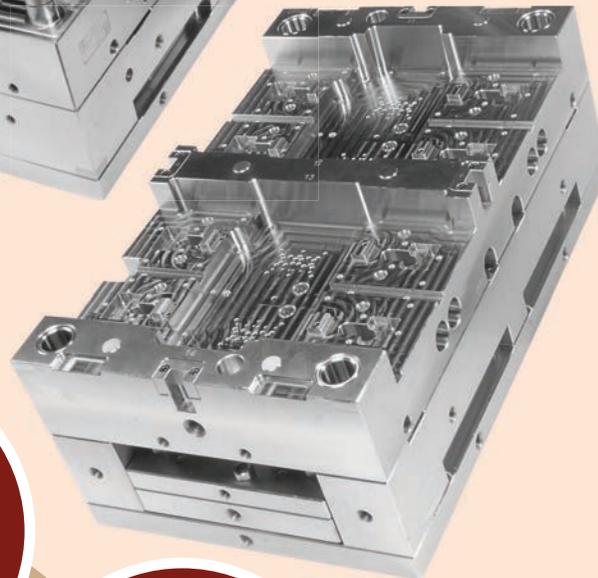
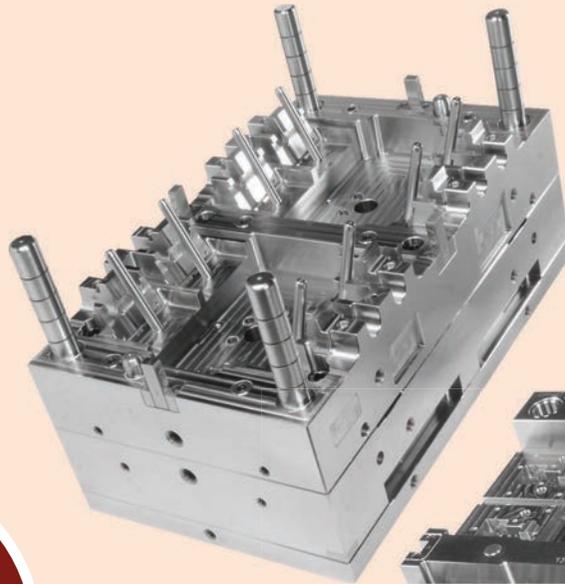
**Q In this age of modernisation and smart technology, are Indian manufacturers at par with their global counterparts in terms of technology adoption?**

At larger enterprises, there is immense modernisation and alignment with new technologies that are on par with global manufacturers. The challenge is to disperse this to smaller enterprises. Large and small enterprises must work together to ensure greater adaptation to new technologies. 🌈

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# Shop floor management: A necessity for better organisational standard

Managing a shop floor is not an easy task. Employees make mistakes, equipment breaks, jobs ship late, wastage piles up. On top of that, there is the constant demand to reduce costs and increase quality. This situation can be better handled with the right shop floor management in place.



**Debarati Das**

**A** manufacturing plant constitutes a series of operations to produce a desirable product and meet customer's requirements by meeting the required quality and functionality. However, all this is not possible if you don't have a detailed shop floor management plan in place.

Shop floor management is all about preplanning, planning, staffing, directing, monitoring and controlling activities that enhance shop efficiency.

## In Focus

However, while most manufacturers assume it to be a small element of the entire process, it should however be considered as the most important step of any manufacturing process that defines the overall success of the operation.

Going by the trends being followed by global manufacturers, shop floor management can be broadly categorised into three categories: Digitisation, green manufacturing and safety in work place.

Let's take a look at each of these categories in detail.

### GREEN MANUFACTURING

A few years back, Green Manufacturing was the buzz word, but today it is a necessity. With increasing level of environmental damages, the onus is upon the manufacturers to embark upon environmentally friendly manufacturing practices. Hence, Green Manufacturing practices are on the rise. Furthermore, incorporating eco-friendly initiatives into manufacturing processes also ensures reduced cost, higher efficiency and also boosts organisation's reputation by positioning the company as a responsible corporate.

Companies are now seeking ways to become a part of the circular economy and ensure ways to keep resources as long as they can, extract maximum value from them, then recover and restore materials wherever possible — minimising waste and shifting the focus to renewable resources.

Some of the benefits of manufacturers can see from an investment into green manufacturing practices are:

- ▶ **Cost savings:** Businesses are incorporating forward thinking approaches to their manufacturing processes to ensure cost savings. Machines and equipment are becoming much more energy-efficient and can have a lasting impact. Much of the equipment found on an average shop floor largely consist of legacy equipment that can be holding a business back from reaching their green manufacturing goals. An investment into new, energy-efficient equipment could be a fantastic way to cut costs over the long-term. Apart from equipment used in manufacturing process, there are various other smaller ways a manufacturer can reduce cost. For instance, manufacturers can curb their energy costs by installing smart lights that can sense the amount of natural light throughout a facility and only illuminate those areas that need it most.
- ▶ **Reduced Material Use:** Manufacturers are using reverse logistics plan to reduce the amount of raw



materials needed to produce new components or products. Reverse logistics is a process that ensures once a product reaches the end of its life-cycle, it will be returned to the manufacturer. Once the manufacturer takes position of the used product, they can breakdown those used products and secure the remaining raw materials. Making use of materials that would normally be thrown away can mitigate what the manufacturer needs to spend on raw materials to make new products. This has a great impact on the amount of waste that they produce. And, instead of products ending up in land-fills, manufacturers can ensure all the materials can be used again.

- ▶ **Carbon Footprint:** Focusing on green manufacturing and business practices will lead to a reduction in carbon footprints. This can have important tax implications and even result in receiving incentives from the government.
- ▶ **Improved brand image:** Along with the manufacturers, the customers have also begun to show their concern towards environmental damages and hence are increasingly opting for manufacturers who focus on green and environment friendly manufacturing practices. A manufacturer's commitment to creating a green business can greatly improve their marketing effort. As manufacturers continue to invest into new technology that can streamline processes, machines that help reduce energy consumption and a continued focus on lean manufacturing, the industry continues to become greener every day.

Green manufacturing is a continuous effort by all the industries. However, the good news is that among various industries, die and mould industry is one of the most green and sustainable industries. Die casting

embodies the three R's of environmental sustainability—reduce, reuse and recycle.

**Reduce:** Die casting uses a unique, energy-saving metal casting method. Some casting processes require a sand mould suitable for one-time use only. However, die casting uses moulds up to 100,000 times before replacement which is equivalent to a total savings of 700,000 percent. This way, the die casting process reduces the amount of energy consumed, decreases its carbon footprint and secures the process as green and sustainable.

**Reuse:** Die casting can be reused and repurposed. Once the die reaches the end of its lifespan, it's never actually thrown away or wasted. Instead, the dies are shipped to other mills that repurpose them. They can also be recast into an entirely new die. This sustainable element of die casting highlights its minimal processing needs and use of new materials.

**Recycle:** Most die casting uses aluminum, a metal that is easy to recycle, energy-efficient and cost-effective. Almost 95 percent of die castings made from aluminum are crafted entirely from recycled materials. This recyclability helps keep costs down while reducing carbon footprints and preventing wastage.

However, there is always scope for improvement and the die and mould industry needs to constantly work towards making their processes greener and sustainable.

## SAFETY IN WORKPLACE

Since manufacturing shops are prone to accidents, it is important to make safety a priority to ensure the best working environment for employees. Most shops have a safety plan in place that adheres to basic OSHA regulations. However, that may not be enough. Here are some of the methods adopted by various organisations to help improve safety on their shop floor:

- ▶ **Establish a Culture of Safety:** Establishing a culture of safety in the shop is a great way to get people to care about safety and make it a priority. This culture needs a top-down approach which starts with the top management and is then adopted by front-line workers. Ensuring a culture of safety means making it a mindset that safety is everyone's responsibility.
- ▶ **Avoiding Fatigue:** Fatigue is a major cause of accidents and injury in the manufacturing industry. One of the biggest contributors to worker fatigue is monotonous work. Small

breaks are pertinent to break the monotony. A shop floor should consider building rotations into the processes to avoid one person performing the same repetitive task all day. Breaking up a monotonous process will help prevent fatigue and keep workers more active and engaged, making them less likely to have an accident.

- ▶ **Create Safety Checklist:** Apart from the basic OSHA regulations, manufacturers should also develop a safety program that addresses the specific needs of the shop. This can be done by identifying every potential safety risk in your shop and create rules that will prevent these issues. Creating clear checklist and procedures for different scenarios will simplify safety precautions and make employees more likely to engage.
- ▶ **Invest in Regular Training:** It is important to regularly train the employees on safety measures. Companies should also invest in regular updates to make sure that employees are up to date on any new changes to the safety program.
- ▶ **Using Smart solutions:** Smart manufacturing and IoT can greatly improve safety on the shop floor. These advances in technology allow you to simulate manufacturing processes, collect data, analyse them and allow technology to predict failures way before any damage occurs. This helps a company to keep their machineries and systems in order to avoid any untoward incident in the first place and thereby improve safety procedures.
- ▶ **Encourage Clean and Organised Workplace:** A messy workstation has greater chances of accidents. Enforcing clean and organised workplaces minimise the risks. Furthermore, recognising best practices and rewarding the employees who adhere to the safety standards, would in turn boost the environment of safety in the workplace.

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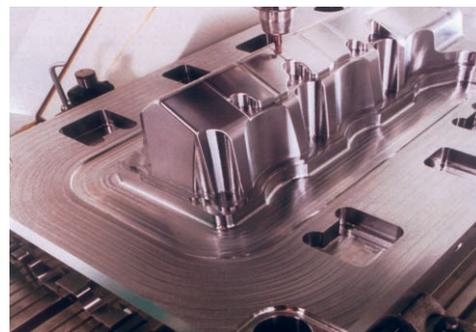
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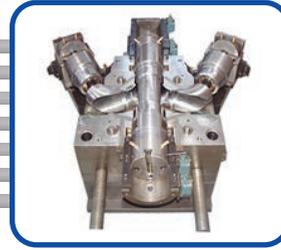
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# In Focus

manufacturing excellence. But that's not enough anymore. Machines need to be smarter to achieve the goals of revenue growth, operational improvements, shop floor efficiency and quick launch of new products and services.

Today, manufacturers are increasingly using analytics, Business Intelligence (BI), quality management, machine learning and real-time monitoring to improve manufacturing strategies. Studies suggest that all these platforms enable manufacturers to operate from an integrated data model that capitalises on legacy systems while providing more rigorous analytical tools.

- ▶ **Smart manufacturing:** As market competition heightens with customer-driven pressure to excel in quality, smart digital applications will play a pivotal role in getting right the first time, shorter manufacturing cycle, assuring utmost quality and avoiding machine failure with predictive analysis. ERP systems will be a significant addition to manufacturing line to ensure quality management and compliance on shop floor.
- ▶ **Smart supply chain:** Not just manufacturing but having a flawless supply chain is also of utmost importance. Many manufacturing supply chains are evolving into intelligent networks with real-time track-and-trace to provide greater delivery accuracy and quality metrics than ever before. Applying analytics, BI, quality management and track-and-trace applications to supply chain problems are together creating knowledge sharing networks. These cloud-based applications create a single unified platform to integrate manufacturers with suppliers and customers to enable greater speed and scale.
- ▶ **Real-time monitoring:** Real-time monitoring is the next big thing to create stream of data that provides insights into product quality, machine performance and machine yields. These data and holds the answer to solve most of the complex manufacturing challenges that manufacturers face and improve business.

- ▶ **Manpower management:** Chronic labour shortage and lack of high skilled workforce availability in manufacturing is an issue that every industry faces. And this is coupled with increased demand for high volume parts and assemblies. The solution to this shortage lies in the adoption of robotics embedded with smart applications.

- ▶ **Revolutionising manufacturing:** IIoT holds the answer to revolutionise many aspects of manufacturing operations including real-time production monitoring, improving the accuracy of key metrics including Overall Equipment Effectiveness (OEE), production yield rates and production efficiency. Greater IIoT adoption will help manufacturers to see measurable business gains.

- ▶ **Shop floor control:** There is an increasing trend in using Shop Floor Control systems to evaluate materials status, machine usage, labour and other resources to report on work in process. They also enable the accurate management of activities, resources and work flows inside the plant. This type of data can be useful to manufacturing owners and supervisors for improving overall shop floor operations, particularly with an interactive, real-time Shop Floor Control system. Shop Floor Control system can also increase worker productivity, reduce throughput and cycle times, and give operators access to their own work process so that they can meet and exceed their targets and goals. Furthermore, Shop Floor Control has the following benefits:

- ▶ Total visibility and control over plant environment
- ▶ More efficient, streamlined operations and lowered manufacturing cycle times
- ▶ Data-driven, higher quality production
- ▶ Greater supply chain visibility
- ▶ Immediately actionable, proactive data and analytics when employing a real-time SFC system
- ▶ Empowered supervisors and managers
- ▶ Increased operator motivation, productivity and performance
- ▶ Improved accuracy in reporting on resource status, work flows, inventory and human resources
- ▶ Accurate updates on labour and machine usage
- ▶ Improved scheduling and planning
- ▶ Improved valuation and costing capabilities
- ▶ Reduction of excess labour costs
- ▶ Reduction of payroll computational errors
- ▶ Reduction of work in process inventory

Hence, incorporating these three elements of shop floor management will greatly increase the efficiency of the manufacturing process, make the organisation greener and also help make shop floors a safer place to work in. 🌈





# “Green Manufacturing is no more a buzz word, but need of the hour”

**Khuzema Gangerdiwala, Associate General Manager at Godrej & Boyce Mfg. Co. Ltd. talks at length about the measures that government, large corporations and small and medium scale businesses should collectively take to make manufacturing greener and more sustainable.**

### **Q Your views on India's position in green manufacturing?**

Green manufacturing involves transformation of industrial operations in three ways: using Green energy, developing and selling Green products and employing Green processes in business operations.

Green manufacturing in India is at the take-off stage. While Indian industries have understood the importance of sustainable development and growing number of industries have started implementing Green Manufacturing process due to increased concerns around global warming and depletion of natural resources, there is substantial scope on both the policy front and its adoption in the areas of Green products and Green processes.

On the other hand, medium and small size industries are yet to embrace Green Manufacturing. If supported well by Government and Large industries, it can help India meet its 2030 sustainability goals.

### **Q What are the new trends in green manufacturing and waste management?**

Technology has seen major changes in past few decades, which has led to development of

technologies related to reducing the consumption of resources, especially energy resources. New concepts like Life Cycle Assessment of product, enables manufacturer to decide what kind of material to be used, from where to source the material, type of manufacturing process to be deployed, packaging material to be used and how will product impact the environment at the end of its life. By acquiring all this information at the design stage itself, manufacturer can design a product that can be environment friendly throughout its life cycle.

IoT is the new buzz word today in manufacturing, if utilised properly, IoT can provide crucial information and data required to reduce consumption of resources. Additionally, now a days all major companies are deploying energy management system at shop floor to identify wastages and opportunity for improvements.

Another emerging trend in waste management is upscaling of waste, which is nothing but transformation of by-products, waste materials, useless, or unwanted products into new materials or products of better quality and environmental value.

### **Q What are the other benefits of going green?**

Each sector has different motivation for adopting Green practices. Some take it up owing to regulatory compulsions (example: power), while others see it as an opportunity to build a stronger brand with consumers (example: retail). Steel manufacturers

have adopted Green initiatives to stabilise rising energy costs, while automobile companies have seen it as an opportunity to launch electric and hybrid cars to meet increasingly stringent emission regulations. However, there are some common advantages listed below, which can be accrued by any company implementing Green Practices irrespective of sector.

- ▶▶ **Operation Cost Reduction:** If planned out carefully, many green changes in the workplace can help reduce the manufacturers overall operating costs. Things like solar and wind energy, along with energy efficient equipment and machinery, can help greatly reduce money utility bills. In addition, green manufacturing strategies, such as recycling and going paperless can save on supply costs. When looking at the bottom line, green manufacturing investments can provide a great ROI.
- ▶▶ **Green Corporate Image:** With so many consumers today concerned about the environment, making the choice to go green can help boost the manufacturer's reputation. Companies can easily rebrand their green manufacturing image to entice a whole new customer-based to their goods. This can certainly help to increase the manufacture's overall sales.
- ▶▶ **Innovation:** Sustainability can also ignite innovation. For example, if you challenge your engineers and operators to reduce material scraps or recycle more waste during the manufacturing process, it often leads to additional ideas for operational improvements.
- ▶▶ **Societal Impact:** In addition to helping your company's profitability, your actions can make a real difference. By implementing changes, you will have a smaller carbon footprint and reduce the number of toxins released into the atmosphere. Future generations will ultimately benefit from improved air and water quality, fewer landfills and more renewable energy sources.

#### Q **What support does Government and association like CII provide to Indian SMEs for environment-friendly manufacturing processes?**

Government of India has launched schemes like Sustainable Finance Scheme for funding sustainable development projects that contribute energy efficiency and cleaner production. The scheme develops the entire value chain of energy efficiency (EE)/ cleaner production (CP) and sustainable

development projects that lead to necessary improvements in EE/ CP/ sustainable development in the MSMEs that presently not covered under the viable financing lines of credit.

Commerce ministry has also launched the Technology Acquisition and Development Fund (TADF) under National Manufacturing Policy. The fund will help the Micro, Small & Medium Enterprises (MSMEs) acquire clean and green technology at affordable cost across sector.

Furthermore, GoI, has come up with National Motor Replacement Program which aims to provide IE3 motors to the industries through innovative financing model. Under this scheme, industries can purchase IE3 motors at much lower price than the retail market price including an extended warranty of 3 years. CII is creating awareness regarding Green Manufacturing through various initiatives like Green Co & Green Pro certification programs.

#### Q **What techniques should Indian die mould makers adopt to reduce waste and practise more environment-friendly processes?**

A simple three-step implementation framework can be followed covering all three areas of action – Green energy, Green products and Green processes.

- ▶▶ **Green Energy:** Companies with high energy consumption need to shift towards using cleaner energy and plan for increasing the efficiency of its use. Setting up small solar power generation units and using energy efficient practices, such as installing LED lighting or better use of daylight in building design, can go a long way towards reducing the energy intensity of operations.
- ▶▶ **Green Products:** Companies should conduct an evaluation of their products based on three criteria: how Green are the resources and energy being used, how Green is the product during the lifecycle of its use, and how Green is the manufacturing process. By quantifying these parameters, companies can assess the Green value of their product offering. In the planning stage itself, companies should set out targets for this metric, and then periodically assess progress against those targets.
- ▶▶ **Green Processes:** Companies need to gradually redesign business processes used in different parts of the value chain. This could include shifting to more sustainable manufacturing options, making changes towards reducing waste, increasing recycling, reusing resources.

# Leaders Speak

- ▶ **Communication:** Along with well thought-through implementation, a well formulated promotion campaign for Green initiatives is equally important to fully leverage their potential benefits. Customer education campaigns about Green product offerings and the Green orientation of the firm in terms of energy and processes, can translate into increasing revenues

**Q What kind of support and policy implementation are needed from the Government to push the green manufacturing initiatives?**

Today, large Indian corporations have started implementing Green Manufacturing concepts. The real challenge is in implementation of Green Manufacturing practices in MSME. Certain barriers which hinders Green manufacturing are;

- ▶ *Lack of Information* – MSME don't have sufficient information regarding new technologies available in the market.
- ▶ *Initial Cost* – Lack of funds to invest in new technology or more efficient equipment's.
- ▶ Other issues like of poor infrastructure, lack of trained human resources etc. Government should set up portals, forums, seminars and exhibition to

create awareness for the use of new technologies and how its implementation will help industries. Also, government must provide loans & funding at subsidised rates for investment in Green technology to help reduce the financial burden of small industries.

Apart from government, large industries must also go out of their way to help the MSME suppliers. Create awareness on concepts of Green manufacturing and share technical know-how.

**Q Your message to Indian SMEs.**

I do believe that going green & adoption of green technologies by the industries will improve operational efficiency and reduce operation cost. This will further help in overcoming poverty and deliver improved livelihoods for the present as well as future generations.

While growth is necessary for a rapidly growing economy like India, we also need to focus on environmental issues facing the country. The manufacturing sector must use energy and resources efficiently and minimise the generation of waste. Green Manufacturing is no more a buzz word, but need of the hour. 🌿



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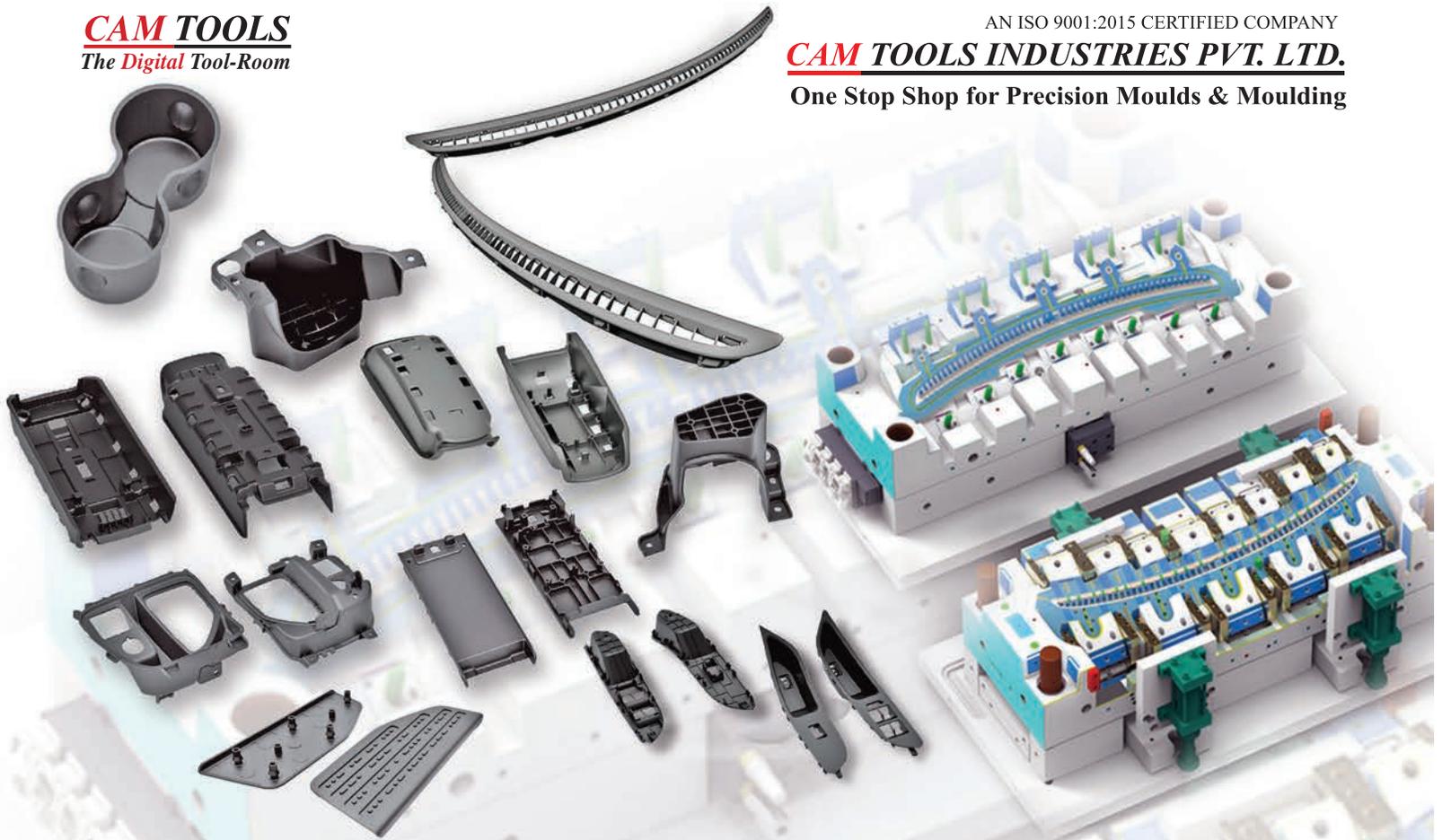
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# Liberate Year-End Planning From Outdated Constraints and Rigid Expectations



Year-end strategic planning is not what it used to be. The annual exercise has become an outdated, obligatory homage to the bygone era of cyclical goal setting and arbitrary targets. Yet, manufacturers are stuck in this rut. As the calendar year wanes, plant managers and department leads become tethered to their desks, creating reports and forecasts by plucking numbers out of the air to plot on charts. Fortunately, there is a better way.

## Defining the Issues

**Static views.** A modern plant which leverages digital technologies also needs a modern process for creating a highly flexible strategic plan. The old-school approach to setting goals and allocating capital funds is highly restrictive. An annual set-and-done plan does not allow for the continuous evolution and proactive initiatives that modern practices demand. However, conditions change, competitive opportunities arise, and innovations disrupt the market landscape. Manufacturers need to be able to course-correct.

**Accuracy and Reliability.** When multiple disparate systems are deployed across an organization, data can become distorted or skewed. CFOs are hesitant to trust the analysis and cost justifications provided, fearing one layer of incorrect data will create cascading inaccuracy.

**Rapid Change.** Agility is essential for keeping pace with the astounding rate of change in manufacturing today. Staying open to breakthrough ideas and being willing to shift priorities are the hallmarks of companies defining Industry 4.0. Plant management is one of the areas in which innovation and digital concepts are most influential, generating meaningful bottom-line impact. This is where automation, robotics, the Internet of Things (IoT), machine learning, and predictive analytics can be transformative. Future innovations, currently unforeseen, may require mid-year action.

**Collaboration.** Many digital concepts require investments that would fall under plant assets, making the job of the plant manager more strategic than ever. Adding sensors to equipment, automating processes, leveraging robotics, and deploying IoT concepts all require equipment upgrades and IT networks for communicating and monitoring the assets. The combination of smart machines and IT solutions may make budget allocation and stewardship more complicated. Teams will need to collaborate on ideas—plus share the heavy lifting during roll-outs.

**Accountability Required.** A carefully thought-out plan is required for sizable investments to ensure that the Return on Investment (ROI) is achievable and that steps for supporting and measuring results are put in place. Alignment with corporate goals, the overall intention, and accountability must be documented prior to commitment to new investment.

**Limited Resources.** The stakes are high as companies and the stakeholders are hungry for growth. However, resources are limited as economic optimism has had a slow reboot, fuelled by tax reform, but dampened by uncertainty from tariffs. Plus, existing staffs are stretched thin as the shortage of skilled workers is leaving several positions unfilled in plants. Because of all of this, risk tolerance is low. Manufacturers simply cannot afford any false starts or fruitless detours.

## How Can Technology Help the Planning Process?

Fortunately for plant managers, modern Enterprise Asset Management (EAM) solutions, with predictive analytics and asset assessment capabilities, can help forecast future trends, provide data for informed decision-making, and leverage asset assessments to help plan smart capital investments. Most importantly, network connectivity and real-time visibility will help managers stay on top of minute-by-minute issues and assume a proactive approach to preventing downtime.

**Holistic View.** With fully integrated systems in place, plant managers can be holistic in their strategies and budget recommendations. With easy access to the big-picture view, from Facility Condition Assessment (FCA) to Remaining Useful Life (RUL) and Estimated Replacement Cost of assets, managers can anticipate where critical investments may be required. Thanks to predictive analytics, costs of asset maintenance can also be projected with accuracy, along with necessary resources, such as parts and technicians.

**Reliability.** Running the entire organization, from financials to asset management, with software from one vendor, will help eliminate the discrepancies that can come from disparate systems. This significantly improves data accuracy, giving top executives the confidence they need to make decisions.

**Data-Based Decisions.** When strategizing, plant managers must be able to access data to analyze the cost of possible downtime and upgrade-vs-replace decisions. The goal is to determine what investment options will provide the highest level of reliability, and the least amount of disruption to operations. A modern EAM solution can be used to conduct asset assessments to help monitor asset condition, regulations and compliance issues, and the asset's value to the organization. This means more than replacement costs and will require some up-front research and data input. Nevertheless, creating an asset assessment system will provide the insights



needed for ongoing proactive decisions and timely attention to issues.

**Predictive Analytics.** Today, innovative Business Intelligence (BI) solutions contain powerful predictive capabilities, using algorithms and data science to identify patterns in data points and project next likely outcomes. Users can explore “what if” scenarios and obtain forecasts of likely costs and likely demands.

**Cash Flow.** When the EAM and Enterprise Resource Planning (ERP) or financial solutions are fully integrated, it is easier to analyze financial impact of maintaining the infrastructure and investments in assets. This glimpse of future demands can be juxtaposed against projected cash cycles considering forecasts for customer demand. Executive level decision-makers can prioritize spending and plan major investments to coincide with cash flow availability.

**Priorities.** An asset assessment program allows managers to identify time-sensitive critical issues which are high priority and demand immediate response, including ones which may incur costly fines. Managers should be alert to such issues as: ADA accessibility, building code compliance, OSHA or EPA mandates, and workforce or public safety issues.

**Ongoing Course Correction.** One of the most important considerations for annual planning is to phase out the annual component and build in frequent check points. Planning for monthly or

quarterly reviews of asset conditions and changing market demands, will help the organization stay in-tune to fast changing trends and detect major influencers in a timely manner.

### Final Take-Aways

Although managers in plants and factories have been following the annual year-end wrap up and new year planning for decades, the process is largely outdated. Organizations—and their facilities—need to be more responsive to the changes brought about by innovation and digitization. To truly take advantage of new technologies, like IoT and predictive analytics, companies need to build strategic systems that tune in and respond to data early and often. Continuous strategic planning is the new requirement for the digital enterprise. Fortunately, modern EAM solutions support this new demand—and new mindset. 🌈

### About Author:

#### Ranga Pothula



*is the Managing Director and General Manager for Infor's India Business Unit. At Infor, his responsibility is scaling IBU operations by sharpening focus on global delivery, servicing offerings, technology developments, and strengthening customer and partner relations. Ranga has been at Infor for over two decades. Having been at the helm of both R&D and CoE services across multiple products, under his charge, he has been leading the growing global delivery services operations in India, the Philippines, Egypt and Poland over the past four years.*



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# Third VLFM Summit highlights the challenges and opportunities in the Indian manufacturing sector



In a highly dynamic and evolving global business environment, India needs to develop breakthrough ecosystems that nurture global businesses to achieve a USD 1 trillion manufacturing economy. Diverse stakeholders need to work in lockstep with each other towards a bigger vision, build new business models, develop new skills and adopt contemporary Industry 4.0 practices & digital technologies. Against this backdrop, Confederation of Indian Industry (CII) organised the 3rd Visionary Leaders for Manufacturing (VLFM) Summit with a theme “Building Sustainable Global Business Breakthrough Ecosystems” on December 21, 2019 in Mumbai.

Mr Jamshyd N Godrej, Chairman & Managing Director, Godrej & Boyce Mfg. Co. Ltd during the 3rd VLFM Summit 2019 in Mumbai highlighted that the Manufacturing sector needs to assume the role of a driver in boosting economic growth in India. He said, “We are majority service based economy. However, Service sector may not be able to sustain economic growth alone for a long period, if not accompanied by the strong manufacturing sector growth. For manufacturing sector to increase its contribution to 25%, policy interventions are needed”.

He added, “Manufacturing has to take precedence to the economic activities. Manufacturing is a complex system and it has to be supported by entire ecosystem of technology, modern machines, people, processes etc. Manufacturing is an activity which meets the need of consumers. Country

# Event Report

like India has to move from traditional farming to more 'Productivity Manufacturing'. We need to use manufacturing to boost economic growth and be integrated economically with strong policy".

He mentioned, "We are still more dependent on importing the technology and know-how, this needs to be changed". He gave example of China and said, " China used the manufacturing very effectively and for last 30-40 years, it moved two generations out of poverty by focusing on labour intensive manufacturing. Now it has moved to highly intensive technologies".

For India to move forward, he said, "We have to learn from everyone in the world and have to be integrated and lead in the Asia region". He concluded that "We are all committed to manufacturing and work towards achieving the goal. This VLFM program has helped the companies to understand it better and deeper. We need to disseminate this concept and idea to many companies especially in our own supply chains".

Further, speaking on this occasion, Mr Kengo Akamine, Senior Representative, JICA India said that he is very happy to see the progress of the VLFM Project which is one of the key project under JICA India. He mentioned, " I am very impressed by the enthusiastic and very active participation in the program, as I had first-hand experience yesterday in the program." He further elaborated about JICA and activities in India, especially about the two metro projects in Mumbai which will change the traffic situations in Mumbai in coming years. He said "India is a valued partner for Japan and also the largest recipient of Japanese ODA. We are very happy to support this program and also look forward how we can address many larger issues such as air pollution with collaboration with academia and Industry."

Dr K P Karunakaran, Institute Chair Professor, Department of Mechanical Engineering, IIT Bombay highlighted about the technological breakthroughs in manufacturing sector. But he mentioned that "As some new technologies come, we have our inertia to accept and take advantage of new technologies such as additive manufacturing." He gave examples of natural process and creation to make a point



that additive manufacturing is in a way taking us more towards the natural way of manufacturing. He said, "Manufacturing by 3D Printing is much closer to natural process as nature is also creation by addition."

Mr K Nandakumar, Chairman & Managing Director, Chemtrols Industries Pvt Ltd thanked Mr Jamshyd N Godrej for his visionary leadership and commitment for the VLFM Program and requested for his leadership and support for the new project. He also thanked Indian Government and Japanese government especially JICA for continuously supporting this initiative. He also thanked all the participants for association to the program.

The national "Visionary Leaders for Manufacturing" project has over the past thirteen years been able to build an ecosystem and leadership skills that helped senior leaders steer their companies to a new growth curve.

The Summit was a platform to outline how the foundation built by this National Project can be harnessed towards this objective and the role that the leaders skilled under the various VLFM programs can play. At this highly successful 3rd VLFM Summit, Industry thought leaders shared their vision and their journeys of building ecosystems to nurture global businesses and inspire business leaders towards achieving that vision. Many VLFM alumni and other stakeholders deliberated upon and bring forth significant elements that could help India build many more such ecosystems and propelling India into a manufacturing led economy. More than

**"Manufacturing needs significant policy interventions and strong supporting ecosystem to achieve 25% of GDP target and boost our economic growth"**

**Mr Jamshyd N Godrej,  
Chairman & Managing Director,  
Godrej & Boyce Mfg. Co. Ltd.**

## VLFM Programmes

**The VLFM Senior Manager's course** enables managers with 10-15 years of experience to attain leadership skills. The programme focuses on transformation through mindset change and skill building. Three transformation principles of VLFM are: 1) See manufacturing beyond Big 'M', leading to Industry 4.0, 2) Build skills, not only learn concepts and 3) Change mindset, not only deploy tools and techniques

**The 1000 Visionary SME Programme** under the VLFM umbrella drives the transformation from the final assembly line of a OEM (Large Company) or a Tier 1 company. This programme works in a project mode over one year transforming the Customer- Supplier relationship to a win-win.

**VLMi (Visionary Laghu Udyog Mitra Mandal India)** is one of the five programmes under the VLFM initiative. Under the guidance of Professor Shoji Shiba, Chief Adviser VLFM/CSM; Mr Furuhashi, Chief Instructor of VSME and Mr. Chandrakant Patel, Managing Trustee - SNS Foundation; a new and

innovative initiative was launched to scale up the 1000 VSME programme since 2015. Another significant aspect of the VLMi project is the partnership and collaboration between Industry, represented by Confederation of Indian Industry (CII) and Local Academia.

**The Village Buddha** is a unique programme that aims to build a strong relationship between Business and Society, to create a 'Win-Win' for both. This programme promotes the concept that business and society are integrally interconnected and inter-dependent.

**PGPEX-VLM** is one year full time residential programme has a built in manufacturing focus that helps to appreciate an industry's metamorphosis in competitive times. The course is being conducted jointly by 3 premier institutes of India viz. IIM Calcutta, IIT Kanpur and IIT Madras. The course has been designed by these institutes in consultation with industry, Confederation of Indian Industry (CII), Japan International Cooperation Agency (JICA), National Manufacturing Competitiveness Council (NMCC) and Ministry of HRD, Government of India.

150 senior leaders from the academia, industry, large corporates, MSMEs from the manufacturing fraternity converged in this summit to learn and share the latest in Indian Manufacturing.

### About VLFM

Visionary Leaders for Manufacturing (VLFM) Programme, now called Champions for Societal Manufacturing, launched in 2006 is a path breaking Programme started by Confederation of Indian Industry (CII) in partnership with Japan International Cooperation Agency (JICA), Government of Japan and National Manufacturing Competitiveness Council (NMCC), Government of India. Since 2014, this programme is now being coordinated by Department of Industrial Policy & Promotion and recognized as one of the Make in India initiatives towards supporting growth of Indian Manufacturing. It is one of the flagship programmes under the Joint Technical Cooperation Agreement signed by the Prime Ministers of the two countries.

### How Mould makers can get benefits?

"The VLFM Programme can help the Mould Makers introduce breakthrough management in their companies by developing people competence for breakthrough and innovation at the senior

and middle level management. The programme transforms highly successful managers into visionary leaders. The programme of 35 day duration spread over 10 to 11 months brings about a mind-set change, by imparting leadership skills leading to behavioural changes. Visionary leaders have a global perspective and they become skilled to jump into the fishbowl and develop future concepts. The programme specially focuses on developing highly efficient and effective implementers of breakthrough in their company context. Individual and group feedback by senior mentors and demonstrators are powerful enablers," said VLFM Team.

### How to apply?

Mould makers can get in touch with the VLFM Initiative under the CII Naoroji Godrej Center of Excellence, Mumbai to get an opportunity to participate in the next batch.

### Contact Details:

Confederation of Indian Industry  
249-F, Sector 18, Udyog Vihar, Phase IV,  
Gurgaon – 122015, Haryana  
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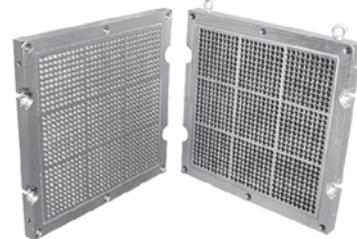
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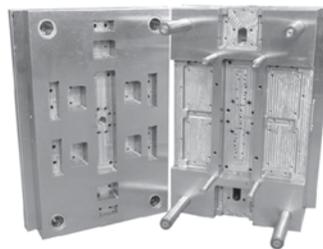
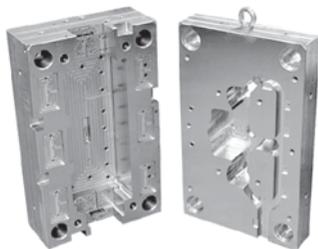
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# MMTS 2019 highlighted latest trends and technologies in die casting industry



**G**DC TECH Forum, an association for aluminium die casting industry working actively to help the industry come together, recently organised MMTS 2019. MMTS 2019, an international conference & exhibition was held in Chennai Trade Centre from November 28-30, 2019 in Chennai. The event was spread across 5,500 sqm, with over 70 stalls showcasing the latest technologies and developments in aluminium die casting, light weighting, and measuring & testing.

The event started with a welcome address by Dr Aniruddha Karve, Chairman, GDC Tech Forum. The event was inaugurated by Mr L Ganesh, Chairman, Rane Group who in his address, narrated the story of his company's growth in the existing market needs in the



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last 80 years. He mentioned that traditionally we have learnt that land, labour and capital are the classical factors of production but stressed that today, labour is not just physical but also intellectual, the outcome of which is innovation and intellectual capital or wealth. He said that apart from the digital economy this is applicable even in the brick and mortar manufacturing sector. He spoke about how innovation is becoming the true differentiator between winners and others. He went on to define innovation simply as a “new idea, device or method”. However, he said that innovation is often also viewed as the application of better solutions that meet new requirements and unarticulated needs.

The keynote address was delivered by Dr V. Sumantran, Chairman, Celeries Technologies (Former-CEO Tata Motors-Car Business). He stressed upon the need and necessity of light weighting and Electric Vehicles. He narrated his journey with the auto industry.

Along with the Exhibition, three conferences were organised during these three days.

During the conference there were many presentations on light weighting technology, multi material solutions, innovations & integration in transport sector, among others. Twenty-two technical papers were presented along with two panel discussions. The high quality presentations were very well received by the 40 delegates from various industries, like Mahindra & Mahindra, Tata Motors, Altair Engg, APPL industries, CVRDE, Code product solutions, ESI Software, Gurit, Hindalco, Hindustan Magnesium, Henkel Adhesives, Monotech, Reliance, Tox, TVSMotors, MahindraCIE, Grasim, SKYI, Sundaram Brake, Aerospace Industry



Association, DSM, Mercedes Benz, ARAI, Essar Steel, ISRO, Godrej Aerospace, Uddeholms and many more.

Valedictory session was chaired by Mr. Shrikant Marathe, Chairman, Organising Committee.

In the side-line of exhibition, conference on ‘GDC TECH 2019-Casting Tomorrow’s Successes’ was conducted successfully. Eighteen technical papers with four panel discussions and various award distributions attracted the participants. Quiz programme finale was well received.

Chief Guest for this conference was Mr. Satish Sangameshwaran, Managing Director, DAA Consulting Pvt. Ltd., who spoke on “Free Trade Agreements”

Conference on Measure & Test had been conducted for two days during the event which included thirteen technical papers and open house discussion focused on the advancement in testing technologies. Speakers covered the topics such as CMM, X-Ray, Industry 4.0, 3D measurements, NDT & welding quality management etc. Thirty-five participants attended the conference.

The exhibition attracted 800 visitors from the industry. On the third day many exhibitors expressed satisfaction at the response and the business conducted during these three days.

To conclude, Mr. R. T. Kulkarni, thanked the sponsors, media partners and associations, exhibitors and participant for supporting this event and making it successful, while making a sincere appeal to continue supporting MMTS events in future. 🇮🇳



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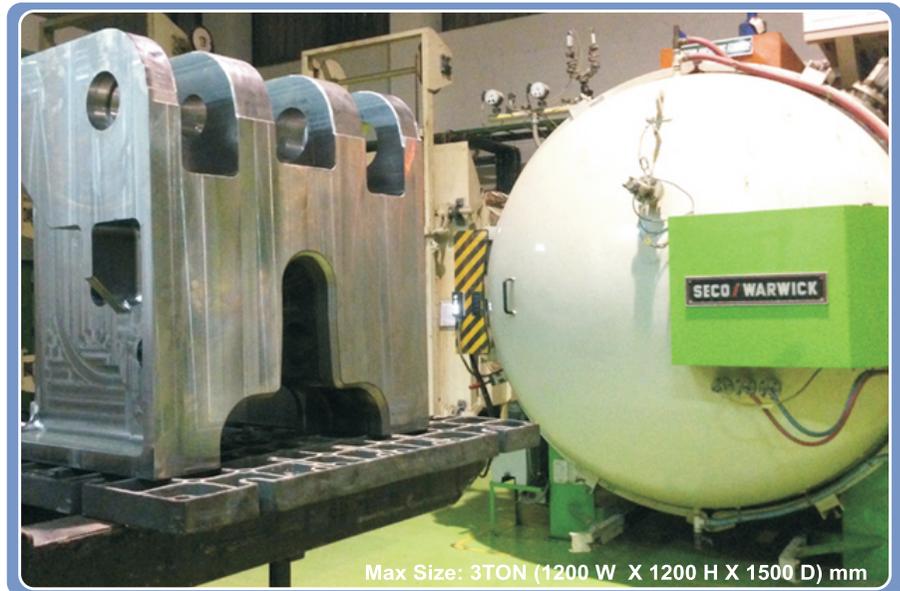
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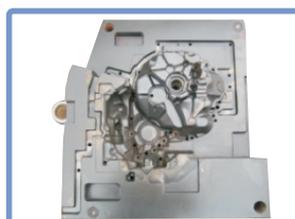
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## New from Meusburger: E 1307 Fine centring unit, flat for high-precision centring of inserts

The new E 1307 Fine centring unit, flat from Meusburger features minimal installation space which provides for maximum space utilisation within the insert. Through the DLC coated centring elements available with or without fixing holes the designer enjoys maximum flexibility during design, and the wear is reduced to a minimum.



Picture credits: Photo (Meusburger)

New from Meusburger: E 1307 Fine centring unit, flat for high-precision centring of inserts

The best way to compensate the thermal expansion between the inserts and the cavity plate with milled pocket is to place the centring element directly at the cavity. However, designers often have to cope with

very little space available for introducing the cavity when designing the inserts. To achieve exact centring of the individual inserts, Meusburger set themselves the goal of developing a centring element that is as small as possible but still equipped with technical refinements: the E 1307 Fine centring unit, flat. The product features compact design with defined installation positions, which prevents incorrect mounting of the respective centring parts. The hardened and DLC-coated fine centring unit ensures minimal wear and is ideal for use in cleanrooms. The large chamfer on the contact surface of the centring parts allows corner radii on the insert and at the same time facilitates assembly. In addition, the withdrawal thread facilitates disassembly. The fine centring unit, flat is available in 2 versions with 2 sizes each: the E 13076 with mounting holes as ready-to-use variant and the E 13070 without mounting holes for individual adjustment to the required dimensions on a specific insert. The data is available in the online shop and with just a few clicks ready for download and export to the respective CAD system.

### Further information:

**Meusburger Georg GmbH & Co KG**  
Communication / Public relations

**Lia Klimmer**

Phone: + 43 5574 6706-1446

Email: [presse@meusburger.com](mailto:presse@meusburger.com)

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Wear-free, optoelectronic signal generation

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### Features:

Max. probing speed: 3 m/min

Repeatability: 0.3  $\mu\text{m}$  2 $\sigma$

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This tool finds its application in a variety of industries including die and mold industry, general engineering, auto and power generation industry.

Further information:

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**T**he new WVL – F24 machine is especially beneficial for the alloy wheel manufacturing from Taiwanese CNC manufacturer, FEMCO. It is equipped with excellent full size processing capacity with appropriate finger chuck, ranging from 13" to 26" (optional).



**Control Panel:** the control panel uses absolute coordinates, which allows system to process next command directly, return to the zero point not required.

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spindle motor (60/75kW) for improved efficiency, quick spindle acceleration/deceleration and reduced work time.

**Rapid Traverse rate fastest in the industry:** 36m/min rapid x/z axis traverse is the fastest in the industry; servo driven turret for quick tool switching, down time and greatly improved processing efficiency.

Other Technical Specifications:

- Max wheel turning: 26"
- Max swing over bed: Ø850mm
- Max turning diameter: Ø660mm
- Max turning height: 335mm
- Spindle is close to the operator that shortens the loading/unloading distance for a more ergonomic design
- Lower chuck position for easy loading/unloading that reduces stress from prolonged operator shifts
- Works with different finger chuck for turning 13"~26" wheels (optional)
- Rapid X/Z-axis traverse: industry record of 36m/min
- Servo motor turret for fast tool switching, short down time, and greatly improved efficiency
- High horsepower spindle motor for improved efficiency and reduced working
- Absolute coordinates for the control system that does not need to return to zero point

Further information:

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*Contact Details:*

PLASTIVISION INDIA AIPMA House,  
A-52, Street No. 1,  
M.I.D.C. Marol,  
Andheri (East),  
Mumbai – 400 093  
Tel: +91 22 6777 8846  
Email: sanjeevani@plastivision.org  
Web: www.plastivision.org

### IMTEX 2020

**IMTEX FORMING** is a significant exhibition for South East Asia with the presence of leading national and international manufacturing firms from the metal forming sector. January 23 – 28, 2020, Bengaluru International Exhibition Centre (BIEC), Bengaluru.

*Contact Details:*

Indian Machine Tool Manufacturers' Association  
10th Mile, Tumkur Road,  
Madavara Post, Bangalore - 562 123  
Tel: +91 - 80 - 6624 6600  
Email: imtma@imtma.in  
Web: www.imtex.in

### DIEMOULD India 2020

**THE** 12th edition of the DIEMOULD Show all set to showcase the latest in the world of tooling industry and bring together leading brands and key players from the die mould and machine tool segment on a single platform, April 22-25, 2020; Bombay Exhibition Centre, Mumbai.

*Contact Details:*

TAGMA, A- 33, Nand Jyot Industrial Estate, Safed Pool,  
Andheri - Kurla Road,  
Mumbai  
Tel: 22 28526876  
Email: tagma.mumbai@tagmaindia.org

## International:

### ASIAMOLD

**THE** premier platform for mould, additive manufacturing and forming technologies, February 26–28 2020; Guangzhou, China.

*Contact details:*

Guangzhou Guangya Messe  
Frankfurt Co Ltd  
Room A2001, Center Plaza  
No. 161 Linhe Road West, Tianhe District  
Guangzhou, P.R. China  
Tel: +86 20 3825 1558  
Fax: +86 20 3825 1400  
Email: asiamold@china.messefrankfurt.com

### Hannover Messe 2020

**THE** Hannover Messe is the world's leading industrial technology trade show. April 20- 24, 2020. Deutsche Messe AG, Exhibition Center, Hanover, Germany

*Contact Details:*

Deutsche Messe AG  
Messegelände  
30521 Hanover, Germany  
Tel: +49 (0)511 890  
Email: info@messe.de  
Web: https://www.deutschemesse.co.uk/hannover-messe

### DMC 2020

**DIE & Mould China (DMC) 2020** is an

international trade show on die & mould technology and equipment, June 10-14, 2020, National Exhibition and Convention Center (Shanghai) (NECC), China.

*Contact Details:*

National Exhibition and Convention Center (Shanghai) (NECC)  
333 Songze Avenue,  
Qingpu District, Shanghai,  
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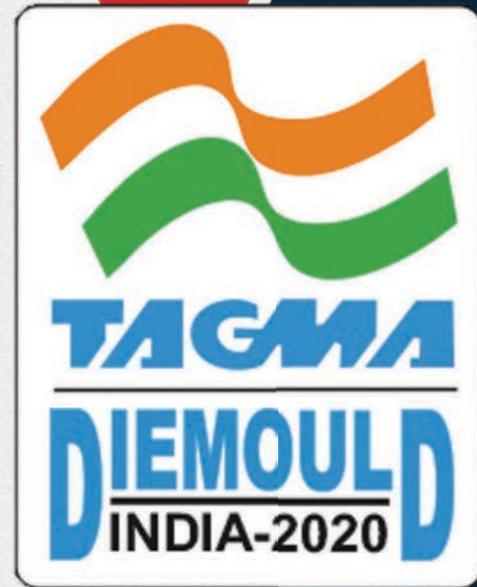
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**Email id:** jitendra.lakhotia@aaakarcastings.com  
**Contact Person:** Mr. Jitendra Lakhotia  
**Activities:** Design Development & Manufacturing of dies, moulds, Jigs - fixtures, relation gauges, press tools, rubber/plastic moulds, including for automotive & non automotive applications.

### 2. ATHARVA MOULDS PVT LTD.

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**Email id:** shiva@atharvamoulds.in  
**Contact Person:** Mr. Sivannarayana N

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M-103, MIDC, Ambad Nasik - 422010 Maharashtra  
**Tel:** 0253-6694556  
**Email id:** shashank@bcatma.com  
**Contact Person:** Mr. Shashank Bhandari  
**Activities:** Manufacturing of Auto - Electrical stamped and insert moulded parts. Having captive tool design & manufacturing capability.

### 4. GAYATRI TOOLING SOLUTIONS

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**Tel:** 0253-2381005

**Email id:** gayatritooling@gmail.com

**Contact Person:** Mr. Srishail Kshetriya

**Activities:** Manufacture of Precision Injection Moulds

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**Tel:** 7028070329

**Email id:** shah@maxeffengineering.com

**Contact Person:** KETAN R SHAH - DIRECTOR

**Activities:** Manufacturing Of Injection Moulds For Precise Plastic Parts. Jigs And Fixtures For Assembly

### 6. SAMARTH MOLD

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**Email:** samarthemold@gmail.com

**Contact Person:** Mr. Rajendra Jade / Mr. Shivaputra Kattimani

### 7. SAMTECH

F-90, MIDC, Satpur Nasik, Nasik - 422007 Maharashtra  
**Tel:** 0253-02361409

**Email id:** accounts@samtechnsk.com

**Contact Person:** Mr. Arunkumar Dana

**Activities:** 1. Plastic Injection Mould

Manufacturing and Design. 2. Manufacturing of Auto Electrical and Battery Components and house hold product

### 8. SWARDA TOOLS AND DIES

D-37/1, MIDC Ambad Nashik - 422010 Maharashtra

**Tel:** 0253-2384410

**Email id:** swardatoolsanddies@gmail.com

**Contact Person:** Mr. Kailash Bobade

**Activities:** To Provide subcontract manufacturing and assembly services for precision parts, jigs, fixture, press tools, low cost automation & electro mechanical assemblies.

### 9. VENKATESHWARA ABRASIVES

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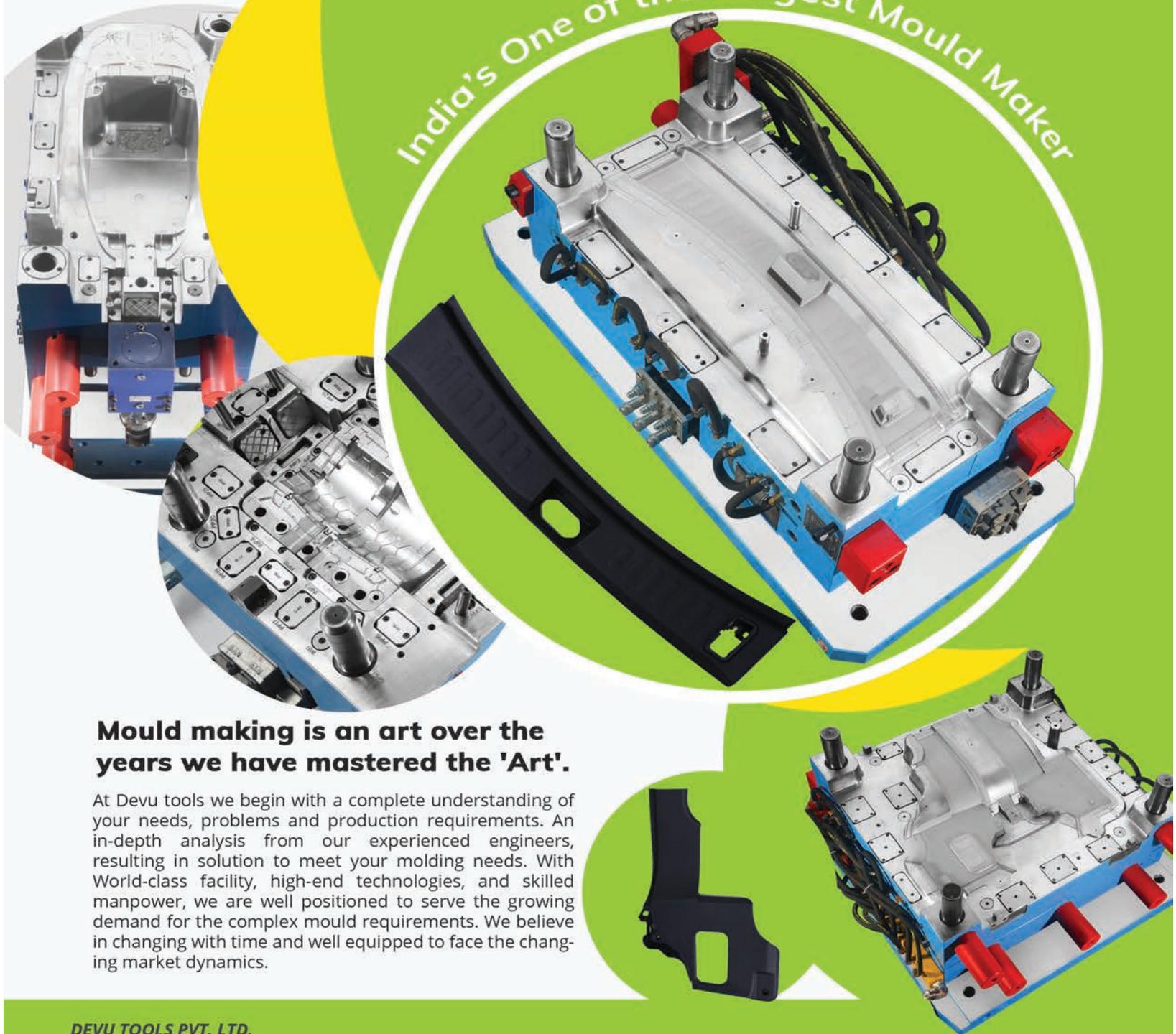
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