

# THE MACHINIST

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## Game CHANGERS

*Dr. Andreas Lauermann, Dr. Pawan Kumar Goenka, Sudhir Mehta & Sriram Viji  
- stalwarts who are changing the landscape of Indian manufacturing.*

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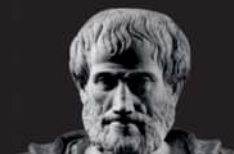
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We are what we repeatedly do.  
**Excellence** then, is not an act, but a habit.  
Aristotle



## A movement called #Machie!

It all started as a humble editorial initiative in December 2014. As the Editor of The Machinist, I was looking for a forum to highlight the best practices of Indian manufacturing plants. So, I invited ideas from plant professionals about what they believed went into the making of a 'Super Shopfloor'. The response was quite positive and encouraging. And it made a good story.

Importantly, I saw the seed of an awards platform in that story. I discussed it with the team, and the idea was welcomed with enthusiasm and excitement. Subsequently, we announced 'The Machinist Super Shopfloor Awards' in March 2015. And the first #Machie Awards ceremony was successfully organised in May 2015. Since then, every year, we have been celebrating the excellence in Indian manufacturing through this unique awards programme.

**"THE QUEST FOR EXCELLENCE AMONGST INDIAN MANUFACTURING PLANTS IS SO INTENSE AND PASSIONATE THAT #MACHIE HAS TODAY BECOME A MOVEMENT."**

The geographic spread in terms of the response to the nomination process is quite overwhelming. In fact, it has acquired pan-India status right from the first edition. The quest for excellence amongst Indian manufacturing plants is so intense and passionate that #Machie has today become a movement. The feeling of pride that a team (or a person) who receives the #Machie trophy on the stage is something you should see it to believe it.

Well, the movement has just started! And it is gaining momentum only because of you – India's manufacturing professionals. So, stay with us. We have a long way to go!

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# World first!\*

## Carbide(head) + Carbide(holder)

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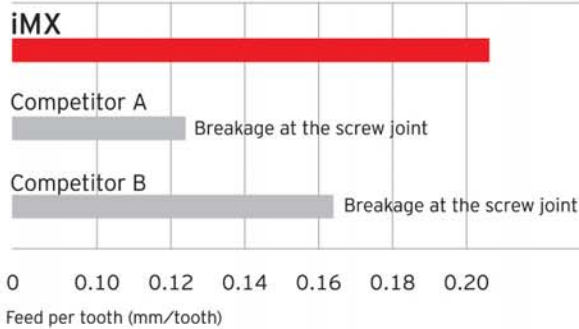
\*According to our own research on exchangeable head end mills.

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# NEWS

## PSLV Mark-III continuation program phase 6 approved

**THE UNION CABINET** chaired by Prime Minister Narendra Modi has approved the Polar Satellite Launch Vehicle (PSLV) Continuation Programme (Phase 6) and funding of thirty PSLV operational flights under the Programme.

The Programme will also meet the launch requirement of satellites for Earth observation, Navigation and Space Sciences. This will also ensure the continuity of production in Indian industry.

The total fund requirement is Rs. 6131.00 crore and includes the cost of thirty PSLV vehicles, essential facility augmentation, Programme Management and Launch Campaign.

Major Impact: The operationalisation of PSLV has made the country

self-reliant in the launching capability of satellites for earth observation, disaster management, navigation and space sciences. The PSLV Continuation programme will sustain this capability and self-reliance in the launching of similar satellites for national requirements.

The PSLV Continuation Programme – Phase 6 will meet the demand for the launch of satellites at a frequency up to eight launches per year, with maximal participation by the Indian industry. All the operational flights would be completed during the period 2019-2024. The Programme will also meet the launch requirement of satellites for Earth observation, Navigation and Space Sciences. This will also ensure the continuity of production in Indian industry.

## Tata Boeing Aerospace delivers AH-64 Apache fuselage

**TATA BOEING AEROSPACE LIMITED** has announced the delivery of the first AH-64 Apache combat helicopter fuselage ahead of schedule from its state-of-the-art facility in Hyderabad. The fuselage will now be transported to Boeing's AH-64 Apache manufacturing facility in Mesa, AZ, for integration into the final assembly line.

This delivery comes within a year of the aerospace joint venture facility becoming operational.

The facility, which is spread over 14,000-square meters and will be employing 350 highly skilled workers at full production, was inaugurated by Nirmala Sitharaman, Minister of Defence, Government of India, in March this year. The facility will be the sole global producer of fuselages for AH-64 Apache helicopter delivered by Boeing to its global customers including the U.S. Army. The facility will also produce secondary structures and vertical spar boxes for the multi-role combat



helicopter.

“This is a major step forward in Boeing and Tata Advanced Systems’ continued commitment to make advanced, high quality aerostructures in India,” said Pratyush Kumar, president, Boeing India. “Our investments in technology, capability and skilling are clearly paying off as evident from the quality and speed at which this delivery milestone has been achieved. As we accelerate our efforts, we see this as a major step towards future opportunities to pursue the co-development of integrated systems in aerospace and defence.”

## NITI Aayog and ABB India collaborate

**THE NATIONAL INSTITUTION** for Transforming India (NITI Aayog) and ABB India have signed a Statement of Intent (SoI) to support the Indian government realize its vision of Make in India through advanced manufacturing technologies that incorporate the latest developments in robotics and artificial intelligence.

NITI Aayog will work with ABB to prepare key sectors of the economy, such as the power and water utilities sector, industries like food as well as the heavy industries sector; and the transport (rail and metro) and infrastructure sectors for digitalization, the Internet of Things (IoT) and Artificial Intelligence (AI). The initiative also covers the segment of electric mobility.

## TUV Rheinland India approved as a Notified Body by CDSCO

**TUV RHEINLAND INDIA** announced that it has been approved as a Notified Body by the Central Drugs Standard Control Organisation (CDSCO), India. TUV Rheinland India will now be able to carry out audit of manufacturing sites of Medical Devices manufacturers as per Medical Devices Rules, 2017. “The new set of Medical Devices Rules 2017, separating medical device industry from the pharmaceutical sector, has taken effect from January 2018. The Medical Devices Rules will regulate all aspects and activities pertaining to medical devices such as manufacture, sale & distribution, imports & exports, labelling, conducting of clinical trials, registration of laboratories for carrying out tests and recall of devices.” said Thomas Fuhrmann, MD of TUV Rheinland India “The new rules have eased norms for obtaining license and conducting clinical trials, and also reduced manufacturer-regulator interface by promoting an online digital platform- SUGAM”.





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**STALL No**  
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# NEWS

## BSH breaks ground for refrigerator manufacturing plant in Chennai

### BSH HAUSGERÄTE GMBH

recently held the ground-breaking ceremony of its upcoming refrigerator factory at its 44-acre Chennai facility in India. As a part of the company's ambitious expansion drive, BSH will be investing 100 million Euros over the next four to five years across building brands, technology centre, setting up its robust refrigerator factory to bring best in class German technology in India. By 2021, the new facility will manufacture approx. 41,000 units, targeting more than 400,000 units by 2028 for domestic consumption as well as export to other emerging markets. To support this target, the facility will give direct employment opportunities to almost 500 staff by 2027.

BSH's new facility will see localisation for India and will manufacture



products for the brand Bosch. Commenting on the inauguration on BSH's first Refrigerator facility, Michael Schöllhorn, Member of the Board of Management (Chief Operating Officer), BSH B/S/H/ Home Appliance Group said "At BSH, we believe there lies immense growth potential in the emerging regions of India, owing to the vast populace and their budding aspirational needs that contribute to a

growing Indian home appliances market. In the last few years, BSH invested over 100 million Euros into India to develop its Chennai facility, the Tech Centre, R&D and brand stores to produce localised offerings for India. In line with our 'Make in India' commitment, we will continue to extensively invest in the country and build innovative India specific products."

Commenting on the ground-breaking ceremony for the refrigerator factory, Gunjan Srivastava, MD & CEO, BSH Household Appliances Manufacturing Pvt. Ltd, India said, "Our new facility reinforces our commitment to the Indian market and the Government's Make in India' campaign, by innovating and designing products specifically for the Indian market."

## Schaeffler launches India made FAG SNV housings

### LEADING INDUSTRIAL

and automotive supplier, Schaeffler India Ltd (Formerly FAG Bearings India Ltd) has announced the launch of its new range of FAG SNV Housings. SNV Housings are the



new split plummer block housings which are quick to mount and easy to lubricate. Schaeffler India launched SNV Housings with an aim to provide similar German quality products manufactured locally.

SNV Housings find applications in Paper processing industry, Mining, Materials processing, Agricultural Machinery as well as Power Stations. The newly launched housings provide a host of benefits including reduced installation time, reduced maintenance, longer rolling bearing life, simplifying stock holding due to modular concept and more. The new range of housings are particularly easy to install and replace. It is no longer necessary to use special housing designs in many standard applications.

## Transport decarbonisation alliance launched

ALSTOM and partner companies, cities and countries, assembled in Leipzig, Germany, for the official launch of the Transport Decarbonisation Alliance (TDA), a coalition aiming to catalyse the accelerated decarbonisation of the transport sector. With transport emissions today accounting for 25 percent of energy-related greenhouse gas emissions, the TDA brings together leading countries, cities and companies into a "coalition of the willing" seeking to transform the global transport sector to achieve net-zero emissions before 2050. The TDA, which forms part of the 12 commitments made at the One Planet Summit hosted by French President Emmanuel Macron in Paris, France in December 2017, will facilitate discussion on decarbonisation in the context of global, regional, national, local and corporate policy processes, while demonstrating that decarbonisation is technically feasible, economically attractive, and brings broad social and environmental benefits.

"Carbon neutrality in the mobility sector is achievable; all transportation systems need to be reinvented and transformed to rise to this challenge. With our partners in the Transport Decarbonisation Alliance we look forward to being at the forefront of this transition," said Henri Poupart-Lafarge, Alstom Chairman & CEO. Alstom joins other founding member companies CEiiA, EDP, ITAIPU Binacional, Michelin, and PTV. TDA member countries are Costa Rica, Finland, France, Luxembourg, Netherlands and Portugal, with member cities Curitiba (Brazil), Rotterdam (Netherlands), Lisbon (Portugal), and Porto-Gaia-Matosinhos Atlantic Front (Portugal).


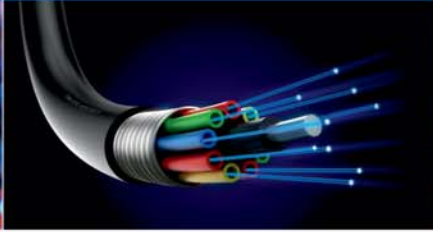
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# CALENDAR

## • MARK YOUR DIARY •

A list of key events happening between June 2018 to June 2019, both nationally and internationally.

<p><b>ACMEE</b>  <b>June 21–25, 2018</b>          Chennai, India  <a href="http://www.acmee.in">www.acmee.in</a></p>	<p><b>AMTEX 2018</b>  <b>July 06–08, 2018</b>          New Delhi, India  <a href="http://www.amtex-expo.com/amtex_delhi">www.amtex-expo.com/amtex_delhi</a></p>	<p><b>Busworld India 2018</b>  <b>August 29-31, 2018</b>          Bengaluru, India  <a href="http://www.india.busworld.org">www.india.busworld.org</a></p>	<p><b>Automation Expo</b>  <b>August 29–September 1, 2018</b>          Mumbai  <a href="http://www.automationindiaexpo.com">www.automationindiaexpo.com</a></p>
<p><b>IMTS 2018</b>  <b>September 10–15, 2018</b>          Chicago, USA  <a href="http://www.imts.com">www.imts.com</a></p>	<p><b>Renewable Energy India Expo</b>  <b>September 18–20, 2018</b>          Greater Noida  <a href="http://www.renewableenergyindiaexpo.com">www.renewableenergyindiaexpo.com</a></p>	<p><b>Wire India Show</b>  <b>November 27–29, 2018</b>          Mumbai, India  <a href="http://www.wire-india.com">www.wire-india.com</a></p>	<p><b>Metallurgy Show</b>  <b>November 27–29, 2018</b>          Mumbai, India  <a href="http://www.metallurgy-india.com">www.metallurgy-india.com</a></p>
<p><b>TechIndia 2018</b>  <b>August 29 –31, 2018</b>          New Delhi, India  <a href="http://www.techindiaexpo.com">www.techindiaexpo.com</a></p>	<p><b>IMTEX 2019</b>  <b>January 24 –30, 2019</b>          Bangalore, India  <a href="http://www.imtex.in">www.imtex.in</a></p>	<p><b>Taipei International Machine Tool Show</b>  <b>March 4–9, 2019</b>          Taipei, Taiwan  <a href="http://www.timtos.com.tw">www.timtos.com.tw</a></p>	<p><b>intec Coimbatore</b>  <b>June 6–10, 2019</b>          Coimbatore, India  <a href="http://www.intec.codissia.com">www.intec.codissia.com</a></p>



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October 2018



November / December 2018



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SC-25  
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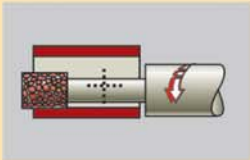


FIG-200 SPL CNC  
BIG BORE GRINDER

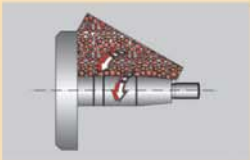


FIGT-300 CNC  
FOUR STATION TURRET



FIGE-150 CNC  
ID / OD GRINDER

## CNC Cylindrical Grinding



AWH-1500 CNC  
LONG SHAFT GRINDER

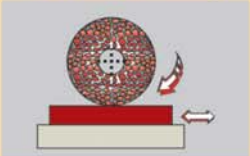


AWH-2000 CNC  
HEAVY DUTY GRINDER



SWH-400 CNC  
AUTO LOADING

## Surface Grinding



SG-106 CNC  
CREEP FEED GRINDER



SGR-60  
ROTARY GRINDER



SG-63  
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## Automats



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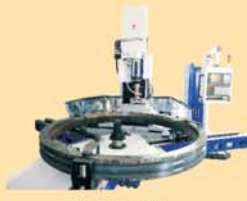
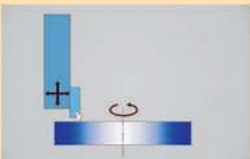


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### FORD APPOINTS JEFF LEMMER AS CIO

Ford has appointed Jeff Lemmer as Chief Information Officer, effective June 1, 2018. In this role, he will be responsible for IT services for the company's operations globally, including IT business applications, architecture, data centers, engineering and infrastructure services. Reporting to Marcy Klevorn, Ford's executive vice president and president of Mobility, Lemmer will play a key role in overseeing global IT operations during the company's ongoing transformation to become the world's most trusted mobility company designing smart vehicles for a smart world.

"The exciting convergence of the auto and IT industries is creating new opportunities to leverage technology not only to maximize operational efficiencies but also to speed up the development and implementation of solutions for consumers and cities," said Jim Hackett, chief executive officer, Ford Motor Company. "A trusted and experienced leader, Jeff's extensive knowledge of the IT field will help Ford further position itself for growth during these transformational times."



### MATTHIAS L. WOLFGRUBER VOTED NEW LANXESS CHAIRMAN

Dr. Matthias L. Wolfgruber (64) is the new Chairman of the Supervisory Board of Lanxess AG. At its constituent meeting, the Supervisory Board of the specialty chemicals company elected the doctor of chemistry and former CEO of Altana AG as the successor to Dr. Rolf Stomberg (78), who resigned from his office after the end of the Annual Stockholders' Meeting. Wolfgruber has been a member of the Supervisory Body as a stockholder representative since 2015.

"Lanxess has undergone extensive change in recent years and is on a stable course for growth. We aim to bring the full potential of this Group to fruition in the years ahead. In my new role, I am looking forward to continuing down our chosen path and breaking new ground in conjunction with the Board of Management and all employees," said Wolfgruber.

### MAHINDRA APPOINTS SR ADVISOR IN SOUTH KOREA

Mahindra Group has appointed Dr. Inbom Choi as Senior Advisor to head its Mahindra Korea office. Dr. Choi will work closely with various Mahindra business units to identify new opportunities in the Korean market and strengthen the Group's relationship with existing partners. Commenting on the appointment, Rajeev Dubey, Group President (HR & Corporate Services) and CEO (After-Market Sector) and Member of the Group Executive Board, Mahindra & Mahindra said, "Dr. Choi brings three decades of rich experience in government and the corporate world to his new role. A well respected academic, he has also worked as public policy maker, adviser and influencer in various institutions, including international organizations, Korean national and provincial governments, think-tanks, industry associations and global corporations. I am confident that he will offer new insights as senior advisor for the Group, as well as propel the company to the next orbit of growth."

"Mahindra has established a strong footprint in Korea over the past few years and through close cooperation with our global office colleagues, I look forward to helping the business harness potential opportunities and further consolidate its presence in the country," said Dr. Choi.

### METSO APPOINTS PEKKA VAURAMO AS PRESIDENT AND CEO

Metso's Board of Directors has appointed Pekka Vauramo (born 1957, M.Sc. (Tech.)), President and CEO of Metso, effective as of November 2018 at the latest. Pekka Vauramo has served as President and CEO of Finnair since 2013, and prior to that he held several management positions at Cargotec (2007-2013) and Sandvik (1985-2007).

According to Mikael Lilius, Chair of Metso's Board of Directors, Vauramo will bring the right kind of competence and experience to Metso. "Pekka Vauramo has a proven track record in leading businesses facing competitive global markets, and he has long and extensive experience in the mining industry and in an international business environment. His experience is a good fit for Metso, which has achieved solid momentum this year with its new and goal-oriented organization and management team. The Board is confident that Pekka is the right person to lead the company forward with its current strategy and create added value for its customers and shareholders," Lilius says.

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### USG BORAL INDIA APPOINTS SUMIT BIDANI AS CEO

USG Boral has announced the appointment of Sumit Bidani as Chief Executive Officer (CEO) for its India market. In his new role, Sumit will be responsible for developing the growth strategies and expansion of USG Boral across South Asia.

India is a key market for USG Boral – the company recently shared its plan for a new plasterboard manufacturing plant to better meet the region's needs. This expansion underscores USG Boral's commitment in providing high quality and technologically advanced products for the market.

USG Boral India currently operates two other plants – a plasterboard and metal plant in Khushkhera, New Delhi, and a joint compound and putty plant, in Chennai.

On the appointment, Dan Casey, Senior Vice President, Asia & Middle East, USG Boral said, "We are delighted to have Sumit on board to share his insights and expertise to help grow our business in India. His diverse background and extensive experience will enable him to inject a fresh perspective and further bolster our expansion. We are confident that he will play an integral role in sustaining our growth momentum in the India market."



### SHAILESH CHANDRA TO HEAD THE NEW E-MOBILITY BIZ AT TATA MOTORS

To capture the opportunities arising out of new mobility trends and to bring organizational focus and alignment, Tata Motors announced the appointment of Shailesh Chandra to lead the Electric Mobility Business in addition to his current responsibility. He has been promoted as President- Electric Mobility Business & Corporate Strategy, with immediate effect and will continue to be a member of the Executive Committee. Creation of this new business vertical will enable Tata Motors to deliver on its aspiration of providing innovative & competitive e-mobility solutions.

"Tata Motors is optimistic about the future of Electric vehicles and would play a leading role in the electric mobility evolution in the country. We will also leverage on the capabilities of other Tata Group companies to develop the full ecosystem and fast track the adoption of e-mobility," said, Guenter Butschek, Chief Executive Officer & Managing Director, Tata Motors.

Shailesh has played an instrumental role in leading the project teams to deliver the EESL project and has been closely working with some of the Group companies and other ecosystem partners in his current role.

### HARISH MANWANI APPOINTED AS INDEPENDENT DIRECTOR OF TATA SONS

Harish Manwani has been appointed as an Independent Director of Tata Sons. Manwani is the former global chief operating officer for Unilever and the non-executive chairman of Hindustan Unilever Limited. He is also the global executive advisor to Blackstone Private Equity group.

Through his career, he held several senior management positions in Unilever which included heading businesses in North America, Latin America, Asia and Africa. Prior to his retirement, he was the chief operating officer with worldwide responsibility for all of Unilever's operating companies.

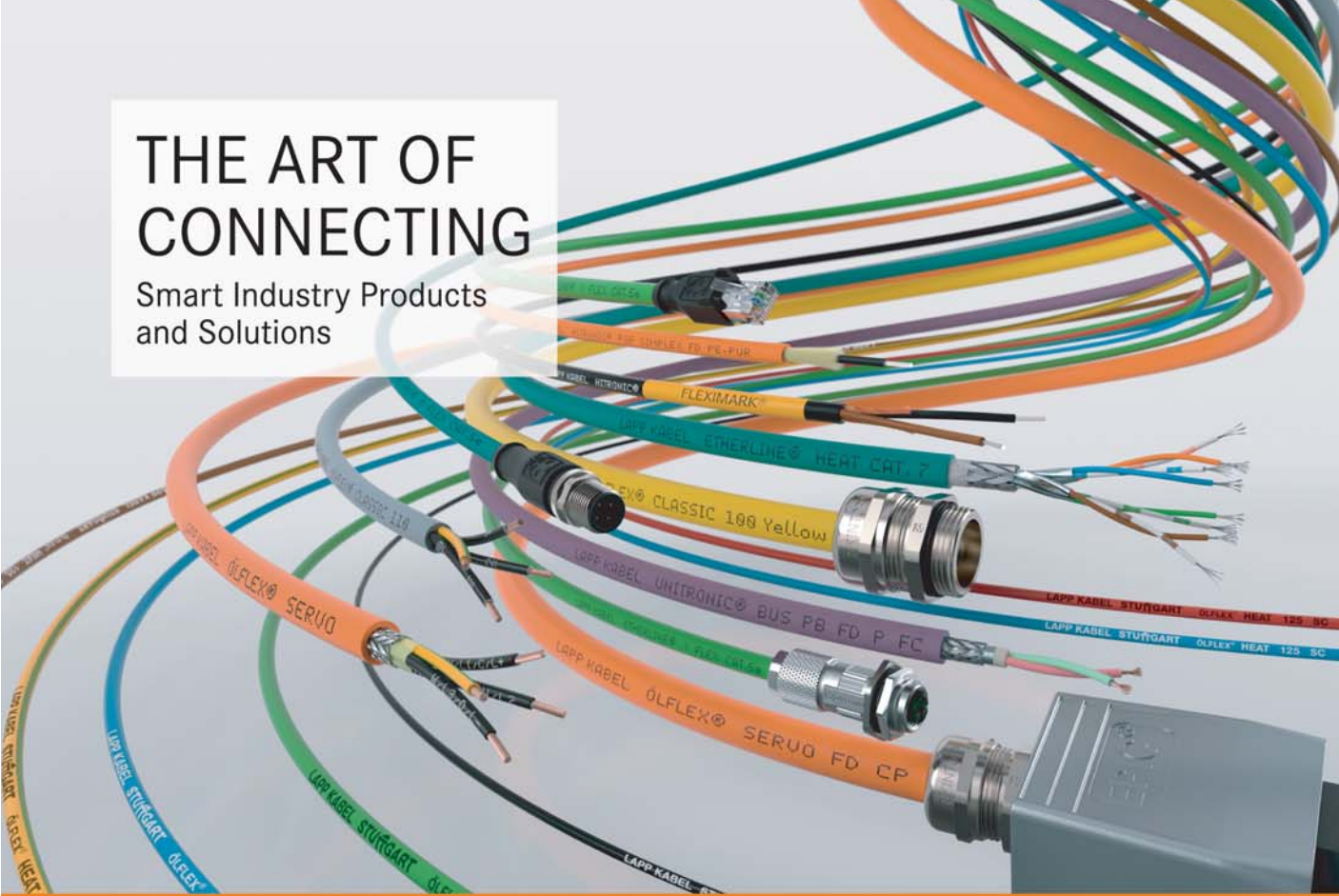
Manwani also serves on the board of directors of Qualcomm Incorporated, Gilead Sciences Inc, Nielsen Holdings plc, Whirlpool Corporation, Economic Development Board (EDB) of Singapore and is the chairman of the executive board of the Indian School of Business. In 2008, he received the CNBC Asia Business Leader of the Year Award and in 2012, he was conferred the Public Service Medal by the Singapore Government.

Commenting on his appointment, N Chandrasekaran, Chairman of Tata Sons, said, "We welcome Harish to the board of directors. Harish brings substantial experience of managing and leading businesses on a global scale. His contribution and counsel will be of great value to Tata Sons in its governance as well as in its strategic development."



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# Manufacturing output rose in May 2018

## Business conditions improve, but at a slower pace

**L**atest survey data signalled a further, albeit weaker, improvement in Indian manufacturing conditions. This was reflected by weaker expansions in output and new orders and employment. Inflationary pressures intensified with both input and output prices rising at the fastest pace since February. Looking ahead, business optimism was weak by historical standards.

The Nikkei India Manufacturing Purchasing Managers' Index (PMI) fell from 51.6 in April to 51.2 in May. The latest upturn signalled a marginal improvement in the health of the manufacturing sector. Overall, the respective index registered above the neutral 50.0 threshold for the tenth consecutive month.

Manufacturing output rose in May, thereby marking a 10-month sequence of expansion. Where an increase was reported, panellists commented on an improvement in demand conditions. However, the rate of increase slowed to a modest



Survey respondents linked this to delayed client payments and greater volumes of new business.


Purchasing activity declined for the first time in seven months in May, albeit only fractionally. Meanwhile pre-production items held by Indian manufacturing companies rose at a slower pace. Stocks of finished goods, on the other hand, declined further in May. Despite easing from April's survey record, the rate of contraction was sharp.

Indian manufacturing companies faced higher input costs in May, thereby stretching the current sequence of inflation to 32 months. Panellists commented on higher prices for raw materials such as oil and steel. Reflecting higher cost burdens, firms raised their selling prices in May. Both input and output price inflation picked-up to the strongest since February.

Businesses remained confident towards the 12-month outlook for output in May. An expected improvement in demand conditions boosted optimism, according to anecdotal evidence. That said, the respective index remained below the historical average.

Commenting on the Indian Manufacturing PMI survey data, Aashna Dodhia, Economist at IHS

Markit and author of the report, said: "The latest PMI survey signalled a further, albeit slower, improvement in the health of the manufacturing sector in May. This was reflective of weaker expansions in output, employment and new business. On the other hand, the gain in new orders from overseas markets was the strongest since February."

"A build-up of inflationary pressures re-emerged with input cost and output charge inflation at the strongest since February, due to the upswing in global oil prices. As a net importer of crude oil, this could potentially destabilise India's recovery, particularly in private consumption. At the same time, IHS anticipates that high oil prices will lead to a further depreciation of the Indian rupee and a wider current account deficit. Subsequently, in efforts to contain inflation and maintain financial stability, it is likely that the RBI will raise interest rates over the summer." 

Source: Nikkei, IHS Markit

**"A build-up of inflationary pressures re-emerged with input cost and output charge inflation at the strongest since February, due to the upswing in global oil prices. As a net importer of crude oil, this could potentially destabilise India's recovery, particularly in private consumption."**

**Aashna Dodhia**, Economist at IHS Markit

pace. Greater production in consumption and intermediate groups continued to outweigh a decline in investment goods.

In line with the trend for output, new orders placed at Indian manufacturing companies rose in May.

Panellists suggested that enhanced marketing initiatives supported new client wins. As was the case with output, the latest upturn was modest. Meanwhile, amid reports of greater demand from international markets, Indian manufacturers reported the strongest gain in new export orders since February.

Reflecting the trends observed in output and new orders, firms raised their staffing levels in May, albeit at a softer pace. Greater production requirements were cited as the key reason behind the latest rise in employment.

Latest survey data indicated a back-to-back monthly rise in outstanding business during May.

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# Leave no one behind

## A step ahead towards sustainability

**R**ecently we celebrated the World Environment Day. On the occasion, Narendra Modi, the Prime Minister of India highlighted the various efforts that the country has been taking for creating sustainable future. Emphasising on the use of alternative energy, he mentioned, “We are engaged in a massive push towards renewable energy generation. We have targeted generation of 175 GigaWatts of solar and wind energy by 2022. We are already the fifth largest producer of solar energy in the world. Not only this, we are also the sixth largest producer of renewable energy. We aim to provide an electricity connection to every household, which will further reduce dependence on environmentally degrading forms of fuel. We are reducing dependence on fossil fuels. We are switching sources of fuel where possible. We are transforming cities and public transportation.”

He further added that the government’s stress is on ‘zero defect and zero effect’ manufacturing. “This means manufacturing that is without defect, and which does not harm the environment,” he elaborated. Commenting on this year’s theme of beating plastic pollution, Modi said that plastic waste management is the way forward in making India clean and green.

In this regard, Aditya Handa, Promoter Director, Abellon CleanEnergy mentioned, “Minimizing use of plastic is undoubtedly the longer-term solution to beat plastic pollution, but interim solutions such as source segregation and recycling of plastic, as well as environmentally safe waste to energy processes are essential to tackle the current situation. As per official data, India produces around 25,940 tonnes of plastic waste daily and at least 40 percent of this waste is uncollected. This 40 percent of waste ends up in landfills, water bodies and is not bio degradable. It is important to step-up mechanism



to stop further pollution and reverse the situation.

Progressive measures need to be introduced to encourage source segregation and recycling. To achieve the desired results a context-based balanced mix of policy, behavioural, technological, and financial interventions are needed along with a long-term commitment to create an ecosystem for systematic waste collection. Further this waste has to be processed to convert it into energy which will not only take care of existing waste but also help in the bridging the energy deficit of the country.”

### Automakers go green

The manufacturing industry also wholeheartedly participated in the celebrations of the World Environment Day and launched various initiatives on the occasion. Hyundai Motor India Ltd. (HMIL), the country’s leading car manufacturer announced its initiatives supporting the cause ‘Beating Plastic Pollution’ along with free PUC, Emission check and Dry Wash for Hyundai Cars.

Commenting on the initiatives, Rakesh Srivastava, Director - Sales & Marketing, Hyundai Motor India Ltd. said, “Being a socially responsible caring brand, Hyundai believes in raising awareness about environment conservation, towards building a sustainable future for conducive growth. In accordance, this year’s theme is ‘Beating Plastic Pollution’, for which we are exploring green alternatives to reduce the usage of plastics across all our offices,



**“We are already the fifth largest producer of solar energy in the world. Not only this, we are also the sixth largest producer of renewable energy.”**

**Narendra Modi,**  
Prime Minister of India



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dealers and service networks. Hyundai will be observing June 2018 as Environment Preservation Month by integrating several sustainability initiatives towards water conservation and pollution check through Free Dry wash technique, PUC and Emission Check for Hyundai cars.”

Volkswagen India and Maruti Suzuki India have also launched similar dry wash systems. Highlighting the company’s approach towards sustainability Steffen Knapp, Director, Volkswagen Passenger Cars said, “It has been Volkswagen’s firm resolution to be an environmentally compatible automaker and we are persistent in our ambitions towards this goal. Keeping our customers at the core of our offerings, we aim to enrich and enhance our relationship by introducing initiatives that complement their needs and our global philosophies.” Explaining the steps that the company is taking, he further mentioned, “With initiatives like the waterless car wash or even, the simple act of handing out saplings we aim to drive awareness, inspire social change and support our customers in their environmental friendly actions.”

Legrand India celebrated the day by presenting its energy efficient product solutions. The new range of products reduce consumption and minimise environmental impact. Speaking about the motive behind the same, Jean Charles Thuard, CEO, Legrand India said, “As a global leader in the electrical and digital building infrastructure we should be leading by example and for that the Group remains committed. Legrand India has always strived to do their bit to reduce carbon footprint and make the environment a better place to be.”

Further he revealed that the company’s plants are also actively involved in reducing environmental impact. Elaborating on the same, Thuard said, “We are very proud to mention that two of Legrand India’s manufacturing units have received the Green Award by GreenTech Foundation for two consecutive years for demonstration high levels of commitment to the environment.”

**Recycling**

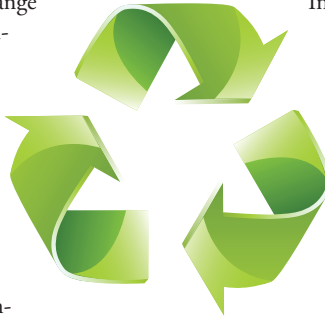
‘Reuse, Reduce, Recycle’ is an important aspect towards greener future. Realising this, Dell India, a leading laptop manufacturer, has launched its Free Consumer Laptop Battery Recycling Program. This program is designed for its consumers across all major metros and tier 1 cities in the country.

The company has designed this Program to encourage responsible disposal of non-working laptop batteries, thereby preventing E-waste from entering landfills. Commenting on the initiative, Mahesh Bhalla, Executive Director & General Manager, Consumer & SMB, Dell India said, “Dell has always been at the forefront of sustainability initiatives in India and across the globe. On World Environment Day, we are glad to announce a program that offers a free, efficient and

“It has been Volkswagen’s firm resolution to be an environmentally compatible automaker and we are persistent in our ambitions towards this goal.”

**Steffen Knapp**, Director, Volkswagen Passenger Cars

convenient way for consumers to recycle their laptop batteries at any time. We also offer to recycle other branded products with the purchase of any new Dell product. We are happy that the Indian government has prioritized the safe disposal of e-waste through the recently enforced law. Dell will support the same through its various take-back options for customers, providing them with an effective means to facilitate responsible product retirement.” The program is available at Dell retailer outlet, in an effort to increase awareness and participation from consumers on recycling E-waste in India.




**Awareness**

Besides such initiatives, spreading awareness about sustainability is equally important.

In this regard, Godrej Group released an informative video on what it takes to work for Planet People Profits. The genesis of the film lies in the idea that companies can help solve critical environmental issues while strengthening their competitive advantage by putting the planet alongside profits.

The film captures some of the sustainability initiatives of the Godrej Group’s long journey. These include reducing water and energy footprint by a third, building watersheds across 13,000 hectares to increase the water table, aiming to become water positive (target date - 2020) and processing around 4000 tons of municipal waste every year with a future target of an additional 12,000 tons thereby eliminating sending waste to landfill. In addition to sourcing 45 percent of its energy from renewable sources, Godrej Group is also setting up a pyrolysis plant to convert non-recyclable plastic waste into fuel and hazardous waste into energy. ‘Godrej One’ demonstrably stands as a symbol of the group’s platinum rated buildings. Through all these initiatives, the Godrej Group remains a good corporate so that business flourishes along with strong financial performance and innovation.

Commenting on this, Nadir Godrej, Managing Director of Godrej Industries and Chairman of Godrej Agrovet says, “At Godrej, we have always actively championed social responsibility - from conserving mangroves to the commitment to train one million unemployed and under-employed youth in skills, to making environmental sustainability a key part of the manufacturing process and value chain across the businesses. This film takes one through our amazing journey showcasing our persistent focus on sustainability, positive productivity and especially environmental commitments.” 

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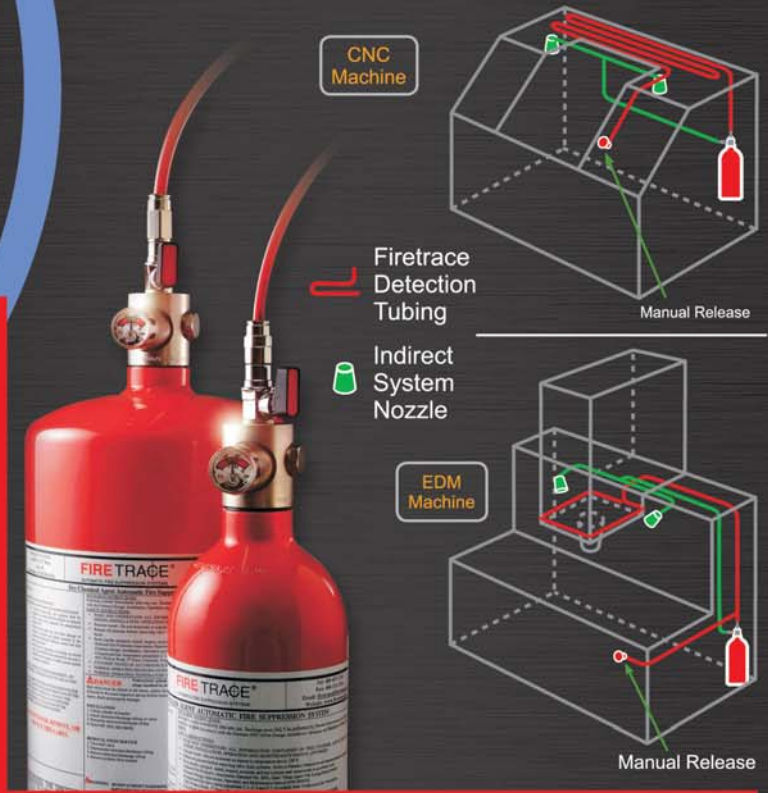


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# Heavy duty cruiser!

Rajeev Mishra, CEO – UM Lohia Two Wheelers Pvt. Ltd., wants the UM brand to grow and have a huge recall value in India while the company increasingly focuses on localisation and innovation.

By Niranjan Mudholkar

**Q US-based UM International, LLC & Lohia Auto joined hands in September 2014 to form UM Lohia Two-Wheelers Pvt. Ltd. How's been the journey so far and are you satisfied in terms of achieving the goals that were set for the organization at the beginning?**

Yes, we created our joint venture with Lohia Auto Industries four years ago, which enabled us to use their plant for our product assembly. The last four years have been challenging for us as the market is quite dynamic. We currently have 80 percent localization and import 20 percent of the components from our factories and vendors abroad. This strategy helped us be more cost effective than other foreign origin auto brands in the country, the benefit of which is eventually passed on to the consumers.

In terms of market segment as well, we're catering to one of the most competitive segment in the auto industry, which needs us to be at the top of our game all times. While this gives us a niche, it also creates an opportunity for us to perform and outdo the targets we set for ourselves. So yes, it would be fair to say that we have achieved some goals, while the others are yet to be achieved, which we hope at a steady pace we will eventually

**Q Why did UM join hands with Lohia Auto? Tell us about this collaboration and how do you plan to leverage on this?**

If we were to enter the Indian market on our own, it would have pushed our present time-

line back by 2-3 years. Setting up your company in a new country is a herculean task which involves setting up a manufacturing plant, conducting research, and a lot more before finally starting production. Entering the Indian market with an already established partner helped us to expedite our activities.

Being an innovation driven company, it was of paramount importance to us that our Indian branch teamed up with a firm that understood the local market and more importantly, structured their brand around innovation too. In Lohia Auto we found the perfect confidante as not only was their prerequisite knowledge of our market strong, but also, we found that innovation was at the very crux of their company.

"We are planning to invest US\$ 25 million to set up an engine manufacturing facility in Hyderabad to grow our production base. The new engine manufacturing facility will commence by 2019 with an annual capacity of 50,000 units."

**Q As far as the market scenario is concerned, what are the things that you see working in the favour of the UM brand in India?**

After extensive market study, UM learnt that the middle-class motorcycle enthusiasts on the lookout for reasonably priced cruisers don't really have a choice other than Royal Enfield. American cruisers like Harley-Davidson and Indian Motorcycles as well as the British Triumph cruisers are expensive. We believe the scope for growth in this segment is monumental, and well within our reach. At UM, the idea is not to compete with anyone else, but rather, create machines with exemplary quality, performance, and experience that would speak for themselves. We offer our customers many inno-





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vative and first-in-India features, enabling them to truly ‘Ride the Difference’.

**Q I understand UM is manufacturing at Lohia Auto’s Kashipur facility in Uttarakhand. What is the capacity at present?**

The current annual capacity of our Kashipur plant in Uttarakhand is 50,000 units annually; although we haven’t hit maximum production yet. As we plan to increase our portfolio, we shall hit be able to exploit it to full potential.

**Q Do you plan to expand the manufacturing footprint in other parts of India? When will that happen?**

We are planning to invest US\$ 25 million to set up an engine manufacturing facility in Hyderabad to grow our production base. The new engine manufacturing facility will commence by 2019 with an annual capacity of 50,000 units.

**Q How strong are your R&D activities in India?**

In 2013, the first thing we did was to establish a wholly owned subsidiary and hire a team of engineers to initiate the R&D process here. In recent months our US board has authorized an extra investment in this company because we see the potential of Indian talent. We have our headquarters in the United States, with R&D centres based there and out of Thailand and China as well. The man power that you get in India is very versatile, with an extremely optimistic outlook. We’re very keen on making the Indian R&D centre advanced to be able to compliment the other centres as well. We currently have 30 people in the India R&D centre.

**Q Tell us about your complete product portfolio for the India. Do you intend to expand soon?**

At the moment, we only have cruisers in our portfolio which constitutes the ‘Renegade’ series. There are three models in this series – Renegade Commando, Renegade Sport S, and the Renegade Commando Classic. All the engines are powered by a 280-cc engine that churns out 25 PS of power and 23 Nm of torque offering consumers a perfect blend of practicality, performance and versatility. Although the platform is the same, the motorcycles differ starkly in their appearance and performance dynamics. Though all the motorcycles have their individual characteristics, at their core they are heavy duty cruisers, ensuring rider comfort and performance for the long hauls. We are planning to bring a couple of new variants as well as models in our existing portfolio. 2018 will see UM launch the Black Cat Commando and the Vegas Edition, which are variants of the Commando and the Sports S, while during the last quarter of the year we will launch the Renegade Duty S and the Renegade Duty Ace, which we unveiled at the Auto Expo.

**Q How do you see the electric bike market evolving in India?**




**“We currently have 80 percent localization and import 20 percent of the components from our factories and vendors abroad. This strategy helped us be more cost effective than other foreign origin auto brands in the country.”**

Given the environment we live in currently, electric machines are going to be the next big thing. They’re good for all the right reasons. If we as a country can set up the infrastructure for charging electric vehicles; make batteries for EVs available at subsidized rates to the manufacturers I don’t see why electric won’t get popular!

The current reservation that most people have about electric vehicles is their range and for the purists it is the power available on tap as well. We have an electric motorcycle in our portfolio – the Renegade Thor which we unveiled at the Auto Expo. The Thor offers a 270 km range on a single charge and comes equipped with a quick charger that give 60 percent of charge in 30 mins. Although we’re keen on bringing this product for the Indian consumers, we’ll have to wait till the infrastructure can support such performance electric machines.

**Q What is your personal vision for UM India?**

We definitely want the brand to grow and have a huge recall value in India. However, our primary goal is to give Indian consumers a product which not only caters to their daily needs, but also is their partner in pursuing wanderlust - a product which is high on quality and performance. We’re already have a presence across 40 cities via 80 dealerships in the country and are keen on growing this foot print furthermore. 

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# Machie conferred on those who follow best practices

Glimpses of the red-carpet event

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THE **MACHINIST** **Super SHOPFLOOR Awards 2018**

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The fourth edition of The Machinist Super Shopfloor Awards 2018 took place in Mumbai on May 31, 2018. The aim of this event is to recognise the success the Indian manufacturing units. The 'Machie' trophy was conferred upon the winners in various categories such as Safety, Productivity, Machining Excellence, Digital Manufacturing, Innovation and Green Manufacturing. The awards platform also included non-manufacturing categories such as Corporate Social Responsibility (CSR), Human Resources (HR), Supply Chain Management (SCM). Supreme Treon, Sanand plant 1 was declared as The Machinist Super Shopfloor of the Year in the SME segment while Hyundai India's Engine 2, Chennai plant won The Machin-

ist Super Shopfloor of the Year in the Large Enterprises category for their overall performances. Apart from rewarding best practices adopted by the shopfloors, The Machinist also recognised contribution of remarkable individuals towards the Indian manufacturing sector. Sriram Viji, Deputy Managing Director, Brakes India was declared as The Machinist Super Next Generation Leader and Sudhir Mehta, Chairman & Managing Director, Pinnacle Industries was declared as The Machinist Super Entrepreneur of the Year. The Machinist Lifetime Achievement Award was bestowed upon Dr. Andreas Lauermann, President and Managing Director, Volkswagen India Pvt. Ltd and The Machinist Super CEO of the Year was conferred to Dr. Pawan Kumar Goenka, Managing Director, Mahindra & Mahindra Ltd.

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Category	Winners
Productivity	• Lohia Auto Industries, Kashipur, Uttarakhand [Winner—SME (Indian)]
	• Faurecia Interior Systems India, Kancheepuram, Chennai [Winner—SME (MNC)]
	• Alstom Transport India, Sri City, Andhra Pradesh [Runner-up—Large Enterprises]
	• Tata Hitachi Construction Machinery Company, Jamshedpur [Winner—Large Enterprises]
Quality	• Technosystems, Belgaum [Winner—SME (Indian)]
	• Danfoss Industries, Oragadam, Chennai [Winner—SME (MNC)]
	• KONE India Plant, Ayanambakkam, Chennai [Runner-up —Large Enterprises]
	• Godrej & Boyce Mfg. Co., Mohali [Winner—Large Enterprises]
Supply Chain Management	• Supreme Treon, Sanand -1 [Runner-up—SME (Indian)]
	• Supreme Treon, Sanand - 2 [Winner —SME(Indian)]
	• Cummins Turbo Technologies, Dewas [Runner-up —Large Enterprises]
	• Sany Heavy Industries India, Pune [Winner—Large Enterprises]
Machining Excellence	• Cooper Corporation, Satara, K-11 [Winner—SME (Indian)]
	• WILLO Mather & Platt Pumps, Chinchwad, Pune [Winner—SME (MNC)]
	• Cummins Turbo Technologies – India, Dewas & Pithampur [Runner-up —Large Enterprises]
	• Mahindra & Mahindra, Nagpur [Winner—Large Enterprises]
Human Resources	• Technosystems, Belgaum [Runner-up—SME (Indian)]
	• Supreme Treon, Sanand – 2 [Winner —SME(Indian)]
	• VE Commercial Vehicles, Dewas, MP [Runner-up —Large Enterprises]
	• MAN Trucks India, Pithampur, Dhar, MP [Winner—Large Enterprises]
Digital Manufacturing	• Pinnacle Industries, Pithampur [Winner —SME(Indian)]
	• Instor by Kider India, Pune [Winner—SME (MNC)]
	• Continental Automotive Components India, Bangalore [Runner-up —Large Enterprises]
	• Mahindra & Mahindra, Igatpuri Plant, Nashik [Winner—Large Enterprises]
Safety	• Supreme Nonwoven Industries, Bawal, Haryana [Winner —SME(Indian)]
	• Faurecia Interior Systems India, Kancheepuram, Chennai [Winner—SME (MNC)]
	• Volkswagen India, Pune Plant [Runner-up —Large Enterprises]
	• Powertrain Division, Fiat India Automobiles, Ranjangaon, Pune [Winner—Large Enterprises]
Green Manufacturing	• Supreme Treon, Sanand-1 [Winner —SME(Indian)]
	• Scania India Commercial Vehicles, Narasapura [Winner—SME (MNC)]
	• Schindler India Factory, Chakan [Runner-up —Large Enterprises]
	• BMW Group Plant, Chennai [Winner—Large Enterprises]
Innovation	• Lohia Auto Industries, Kashipur, Uttarakhand [Runner-up —SME(Indian)]
	• The Anup Engineering, Odhav, Ahmedabad [Winner —SME(Indian)]
	• Bajaj Auto, Akurdi, Pune [Runner-up —Large Enterprises]
	• Honda Cars India, Tapukara Plant [Winner—Large Enterprises]
Corporate Social Responsibility	• Burckhardt Compression (India), Pune [Runner-up —SME(MNC)]
	• Scania India Commercial Vehicles, Narasapura [Winner —SME(MNC)]
	• Bosch, Bidadi, Karnataka [Runner-up —Large Enterprises]
	• Mahindra & Mahindra, Farm Division, Kandivali [Winner—Large Enterprises]
Super Shopfloor of the Year 2018	• Supreme Treon, Sanand - 1 [SME]
	• Hyundai Motor India, Engine-2, Chennai [Large Enterprises]



Hyundai Motor India Ltd, Engine -2, Chennai is declared the Super Shopfloor of the Year 2018 (Large Enterprises)



Supreme Treon, Sanand -1 is declared the Super Shopfloor of the Year 2018 (SME)



Tata Hitachi Construction Machinery Company Pvt Ltd, Jamshedpur bags the Machie for excellence in productivity - Large Enterprises



Godrej & Boyce Mfg. Co. Ltd. Mohali is the winner in the category of Quality - Large Enterprises



Powertrain Division, Fiat India Automobiles Pvt Ltd, Ranjangaon, Pune wins Machie in the Safety - Large Enterprises



# Construction equipment market to grow

The upcoming infrastructural projects and increased government spending have led to an increase in construction activities

**T**he construction equipment market is projected to grow at a CAGR of 4.52 percent during the forecast period, to reach a market size of USD 199.18 Billion by 2025 from an estimated size of USD 146.17 Billion in 2018.

The upcoming infrastructural projects and increased government spending have led to an increase in construction activities. Additionally, with the advancements in technology, the equipment have become more fuel-efficient with lower emission levels and have enhanced safety and better-handling features.

Road roller is the fastest growing equipment in the market by equipment type. Its increasing use can be attributed to the increasing need for roads in developing countries such as India and China along with major road development projects such as China-Pakistan Economic Corridor (CPEC), which aims to connect China with Central Asia and create a modern silk route.

The tier-5 emission regulation engines are projected to have the largest market share, by emission regulation, of construction equipment by 2025. The countries in North America such as Canada, the US, and Mexico are speculated to have enforced these regulations by 2025. Additionally it is speculated that Japan will also follow these regulations once they are in effect.

The earthmoving equipment category is the largest segment of the construction equipment market, by equipment

Asia Pacific is the largest market for rental construction equipment. This can be attributed to its huge vehicle parc of construction equipment. With increasing population and urbanization, the demand for infrastructure development, housing, and office space in this region is projected to increase significantly over the next few years. Thus, it is expected to be the largest market for rental construction equipment.

category. A majority of construction equipment are used to carry, dig, spread, or move earth or materials. The material-handling equipment category is the fastest-growing segment as these equipment provide protection for materials, goods, and products in the process of manufacturing, distribution, consumption, and disposal.

Selective Catalytic Reduction (SCR) is projected to be the largest segment of the construction equipment market by af-


tertreatment devices. This is due to the stringent emission regulations that are speculated to be implemented in the Asia Pacific region.

Construction equipment that use alternate fuels such as CNG, LNG, and RNG are projected to grow at the fastest rate during the forecast period. As these fuels reduce emissions by 25-40 percent compared with diesel, their use as primary fuels in construction equip-

ment is projected to increase significantly.

Construction equipment with 200-400 hp power output are projected to be the fastest-growing segment. The market for these equipment in Asia Oceania is expected to grow at a faster rate as the requirement for infrastructure development in developing economies such as China and India is growing steadily. With the increasing government spending, these markets are expected to have higher growth.

Infrastructure is not only the largest but also the fastest-growing segment of the construction equipment market by application. Equipment such as crawler excavator, wheeled loader, motor grader, crawler dozer, asphalt finisher, and road roller are used to develop bridges, roads, and tunnels. Due to the increase in infrastructure projects, the demand for these equipment will also increase.

Asia Pacific is the largest market for rental construction equipment. This can be attributed to its huge vehicle parc of construction equipment. With increasing population and urbanization, the demand for infrastructure development, housing, and office space in this region is projected to increase significantly over the next few years. Thus, it is expected to be the largest market for rental construction equipment. 



Picture courtesy: JCB India Ltd

Source: Research and Markets



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# Changing dynamics of the workforce

James Thomas, Country Manager, Kronos, talks to The Machinist about how workforce management plays a crucial role in the manufacturing industry.

By Swati Deshpande

**Workforce management plays a vital role in the productivity of the overall manufacturing unit. What is your take on it?**

In manufacturing sector with decades of optimising Supply Chains, lean manufacturing processes the weakest link of the value chain has become the Workforce today. Most surveys today confirm CEOs and CFOs of manufacturing organisations stating employees or the workforce as the biggest competitive differentiator for innovation and productivity, impacting top line and bottom line directly.

Today, Information Technology (IT) is converging with Operational Technologies (OT) on the shopfloor to optimise, automate and enhance productivity through automation. The Overall labour effectiveness is driven by a combination of three factors – output, availability of resources to produce the output, and the saleable quality of that output. With measures like OEE, and TQM driving optimisation of output and quality of output, the human element of resource availability of the right skilled resources at the right time for the right job is increasingly becoming the delimiting factor to productivity. It is in this context that mature Workforce Management tools (WFM) are becoming a key requirement. An automated workforce management system helps determine key performance indicators of individual employees, departments,

The overall labour effectiveness is driven by a combination of three factors – output, availability of resources to produce the output, and the saleable quality of that output.

and facilities with an accurate picture of labour costs and performance. With an automated workforce management solution, people data becomes more actionable, with an ability to take insightful HR decisions to impact productivity and performance in real time on the Shopfloor, productivity -boosting and cost-saving decisions are far easier to be taken and it also helps in fairness and equitable decisions on the shop floor as regards workforce deployment.

**According to you, what are the major concerns in workforce management today?**

The changing workforce and workplace dynamics and industry demands have drastically impacted the way the workforce is managed across sectors. Organisations across industries and sizes have employees of different age groups and culture who are working together – the diversity challenge has become a nine headed hydra! Therefore, managing a group of Gen X



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might be completely different from managing millennials or Gen Z as an example on the demographic diversity challenge. As employees have different skill sets, experience and expectations, it becomes difficult for the management to engage with all employees and assess their work with a one size fits all standardisation. The concept of “Workforce of One” or personalisation along with standardisation is becoming increasingly important. And to have balance between a standardised approach and a personalised consideration to the high performers to optimise employee engagement and performance, one needs lot more granular transactional view to the daily events and activities that workers engage in. A weekly, monthly, quarterly, annual view while good and necessary is just not sufficient.

**Q What key trends do you see in the workforce management as far as manufacturing sector is concerned?**

The concept of Lean Labour has become a survival guide for manufacturers of all sizes. Savvy organisations realise they can apply Lean principles to the way they manage their workforce, too. Lean can help you increase workforce flexibility and agility so you can focus on driving top-line revenue growth. At the same time, Lean principles can help ensure labour is aligned with actual demand, which leads to shorter lead times, reduced costs, and a stronger bottom line.

Manufacturers in India today continue to rely heavily on contract employees as a flexible, cost-effective way to align labour to demand. This trend reduces costs and increases operational efficiencies by optimizing contract labour management effectiveness. Today’s manufacturers need a single, centralised solution that automates the entire contract labour management process and integrates seamlessly with ERP and finance systems to help them control costs, improve productivity, and minimise compliance risk for bottom-line results.

With growing importance of global trade and a diverse workforce with varied educational qualifications, skill sets and demographic presence, companies today are adopting various methods to manage their workforce effectively. Manufacturers are turning to AI and automation to make their HR and operations more strategic and compliant. AI and Machine Learning (ML) have simplified the delivery of data intelligence to help solve real business problems that directly impact an employee’s daily work routine. Also, with the onset of foreign direct investment (FDI) manufacturers are dealing with foreign countries with whom they do business making it essential for them to adhere to labour laws across countries.

Increasing employee engagement, better hiring policies, up-skilling and retirement of existing employees are some of the initiatives manufacturers are adopting to better manage their workforce. Additionally, manufacturers are becoming more global in their business strategies as they have realized that they can turn a country’s desire for economic development into an operational and competitive advantage through



The concept of “Workforce of One” or personalisation along with standardisation is becoming increasingly important.


strategic workforce management.

**Q What benefits does digitisation of workforce management system offer to manufacturing plants?**

Manufacturing is at the cusp of a Third Revolution and it is forecasted to evolve further in the years to come. With accelerated technological advancements, the way we innovate and produce goods has gone through a drastic change in the past years. The convergence of IT, OT and IoT is significant in Workforce Management too. Access to volumes of transaction workforce data through Kronos like WFM tools enable unmatched insight and reporting, thereby boosting the efficiency of the workforce and management of labour cost and corporate compliance.

The real-time data provided through automated workforce management systems help managers make informed schedule adjustments and monitor overtime to keep labour costs within budget. It allows companies to compare actual results to planned expectations of the workforce on a day, shift and department basis. It also helps corporates evaluate each facility and see which departments are managing labour well and the ones that are lagging behind. Moreover, from an employee’s perspective, digitisation helps employees determine corrective actions that can be taken to improve self-efficiency.

**Q Please tell us about your offerings for the manufacturing industry.**

Kronos solutions are purpose-built to best address the needs of employers and employees across various industries to optimally manage workforce, enhance productivity, optimize employee costs and minimize policy risks. Kronos solutions enable manufacturers plug cost and time leakages that proliferate in a contract workforce environment. 

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# Change is the only constant

Read on to know more about what the veterans think about the change that is happening in the industry and how do they adapt to new situations.

**A**udience at the Machinist Super Shopfloor Awards 2018 witnessed an interesting fireside chat on Dynamic Leadership for Dynamic Times. Dr. Pawan Goenka, Managing Director, Mahindra & Mahindra, Alain Spohr, Managing Director, Alstom India & South Asia, Dr. Andreas Laueremann, President & Managing Director, Volkswagen India and T. K. Ramesh, Chief Executive Officer, Micromatic Machine Tools Pvt. Ltd. participated in the discussion that was moderated by Editor of The Machinist, Niranjana Mudholkar.

In this insightful chat, the esteemed panellists discussed about the change that is taking place globally and ways to deal with and manage the same. In this regard, Dr. Laueremann mentioned, “Change has always been around the manufacturing industry. However, the difference between now and then is that speed of change has dramatically increased. And this change is coming from all sides. This is something new in our sector and this makes leadership challenging.”

Seconding the same, Dr Goenka said, “The biggest change that is happening in our country is people’s mindset. For ex-


“Every country has its own culture and tradition and that definitely reflects in the way businesses are run. Hence, the way of doing business is different in each country.”

**Alain Spohr**, Managing Director, Alstom India & South Asia



ample shopfloor worker that joined a company three decades back was really happy to work with the same company for 30 years with slow and steady progress. This is not the case anymore. Today, workers come with their own aspirations. As a result, the way we managed people yesterday is not the same as the way we manage them today.”

In this regard, Ramesh reacted saying, “If we need to be relevant to the time, we have to be cognizant about what is happening us.” Also he highlighted that earlier the change was restricted to limited geography. However today, a certain incident happening at the corner of the world may also impact us because of which the way we do business may change.

Adding to it, Spohr mentioned that “Every country has its own culture and tradition and that definitely reflects in the way businesses are run. Hence, the way of doing business is different in each country. It is a mark of intelligence and agility to pick what is good around the world and implement it in your business. I find the agility, flexibility and intelligence of Indians to analyse these things and bring it back in their lives in their own way is absolutely exceptional.” 



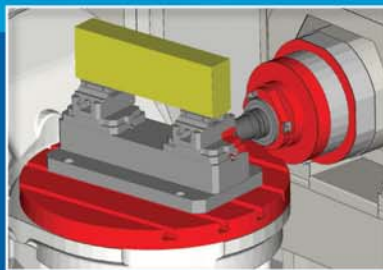
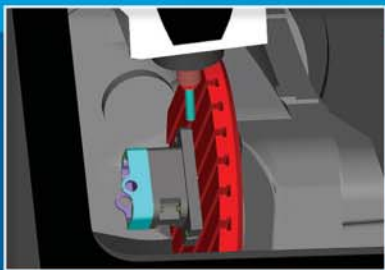
“Earlier the change was restricted to limited geography. However today, a certain incident happening at the corner of the world may also impact us because of which the way we do business may change.”

**T K Ramesh**, Chief Executive Officer, Micromatic Machine Tools Pvt. Ltd.



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## Mahindra opens a new assembly facility in Durban, South Africa

**M**ahindra South Africa has joined the league of South African vehicle manufacturers with the opening of a state-of-the-art vehicle assembly facility in Durban, KwaZulu-Natal.

The new vehicle assembly facility for Mahindra vehicles is located in the Dube Tradeport Special Economic Zone (SEZ) next to the King Shaka Airport in KwaZulu-Natal. Here the company will assemble the complete range of Mahindra Pik Up single- and double cab pick-ups.

The facility was constructed in partnership with AIH Logistics, a level 2-rated BBBEE company with proven credentials in the automotive sector. It represents an initial invest-

ment of R10 million in facilities and equipment.

According to Rajesh Gupta, the CEO of Mahindra South Africa, the decision to assemble vehicles in Durban follows Mahindra's exceptional growth since it first established an office here in 2004. "Mahindra has grown significantly since the launch of its first models in South Africa. In the last five years alone, it has grown its market share by a compound annual growth rate of over 4.6% a year, which puts us in a league of the five fastest growing companies in the same period. Much of this growth was achieved in a declining market, which indicates our increased acceptance and popularity in the South Africa market," says Gupta.

## GKN considering new wiring facility in India

**G**KN Fokker Elmo is discussing plans for a second manufacturing facility for wiring systems in India during a visit to Pune this week. GKN Aerospace's Fokker Elmo business already operates a Joint Venture for wiring systems in Bangalore. Business leaders travelled to Pune to strengthen local links and enter the next phase of discussions on a potential new manufacturing location in the region.

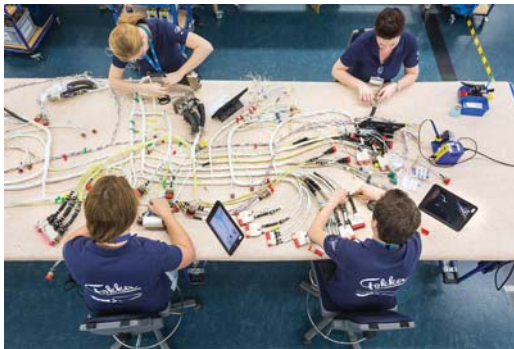
The meeting took place alongside the Dutch Minister for Infrastructure & Water Management, Her Excellency Cora van Nieuwenhuizen, the Minister of State, Home (Urban), Urban Development, Law & Judiciary & Parliamentary Affairs, Dr. Ranjit Patil and Gajanan Patil from Maharashtra Industrial Development Cooperation.

GKN Aerospace, GKN Driveline and GKN Powder Metallurgy have made significant investment in India in recent years. The three businesses operate eight locations

in India with 2000 employees and India is an important country in GKN Aerospace's global business model.

Pune offers favourable conditions in the areas of business development, labour, education & training and infrastructure. It also has an excellent location relative to the company's major customers in India. The plans also include the installation of proprietary wiring design and manufacturing system, a unique tool that is rolled out globally throughout all manufacturing locations worldwide to ensure the same high quality everywhere in the world.

Michiel Barendse, Managing Director GKN Fokker Elmo said: "India's growing economy and the presence of leading aerospace companies show that the important success factors are in place and in line with the needs of the aerospace industry. Being close to the customers is part of GKN Aerospace's long term strategy, we have received excellent support from the regional government and look forward to develop the next stage of our plans."



## Magna opens new aluminium casting facility in the United Kingdom

**M**agna has opened an aluminium casting facility in Telford, England, which will supply structural castings to Jaguar Land Rover. The new facility is approximately 225,000 square feet and is expected to employ 300 people. Magna management was joined by Jaguar Land Rover executives and members of local government to celebrate the grand opening of the facility.

The new facility will use Magna's patented vacuum die-casting process. The advanced lightweight aluminium castings help maximize strength and stiffness and minimize weight, which improves fuel economy, safety and handling. As electrified and hybrid powertrains become more common in the automotive industry, high-pressure aluminium castings can be a key factor in reducing overall vehicle weight.

"With this new aluminium casting facility, we have established a world-class center of excellence to bring the most advanced structural casting technologies to the U.K.," said John Farrell, president of Cosma International.

Ben Goater, general manager of Cosma Castings U.K. said: "The manufacture of aluminium castings is an important building block for the next generation of all-aluminium and multi-material vehicle architectures."



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## Samsung Research America opens AI Centre in Toronto, Canada

Samsung Research America (SRA), announced that it is establishing a state-of-the-art artificial intelligence (AI) centre in Toronto, as part of a new venture to tap into and contribute to the flourishing AI industry growing in Canada's largest city. The opening of the Toronto AI Centre comes on the heels of the company's global announcement of two additional and newly established AI Centres in Cambridge, UK and Moscow, Russia. The Toronto Centre will work in partnership with the company's Silicon Valley team to pioneer AI research and development for the region.

Located in Toronto's downtown core at MaRS Discovery District, the new Samsung AI Centre will contribute to building the connected future by accelerating the adoption of intelligence on multiple devices ranging from household appliances to cars. The Toronto AI Centre is a part of a network of research Centres dedicated to research and development in

the field of AI. The Centre is the second Samsung AI Centre to be established in North America, with the other in Mountain View, California. The North America AI Centres are led by senior vice president, Dr. Larry Heck, a renowned expert in machine learning for spoken and text language processing, who also co-leads the expansion of Samsung's AI Centres around the globe.

"Toronto and the GTA are epi-centres of machine learning and one of the world's foremost hubs for AI research and development. Home to not only world-class talent, but also some of the most innovative start-ups in the artificial intelligence field," said Dr. Larry Heck, Co-Head of Global Artificial Intelligence Research. "We are looking forward to contributing to this vibrant AI community and to help push the field forward as we move towards our goal of making all Samsung connected devices intelligent by 2020."

## BMW Group opens Research & Development Center in China



Recently, the BMW China R&D Center officially was opened in Beijing's Shunyi District. As a part of BMW Group Strategy NUMBER ONE > NEXT, the center is a significant step in expanding local innovation, and taking the Group's "In China, for China and the world" localization strategy one step further.

"For us, China is a driving force of innovation, a place of inspiration particularly in the field of electrification and digitalization – we think China is the lead market in these fields already today. This is why we began five years ago to set up a comprehensive R&D network in Beijing, Shanghai and Shenyang. And, we expect that the increase of our Chinese R&D activities and the collaboration with more and more top class Chinese tech companies will make a strong contribution to our global R&D outcome, especially in areas such as electro mobility and digitalization," stated Klaus Fröhlich, Member of the Board of Management BMW AG, Development, at the opening ceremony.

## Siemens expands four MindSphere Application Centers in India

Siemens in India announced the expansion of its Industry 4.0 offerings with the launch of four MindSphere Application Centers across the country. The centers will be located in Pune, Noida and Gurgaon (two). Siemens is the first company worldwide to set up 20 of these centers for digital customer applications in 17 countries. Each of the centers spans multiple locations in different countries and specializes in a particular industry in which Siemens is active.

At these centers, around 900 software developers, data specialists and engineers work together with Siemens customers to develop digital innovations for data analysis and machine learning. These new solutions are being developed on MindSphere, Siemens' open, cloud-based operating system for the Internet of Things (IoT). In the four MindSphere Application Centers in India, Siemens experts will work together with Siemens customers to co-create solutions, which will be part of over 100 digital projects that will transform the entire value chain, and deliver productivity, flexibility, speed and quality in the customer's operations.

## Airbus BizLab opens fourth campus in Spain

Airbus has expanded its global network of BizLabs by opening a fourth campus in Madrid (Spain) after Toulouse (France), Hamburg (Germany) and Bangalore (India). This milestone is part of Airbus' strategy to establish a global network of aerospace business accelerators. Madrid concentrates all Airbus businesses (Defence & Space, Airbus Helicopters, and Commercial Aircraft) and represents a strategic bridge between Europe and Latin America, a flourishing ecosystem for start-ups. Pedro Luzon who currently is Business Performance Improver at Airbus Operations in Spain will be the Head of BizLab in Madrid. In parallel, Airbus has launched its new call for projects worldwide with applications open until June 24th.



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# Super 'People'

Know more about the super individuals who have played important role in the Indian Manufacturing's growth story.

**A**t the fourth edition of The Machinist Super Shopfloor Awards, four individuals were conferred upon with the prestigious Machie trophy. These awards were bestowed for their immense contribution towards Indian manufacturing industry.

## Super Next Generation:

Sriram Viji, Deputy Managing Director, Brakes India, was declared as The Machinist Super Next Generation Award 2018. He has been instrumental in adapting future technologies. He's revolutionising the braking system by leveraging technology expertise and global partnerships. As a leader he has consistently pushed his company to innovate and offer path breaking technology to the market.

While accepting the award, Viji mentioned, "Thank you for this honour and recognition. I am humbled to receive this award in front of the prestigious audience. It is truly the ethos and value system of the entire TVS Group that has set the stage for the award like this."

Continuing further, he said "Change is something that is inevitable. In the automotive world, we talk about it every day. Although change is unpredictable, we do control lot of things about that change. One of the things that I focus on is to provide a true value based and ethical leadership for the change that is going on around us. And second thing that we look at is how do you create bandwidth for that change. This is one of the critical things. If we are so busy in what we are doing

today, then we don't have time to change for better tomorrow and we don't see it coming."

## Super Entrepreneur:

Sudhir Mehta, Chairman & Managing Director, Pinnacle Industries Ltd. was bestowed upon The Machinist Super Entrepreneur of the Year 2018 award. The award was conferred to him for the entrepreneurial skills. With his entrepreneurial skills and the quality of leading from the front, he has transformed many ideas into businesses.

While expressing his thoughts, Mehta said, "Thank you for this award. I think this is absolutely incredible time to be in India for all of us in the manufacturing industry. Coming decades promise enormous opportunities for the manufacturing industry. It is imperative for the manufacturing to grow in the country. In this situation, we need to make sure that India becomes manufacturing power house in the days to come. I am sure India will achieve its rightful position on the manufacturing landscape."

## Super CEO:

Dr. Pawan Kumar Goenka, Managing Director, Mahindra & Mahindra whose journey from Detroit to Kandivli has been inspiring, was honoured as The Machinist Super CEO of the Year 2018 award. While speaking at the awards ceremony, Dr. Goenka said, "Those who know me know that I am very passionate about Indian manufacturing. Nothing pleases me more than Indian manufacturing getting recognised all around the

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One of the things that I focus on is to provide a true value based and ethical leadership for the change that is going on around us.

**Sriram Viji**, Deputy Managing Director, Brakes India



I think this is an absolutely incredible time to be in India for all of us in the manufacturing industry. Coming decades promise enormous opportunities for the manufacturing industry.

**Sudhir Mehta**, Chairman & Managing Director, Pinnacle Industries Ltd



Indian manufacturing is not yet comparable to German manufacturing or Japanese manufacturing. Indian manufacturing should be at the top and not one amongst the top

**Dr. Pawan Kumar Goenka**, Managing Director, Mahindra & Mahindra Ltd.



The Indian market has always remained challenging and tough for German manufacturers. But it has been exciting as well. Also, the diversity here is mind blowing. In fact India is just not a country as it is a sub-continent."


**Dr. Andreas Laueremann**, President & Managing Director, Volkswagen India Pvt. Ltd.

world. Since the time I came back to India in 1993 the kind of change that I have seen on shopfloors is unbelievable. Back then it was hard to imagine the fact that Indian manufacturing would be exported to the Western world. But it's the truth today. The work is not done yet. Indian manufacturing is not yet comparable to German manufacturing or Japanese manufacturing. Indian manufacturing should be at the top and not one amongst the top"

Elaborating on the future of manufacturing, he said, "The change that I foresee happening in coming five years will be perhaps the biggest quantum of leap that the industry will be taking. In the auto industry - electric cars, shared mobility, safety norms, connected vehicles, etc. lie in the future. Agriculture has not changed in last 30-40 years in India. However, in next 5-7 years, we will see dramatic change in the Indian agriculture. It is difficult to comment on what transformation it would be but for sure it will be very different from what it is today. In fact, it doesn't matter what industry you are in, the dynamics are about to change and it calls for suitable leadership."

**Lifetime Achievement:**

The Machinist Lifetime Achievement Award 2018 award was bestowed upon Dr. Andreas Laueremann, President and MD, Volkswagen India. His career graph is definitely inspiring for the youngsters.

"Thank you for this honour. This occasion of receiving the The Machinist Lifetime Achievement Award makes me think about my journey. Being a German, I started my career in Germany and then I was sent around the world by the company. Argentina, China are some of the countries I have worked in. Now that I am in India, often I am asked various questions such as how is India? Where does it stand as compared to other markets? Such questions are difficult to answer as each country has something specific and unique to offer. The Indian market has always remained challenging and tough for German manufacturers. But it has been exciting as well. Also, the diversity here is mind-blowing. In fact, India is just not a country as it is a sub-continent." 

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Pushing Performance



## Tata Motors to deploy 1000 EVs for Maharashtra Government



**T**ata Motors has signed a Memorandum of Understanding (MoU) with the State Government of Maharashtra for deployment of 1000 electric vehicles (EV) across its range of passenger and commercial vehicles in the State. Partnering with a Tata group company, Tata Power Ltd, Tata Motors will facilitate setting up of EV Charging Stations in the State. The MoU boosts the Maharashtra Electric Vehicle Policy 2018 in accelerating the adoption of EVs in Maharashtra. Guenter Butschek, CEO & MD, Tata Motors signed the MoU in the presence of the Chief Minister of Maharashtra, Devendra Fadnavis. Additionally, the Chief Minister also flagged off five Tigor EVs at the Gateway of India, Mumbai. These vehicles were provided by Tata Motors to EESL as part of its tender. Speaking on the MoU signing initiative, Guenter Butschek, CEO & Managing Director, Tata Motors said, “Tata Motors is committed to the Government’s vision of e-mobility in India. We are excited to join forces with the Government of Maharashtra towards this endeavor. We are uniquely positioned to leverage the strength of our group companies to create an EV ecosystem. With our ready portfolio of EV offerings across our passenger and commercial vehicles, we are geared up to meet future requirements beyond the current tender commitments.”

On setting up of new EV charging stations in Mumbai in partnership with Tata Motors, Praveer Sinha, CEO & Managing Director, Tata Power, said, “We are committed to making Maharashtra EV ready and to the Government’s ambition of providing green technology solutions. We are happy to partner with Tata Motors to deliver on the Government and Group’s vision of reducing India’s carbon footprint and enabling the customers with a sustainable future. We are happy to present Maharashtra with various electric vehicle charging stations that cover the wide expanse of the State. With these installations, Tata Power continues to pursue sustainable practices by using technology to provide Maharashtra customers access to energy-efficient options with ease.”

## nVent enters India

Vent Electric plc has announced its launch in India as an independent, publicly traded company. The organization is a spin-off of Pentair plc (“Pentair”), a multinational diversified industrial company. nVent has a leading portfolio of electrical enclosures, electric heat tracing solutions, complete heat management systems, and electrical and fastening solutions that connect and protect critical systems across the globe where the cost of failure is high. Its innovative electrical solutions help maximize customer efficiency, improve utilization, lower installation costs as well as the total cost of ownership and minimize downtime.

“With the completion of this spin, nVent has achieved a major milestone in becoming a more focused, global leader in providing electrical connection and protection solutions to customers around the world,” said Beth Wozniak, nVent’s CEO.

Beth Wozniak added, “We are going to be a fast-paced, dynamic growth company, focused on our customers and moving with velocity. I am proud to be part of the nVent team and am confident in the strategy and portfolio we have in place to deliver long-term shareholder value.”

nVent customers include commercial builders, energy companies, data centers and industrial manufacturers. The company’s business – divided into three segments – centers on six well-established brands.

## Telangana government adopts e-mobility programme

**E**nergy Efficiency Services Ltd (EESL) under the administrative control of Ministry of Power, Government of India, signed an agreement with the Greater Hyderabad Municipal Corporation (GHMC), to lease out EVs and install EV chargers at its offices. The vehicles would be procured by EESL under the National E-Mobility Programme and will be supplied at a monthly lease rental of Rs. 22,500 per car.

Dignitaries present at the signing of the agreement included: Kalvakuntla Taraka Rama Rao, Minister for Municipal Administration & Urban Development, Industries & Commerce, Government of Telangana; Erik Solheim, Executive Director, United Nations Environment Programme and Renu Narang, Director (Finance), EESL. Marking the beginning of e-mobility in Hyderabad, Minister Rao flagged off the EVs. Speaking on the occasion, he said, “Hyderabad is India’s innovation hub, and is capable of setting an example for electric mobility adoption. It is our vision to achieve a sustained and phased migration to EVs in Telangana. Our agreement with EESL will be instrumental in meeting the state’s E-Mobility vision. We look forward to the GHMC EV programme as a successful pilot initiative to not only transform mobility, but also create the infrastructure for EV manufacturing as another economic opportunity.”

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## Fortum partners with Clean Motion to develop battery swap system for light EVs

In order to boost the sales of electric vehicles in India, clean energy provider Fortum has signed an agreement with Clean Motion, on offering sustainable mobility solutions through jointly developing a battery swap system, tailored specially for light electric vehicles in India.

The goal is to jointly develop a battery swap system for light electric vehicles with the aim to launch a pilot before end of 2018” on an existing Zbee cluster in India before further development and expansion in India. The primary target market for the initiative are the major taxi companies in India, and other organizations with large fleets of vehicles that are in need of high uptime in their operations. The ultimate vision is to enable all manufacturers that make or intend to make

light electric vehicles to receive an offer to use the swapping technology in their vehicles.

Fortum wants to see the adoption of electric light vehicles to really take off in India. Commenting on the same, Sanjay Aggarwal, Managing Director, Fortum India said, “Leveraging its expertise in e-mobility solutions, Fortum plans to transform mobility in India. The Indian Government has a vision to achieve fully electric mobility by 2030. Being a pioneer in providing charging solutions for electric vehicles in

the Nordics, Fortum plans to extend their service and be a prominent enabler towards the achievement of this vision in India as well.



## Ultraviolette Automotive to develop e-motorcycles & energy infrastructure

Ultraviolette Automotive Pvt. Ltd., an innovator in sustainable mobility and energy infrastructure, has confirmed that it is developing India’s first ecosystem of high performance electric motorcycles and future-ready energy infrastructure to accelerate the adoption of electric vehicles across India.



As part of its comprehensive EV roadmap, Ultraviolette Automotive, which recently raised Series A funding from TVS Motor Company, is currently building a motorcycle, that is driven by progressive design and energy efficient technology.

This motorcycle will outperform traditional ICE motorcycles in the 200-250 CC segment. Along with this, Ultraviolette is also setting-up a first-of-its-kind energy infrastructure that will ensure availability of energy-on-the-go.

Narayan Subramaniam, Founder and CEO, Ultraviolette Automotive said, “Our aim is to create excitement around the capabilities of electric vehicles and consequently increase preference for electric vehicles in the country. To realize this goal, we believe electric vehicles have to go beyond the purpose of basic commute and convenience, to being desirable and aspirational. We are working on creating an unmatched experience and a robust EV ecosystem that will surpass traditional ICE motorcycles in every aspect including design, performance and durability. We are also solving challenges associated with range anxiety and energy availability.”

## Siemens & Northvolt join hands for next generation battery cell

Siemens and Northvolt have recently announced a partnership for the development of best-in-class technology to produce high-quality, green lithium-ion batteries. The partnership, which will be supported by Siemens through an investment of EUR 10 million, also includes the supply of lithium-ion batteries.

To mitigate the effects of climate change, Europe is accelerating its transition to renewable energies. Electrification and an increased use of batteries is one of the cornerstones of this transition, enabling the large-scale conversion to sustainable transportation as well as a deep integration of renewable sources in the energy mix. With limited current and planned capacity in place, Europe is now facing a major battery deficit of within the next few years.

“We are happy to support Northvolt in building the battery factory of the future. With our Digital Enterprise portfolio, we contribute to a competitive battery cell production in Europe that fully exploits the benefits of software and automation: greater flexibility, efficiency and quality with shorter time to market,” said Jan Mrosik, CEO of Siemens Digital Factory Division.

“Northvolt is driving the battery production to build a battery with very low CO2 footprint. Our Digital Enterprise portfolio will support Northvolt in building a state-of-the-art battery plant. We are excited to go in as a partner in this project,” said Ulf Troedsson, President and CEO of Siemens Nordics.

Once completed in 2020, Siemens intends to purchase batteries from the factory, making Northvolt a preferred supplier. Siemens will support the partnership through an investment of EUR 10 million.





# Innovation is key to a clean energy future in Asia



Technology and innovation can play a significant role in Asia and the Pacific's push towards a low-carbon energy future, with the potential to provide countries in the region with universal access to cleaner and more affordable energy sources, according to participants of an international forum held at Asian Development Bank (ADB) headquarters.

"New technologies such as smart grids, large-scale battery energy storage, renewable energy-based microgrids with storage, waste-to-energy, carbon capture and storage, and artificial intelligence have huge potentials to accelerate the clean energy transformation," said ADB President Takehiko Nakao. "But technology by itself is not enough. Projects with advanced technologies must be accompanied by viable business models, stable regulation & smart policies to deploy the technologies."

Despite Asia and the Pacific's rapid growth over the past few decades, there remain large development challenges. In the energy sector, 440 million people still lack access to electricity in developing Asia. Securing energy access for these people, most of whom live in remote rural areas and islands, will depend on innovative technologies.

To showcase creative solutions to these challenges and promote the next generation of clean energy entrepreneurs, ADB launched in 2017 the New Energy Leaders Program. During the opening plenary of ACEF 2018, seven New Energy Leaders received awards for 2018 for their work in businesses ranging from off-grid power solutions to large-scale wind and solar, energy efficiency, and digital customer solutions using big data and analytics.

Support for clean energy forms a cornerstone of ADB's efforts to combat climate change. Clean energy offers a win-win solution of mitigating greenhouse gas emissions while meeting developing Asia's need for new and expanded energy sources.

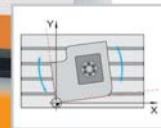
Source: Asian Development Bank

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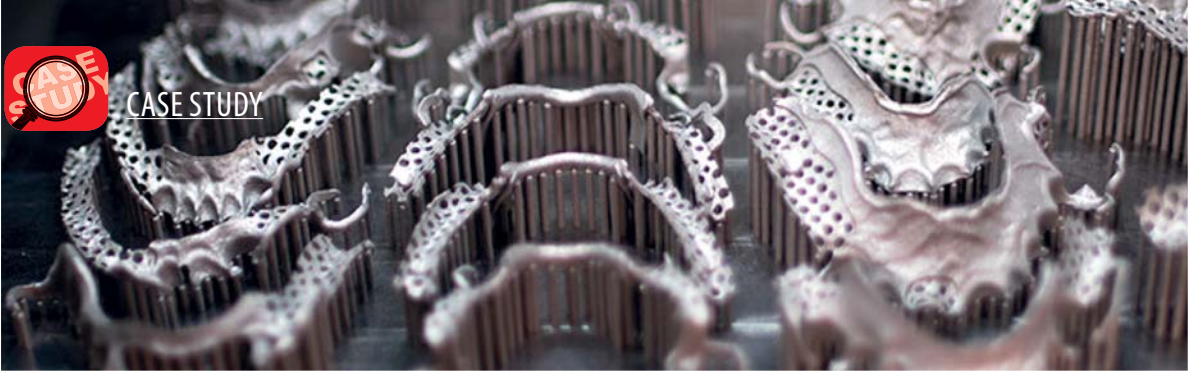
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# Accuracy with additive manufacturing

Metal additive manufacturing machine helps the dental laboratory.

**L**eading Australian dental laboratory, Proslab, has fully digitalised the manufacture of its cobalt chrome removable partial dentures (RPDs). The laboratory partnered with global engineering company, Renishaw, to install what is thought to be the first metal additive manufacturing machine for dental applications in Australia.

## Background

Proslab is a full service dental laboratory in Canterbury, Australia. The company was founded over 30 years ago and has always maintained a keen interest in cutting-edge technology. 15 years ago, Proslab became the first Australian dental laboratory to bring in CAD/CAM processes for metal frames for dentures.

Before working with Renishaw, Proslab introduced a partially digital workflow, using 3D scanning and design tools to design dentures. Once designed in CAD, the dentures were printed in resin, then using traditional lost-wax casting were manufactured in cobalt chrome. It was this traditional, uncontrolled, process that reduced the accuracy of the parts, despite careful design.

The company turned to Renishaw to overcome issues with human error and accuracy by incorporating a state-of-the art AM 400 metal additive manufacturing machine.

## Challenge

The lost-wax casting technique started with producing a CAD

design of the denture, which was then printed in resin and used to make the investment mould. The part would then be de-invested, trimmed and cast, before being cut and polished.

During the process, accuracy can be reduced by dimensional changes as a result of uncontrolled heating and cooling, varied cross-sections and incomplete casting or gas porosity.

“Achieving a high level of accuracy with lost-wax casting is difficult,” explained Damian Synefiás, CEO of Proslab. “This means frameworks often need to be reworked after being sent to the dentist and fitted to a patient.”

The most accurate method on the market to manufacture removable partial dentures is additive manufacturing. However, incorporating this technique involved significant change to the company’s internal processes and business model. To successfully implement the new technology, Proslab required training and support, which is not universally offered by additive manufacturing system providers.

## Solution

Proslab turned to Renishaw to fully digitalise its manufacturing process using additive manufacturing.

“To demonstrate the accuracy of the process, Renishaw manufactured sample parts at its Healthcare Centre of Excellence in Miskin, near Cardiff, UK,” explained Alex Harris, Applications Engineer at Renishaw. “Our dental production facility runs daily, so there was extensive data to prove that additive manufacturing was a viable if not ideal solution.”

Impressed by the quality of the sample parts, Proslab purchased Renishaw’s AM 400 metal additive manufacturing system. The machine enables the production of removable partial dentures directly from a CAD file, eliminating the additional casting step. Frameworks are built in 40-micron layers of CE marked cobalt chrome powder and built by laser powder bed fusion (PBF), using a high-powered ytterbium fibre laser.

To ensure the transition was smooth, Renishaw’s dedicated additive manufacturing team conducted a week-long training course with Proslab’s staff. Renishaw also offered ongoing

“Directly printing from a CAD file means we have reduced the number of in-house remakes due to error by 100 per cent. If any error were to occur, we’d quickly be able to identify the source and amend it.”  
**Damian Synefiás, CEO**  
of Proslab

## In a nutshell

### Challenge:

Change internal processes and business model, while re-training and supporting staff.

### Solution:

A fully digitised manufacturing process using Renishaw’s AM 400 additive manufacturing system.



support from Renishaw Oceania, in Mulgrave, Victoria. The Australian team remains in contact with Proslab to answer any questions.

“Training and support was our priority when purchasing the machine,” explained Synefias. “Throughout the process, Renishaw offered outstanding technical support and training to meet this requirement. We were confident in our investment as we trusted the product from the very beginning. This trust, combined with the exceptional support, meant that there was not one moment during the process where we felt uncomfortable.”

**Results**


“Proslab is now able to produce the most accurate frameworks possible,” continued Synefias. “Directly printing from a CAD file means we have reduced the number of in-house remakes due to error by 100 per cent. If any error were to occur, we’d quickly be able to identify the source and amend it.” Because of the improvement in accuracy that the AM 400 offers, Proslab can now ensure each framework is a perfect fit for the patient. This helps to improve a prosthetist’s service and repu-

tation, benefits patients by offering improved fit and removes any delays that may occur if the framework is not right first time.

“The frameworks we produce are now guaranteed to fit every time, which means we have been able to raise turnover,” said Synefias. “The difference in fit has been amazing – we are now gaining more customers for it as we can ensure that customers will receive the best possible fitted dentures.

“By cutting out the casting step, we can now produce removable partial dentures in half the time,” continued Synefias. “We save an entire day of processing, which means we have been able to upskill our casting staff into manufacturing roles. Staff has responded well to the new format and we’ve had a significant boost in morale, as they have the peace of mind that parts will be correct.

“Proslab is the first Australian dental laboratory to incorporate additive manufacturing, and we now have access to the most up to date technology in the world,” added Synefias. “We have also improved turnaround times to a five-day cycle, improving the service to our clients.

“We required a high level of support and the service we received has been excellent and, in my opinion, Renishaw has been perfect. The project has been such a success that we plan to purchase another machine,” concluded Synefias .

Source: Renishaw



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# Vibration measurement in process monitoring

Vibration measurement is an important task.

**M** easurement of vibrations and accelerations plays an important role in process monitoring on machine tools. Vibration measurements are used in different ways for the safeguarding and stabilization of processes: as signals from the machine control or from external sensors. Vibration measurement is made as close to the process as possible. Sensors are integrated directly into the spindle or placed on the workpiece holder.

## How is acceleration measured?

Acceleration can be measured with a sensor integrated into the spindle or with external sensors placed in the machine. A transducer then converts the values for the process monitoring system into information about the vibration speed. ARTIS offers sensors in the measurement range between 10 Hz and 5 kHz for acceleration measurement on one to three axes. Acoustic emission, a special form of vibration, is measured with external sensors and transmitted over a separate fieldbus. The sensors for acoustic emission cover the measurement range of 10 to 250 kHz.

## With learning curve

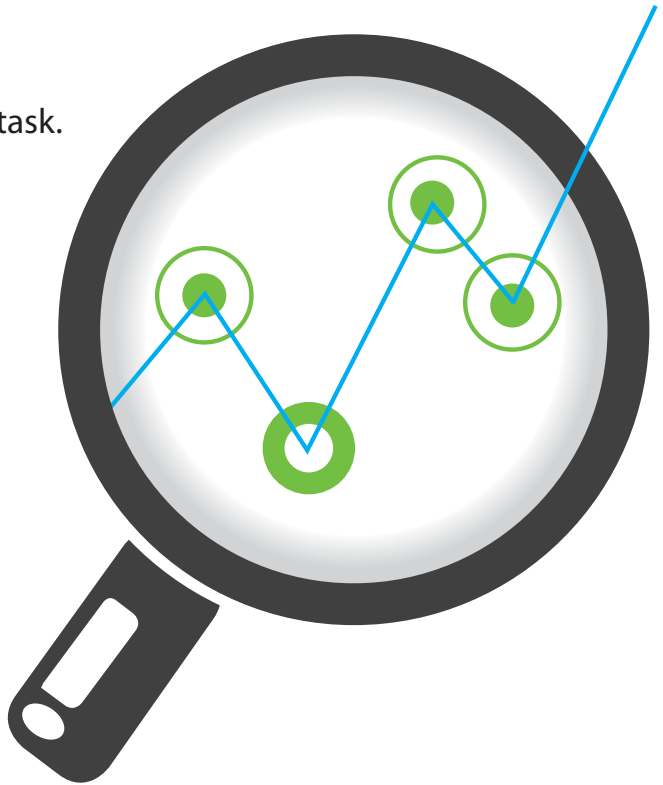
In mass production, monitoring is performed using a comparison procedure. A learning curve is generated over one or more machining processes; signal peaks and troughs are used to monitor breaks; and the area under the curve (cutting work) is used to monitor wear and missing.

## Collision monitoring as well

Acceleration sensors can be used for collision monitoring. When tool and workpiece collide, which the sensor detects from the sudden change in material vibration, the machine shuts off immediately. Here, the measurement means a gain of approx. 200 milliseconds until the machine's overload protection would take hold. It is exactly during this time after a collision that serious damage results, because the machine at first "reacts" to resistance with increased power.

## Not detectable with the naked eye

Run-out errors in the workpiece, e. g. during centerless grinding, cannot be detected with the naked eye, but generate clear signal peaks, which provide an early warning of problems and which schedule the workpiece for rework. Vibration measure-



Experiments show that an increase in cutting speed of only 10 percent results in a significant decrease in the vibration speed.


ment thus contributes to quality assurance, supported by process monitoring systems.

## Optimization in the ongoing process

Vibration measurement is also used for process optimization, such as in gear cutting with profile milling cutters. Tool wear here depends on the vibration speed of the tool. Experiments show that an increase in cutting speed of only 10 percent results in a significant decrease in the vibration speed. So here, optimization can be

achieved by simple means. Additionally, with Adaptive Control, the vibration behavior at the milling head can be optimized in the ongoing process.

## Comprehensive

Process monitoring looks at the entire process complete with workpiece, machine tool and peripheral equipment. The knowledge gained can be used in many ways for safeguarding production. The examples described show the benefits of vibration measurement for process monitoring, machine protection and process optimization. 

Source: Marposs India

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# Ways to reduce emissions and water use

Learn how Maruti Suzuki cumulatively saved over 8.3 lakh tonnes of CO2



## Dry Wash to save water

Use of Maruti Suzuki's Dry Wash system, saved a whopping 285 million litres water in 2017-18. Nearly, 3 million vehicles were cleaned using Dry Wash system in 2017-18. Maruti Suzuki uses the environment friendly Dry Wash system to conserve water, shorten wash time and improve final wash quality. Presently, 588 Maruti Suzuki workshops across 186 cities use the Dry Wash system.

## Product designing

On product designing, Maruti Suzuki has developed the full vehicle virtual validation capability, which has helped to induce efficiency in the product development processes. This leads to reduced physical testing of vehicles. Such virtual validation techniques help to reduce carbon footprint.

**M**aruti Suzuki India has introduced a series of innovations across its products and manufacturing processes that contain emission and lower water use.

The Company has saved an estimated over 8.3 lakh tonnes of CO2 emission over the past decade through introduction of CNG, LPG and Smart Hybrid vehicles.

The innovative next generation HEARTECT platform lowers the CO2 emission by 6-8 percent while offering superior performance and safety. Blockbuster models such as the Baleno, IGNIS, Swift and Dzire, built on the HEARTECT platform, are thus more efficient with superior performance. These models meet the advanced safety norms, leading to a win-win for customers and the environment.

At its manufacturing facilities, Maruti Suzuki has reduced water consumption per vehicle manufactured by six percent in 2017-18, compared to the previous year. At the same time, there is a one percent reduction in CO2 emission while manufacturing every vehicle over the past year.

Kenichi Ayukawa, MD & CEO, Maruti Suzuki, said, "We are working systematically to reduce vehicle emissions and the impact of manufacturing on the environment. The Company has been consciously introducing innovative technologies to make products environment friendly. Our HEARTECT platform helps us to lower CO2 emissions between 6 to 8 per cent even as it enables us to offer a superior drive performance. We will continue our focus on investing in new technologies and further bring down CO2 emissions per vehicle."

He added, "As part of our effort to use renewable source of energy, in this fiscal we plan to install a 5MW solar power plant at our Gurgaon campus. At Manesar, our existing 1MW solar power plant will be complemented by an additional 0.5MW solar plant."


"Maruti Suzuki is working systematically to reduce vehicle emissions and the impact of manufacturing on the environment. The Company has been consciously introducing innovative technologies to make products environment friendly."

**Kenichi Ayukawa**, Managing Director & CEO, Maruti Suzuki

## Promoting Green value chain

Maruti Suzuki has a stringent Green Procurement Policy in place where in all partners are encouraged to align with Green Procurement guidelines. More than 85 percent vendor plants have already acquired ISO -14001 Certification and others are on course.

The Company will soon adopt International Material Data capturing system to study parameters like ASR (Automotive Shredder Residue), RRR (Reuse, Recycle and Recover) and substances of concern (like Pb, Hg, Cd, Cr) across all models so that prohibited substances can be identified and eliminated.

This initiative will strengthen end of life system (ELV) for vehicles. For exports Maruti Suzuki will align with the European Union system of classification, labelling and packaging of chemical substances adopt VCI Packaging (Volatile Corrosion Inhibitors) guidelines for packaging materials. By aligning with EU norms the disclosures on components will be comprehensive. 

Source: Maruti Suzuki India Ltd.



# Global business growing despite challenges

**D**espite recent softening, global economic growth will remain robust at 3.1 percent in 2018 before slowing gradually over the next two years, as advanced-economy growth decelerates and the recovery in major commodity-exporting emerging market and developing economies levels off, the World Bank said.

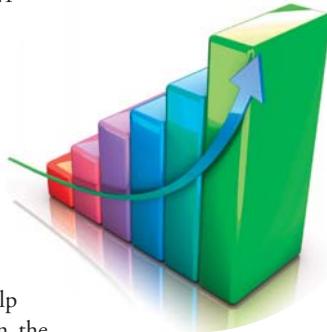
“If it can be sustained, robust economic growth that we have seen this year could help lift millions out of poverty, particularly in the fast-growing economies of South Asia,” World Bank Group President Jim Yong Kim said. “But growth alone won’t be enough to address pockets of extreme poverty in other parts of the world. Policymakers need to focus on ways to support growth over the longer run—by boosting productivity & labor force participation—in order to accelerate progress toward ending poverty & boosting shared prosperity.”

Activity in advanced economies is expected to grow 2.2 percent in 2018 before easing to a 2 percent rate of expansion

next year, as central banks gradually remove monetary stimulus, the June 2018 Global Economic Prospects says. Growth in emerging market and developing economies overall is projected to strengthen to 4.5 percent in 2018, before reaching 4.7 percent in 2019 as the recovery in commodity exporters matures and commodity prices level off following this year’s increase.

Analysing growth in South Asia region, World Bank said growth is projected to strengthen to 6.9 percent in 2018 and to 7.1 percent in 2019, mainly as factors holding back growth in India fade. Growth in India is projected to advance 7.3 percent in Fiscal Year 2018/19 (April 1, 2018-March 31, 2019) and 7.5 percent in FY 2019/20, reflecting robust private consumption and strengthening investment. Pakistan is anticipated to expand by 5 percent in FY 2018/19 (July 1, 2018-June 30, 2019), reflecting tighter policies to improve macroeconomic stability. Bangladesh is expected to accelerate to 6.7 percent in FY 2018/19 (July 1, 2018-June 30, 2019).

Source: *The World Bank*



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# Defence needs vibrant ecosystem

ASSOCHAM-KPMG joint study talks about how public and private enterprises' participation will encourage the growth of defence manufacturing.

India's gross defence budget is expected to reach US\$ 112 billion (bn) by FY27 from \$45 bn announced by the Government of India in 2018-19, owing to significant steps been taken by the Centre to bolster country's position as a major aerospace and defence power, noted a recent ASSOCHAM-KPMG joint study.

The study titled, 'Creating a level playing field to facilitate Make in India in defence,' jointly conducted by The Associated Chambers of Commerce and Industry of India (ASSOCHAM) and global professional services firm KPMG also noted that while in 2018-19 the budgetary increase was a meagre 7.8 per cent over the previous year, it is expected to clock an estimated compound annual growth rate (CAGR) of about 11 per cent until FY27.

It said that country's capital expenditure for defence procurement is expected to exceed \$250 bn over the next 10 years, primarily to replace the Soviet-era vintage equipment and meet the growing modernisation needs of Indian Armed Forces. However, out of this the domestic industry would only be able to manufacture defence equipment worth just about \$80 bn while rest of it would have to be imported.

Thus, the study suggested the government to incentivise private enterprises for developing large scale research and development (R&D) and manufacturing capabilities.

It said that a vibrant domestic manufacturing ecosystem that includes both public and private defence manufacturing entities is essential for success of 'Make in India,' in the defence sector.

## Issues plaguing defence sector

The study also noted that despite large quantum of opportunities, fast growing economy and availability of skilled talent pool, India has achieved very limited success in terms of aerospace and defence self-reliance.


It further said that highly protracted procurement timelines and cancellation of tenders together with tenders awarded based on lowest cost and non-existence of a level playing field are certain key issues in the defence procurement process.

Besides, issues like awarding tenders to defence public sector undertakings (DPSUs) on nomination, higher multiplier for offset discharge through Defence Research and Development Organization (DRDO), difference in cost of capital resulting in undue advantage for foreign players/DPSUs.

The study suggested that government should treat private players in defence industry as partners rather than mere equipment/service providers as similar approach had been highly successful in space and atomic energy programs.

India's capex for defence procurement is expected to exceed \$250 bn over the next 10 years.

With an aim to provide a level playing field and boost defence manufacturing in India, the ASSOCHAM-KPMG study gave following recommendations to MoD:

- Award defence tenders only through competitive bidding.
- Offer equal multiplier on offsets for Toll Operate Transfer (TOT) to all public and private Indian entities and create a mechanism for priority sector lending or soft loans for private defence manufacturers.
- Exclusively reserve designated programs only for competitive bidding among private shipyards only as a short-term measure to utilise vacant capacity.
- Develop an equitable payment structure without significant back-ended payments and include provisions for imposition of penalties in case of delayed payments.
- Avoid conflict between production and procurement functions.
- Include provision for cost escalation in defence procurement contracts on lines of Indian Railways and Department of Atomic Energy.
- Permit private players to provide indemnity bonds in lieu of bank guarantees to obviate additional financial burden imposed on them. 

Source: ASSOCHAM







## India develops indigenous lithium ion battery

Central Electro Chemical Research Institute (CECRI), Karaikudi, Tamil Nadu under Council of Scientific & Industrial Research (CSIR) and RAASI Solar Power Pvt Ltd have signed a Memorandum of Agreement for transfer of technology for India's first Lithium Ion (Li-ion) Battery project. A group at CSIR-CECRI headed by Dr Gopu Kumar has developed an indigenous technology of Lithium-ion cells in partnership with CSIR-National Physical Laboratory (CSIR-NPL) New Delhi, CSIR- Central Glass and Ceramic Research Institute (CSIR-CGCRI) Kolkata and Indian Institute of Chemical Technology (CSIR-IICT) Hyderabad. CSIR-CECRI has set up a demo facility in Chennai to manufacture prototype Lithium-Ion cells. It has secured global IPRs with potential to enable cost reduction, coupled with appropriate supply chain and manufacturing technology for mass production. Currently, Indian manufacturers source Lithium Ion Battery from



China, Japan and South Korea among some other countries. India is one of the largest importers and in 2017, it imported nearly 150 Million US Dollar worth Li-Ion batteries. Union minister for Science & Technology Dr Harsh Vardhan said, "It will give tremendous boost to two flagship programmes of Prime Minister Narendra Modi – increasing the share of Clean Energy in the energy basket by generating 175 Giga Watts by 2022, of which 100 Giga Watts will be Solar

and the second, National Electric Mobility Mission, to switch completely to electric vehicles by 2030." Raasi Group will set up the manufacturing facility in Krishnagiri district of Tamil Nadu close to Bangalore. "We want to bring down the cost of cell manufacturing below Rs.15,000/- per KW to replace Lead Acid Battery," said Narasimhan. "We also have plans to make Lithium Ion battery for solar roof top with life span of 25 years to make it affordable enough to drive the Photo Voltaic segment."



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## High-precision and flexible 5-axis grinding center

The new Profile Line from Ewag is designed for efficient and flexible machining of exchangeable carbide cutting inserts. The machine is manufactured in close cooperation with sister company Walter Maschinenbau GmbH, and is finished with the tooling and software expertise of Ewag AG. This union produces a highly efficient grinding center, which can grind the highly complex exchangeable cutting insert geometries, including the interface, in high quality.

With innovative technology, the Profile Line ranks in the top league when it comes to the efficient manufacturing of these parts. For example, a smart integrated six-position wheel changer with integrated coolant supply ensures optimal tool selection and consequently an optimal metal removal rate for the sintered blanks. A further highlight for autonomous multiple-shift operation is the smart integrated flexible automation with a six-axis Fanuc robot. Customer-specific pallets can be accommodated in the user-friendly ro-



**Highlights**

- For exchangeable cutting inserts
- Smart integrated six-position wheel changer
- Acceptance of customized pallets
- Vision system for part detection
- Benchmark software ProGrind and Toolstudio
- Ewag tooling expertise (Smart Chuck®)

bot cell. A high-resolution CCD-HD vision system is optionally available for loading grid pallets using a magnetic gripper. Cleaning, reclamping and centering stations can be integrated as options and are adapted to the customer-specific product portfolio.

The creation of complex geometries for exchangeable cutting inserts on the machine also requires a perfect application software. But the Profile Line offers more: Benchmark software ProGrind from Ewag paired with Helitronic Tool Studio from Walter. This unique combination of both machine tool manufacturers makes the machine an absolute highlight in our portfolio.

The scope of application of these very varied exchangeable cutting inserts is raised to a whole new level. Even complex geometries in drilling or milling applications can be ground in a single clamping with

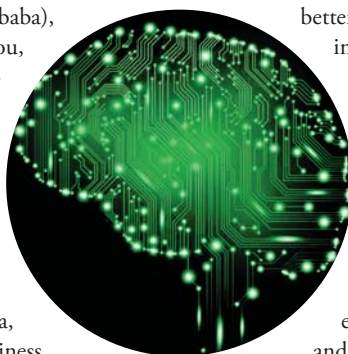
the ultra-precise interfaces of the exchangeable index able inserts. The gain in precision and productivity is hugely increased.

In addition, use of the Fanuc control system ensures a high degree of reliability, availability and ease of use for the user.

### UPDATE

## SDLG and Alibaba announce new partnership

SDLG and Alibaba Group Holdings (Alibaba), which is headquartered in Hangzhou, China, have announced a new partnership aimed at improving and enhancing intelligent manufacturing techniques at SDLG's assembly plants in China. SDLG, which is majority-owned by Volvo Construction Equipment, is a construction equipment manufacturer based in Linyi, China, that produces thousands of machines each year. By partnering with Alibaba, a global leader in B2B e-commerce and business intelligence technologies, the company hopes to use such innovations as artificial intelligence, machine-to-machine communication and intelligent devices to modernize its manufacturing. The goal is to boost productivity and reduce waste in its factories, while still delivering high-quality, reliable products to its customers. Immediately, SDLG plans to begin using Alibaba's cloud technology to improve procurement and supply chain sourcing, for example, which should help the company become more flexible in its production, as it can



better shift among supply partners to meet changing market dynamics. Also, it will use Alibaba's business intelligence tools to analyze the data of its current operations, which will help the company make more informed business decisions in the future.

"SDLG has been steadily investing in its production processes for years, and this partnership with Alibaba will take these efforts to a new level," said Wen Degang, general manager of SDLG. "With the deep insight and analytics that Alibaba's business intelligence expertise can bring, SDLG can further take the lead in such efforts as supply-chain sourcing, lean production and digital manufacturing to increase flexibility, operational efficiency and more." SDLG's intelligent or "smart" manufacturing processes already include mechanisms that optimize its machine design process, its production and sales pipelines, for example. Tools provided by Alibaba through the new partnership will give SDLG insight into its own business operations at a level not previously seen.



## HP and Siemens enhance strategic partnership

At Siemens PLM Connection Americas 2018, HP Inc. and Siemens expanded their longstanding collaboration to enable even more advanced functionality across a broader set of Siemens PLM software to change the way users can design and manufacture with HP's Multi Jet Fusion 3D printing technology. Siemens' NX and Solid Edge Software deliver support for Full-Color 3D Printing Capabilities through HP Multi Jet Fusion. With the latest releases, Siemens, a leader in digital innovation software, and HP, the global industry leader in 3D printing, will enable users of Siemens' NX software and Solid Edge software to design and produce full color 3D-printed parts.

"Our users will now be able to apply the power and flexibility of Siemens' NX and Solid Edge product design software to HP's groundbreaking 3D printing technology, opening a world of new design possibilities with the availability of full-color parts," said Tony Hemmelgarn, president and CEO, Siemens PLM Software. "Adding the full-color capabilities of HP's expanded Multi Jet Fusion platform models.

to Siemens' market-leading design and manufacturing solutions creates an immense new set of possibilities for products and applications," said Stephen Nigro, President of 3D Printing, HP Inc.

Siemens and HP share the objective to accelerate the digital transformation of the manufacturing industry, providing all of the necessary capabilities, from generative design for product innovation through 3D printing for industrial-scale manufacturing. Through generative design, companies can automate innovative designs directly from functional requirements which can result in enhanced functional performance for parts and products. Using HP Multi Jet Fusion technology, companies can manufacture these innovative parts more economically at larger production volume.

Together, HP's 3D printing solutions and Siemens' technology combine in a single integrated solution that enables businesses to reimagine products, reinvent manufacturing and rethink business



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## Energy efficient enclosure cooling unit

Rittal's Blue e+ cooling units are a perfect answer to the demanding needs in enclosure cooling. The all-new hybrid cooling technology by Rittal has taken the cooling units' energy efficiency to a whole new level.

Sensitive electronic components in enclosures have to be protected and cooled.

Electrical and electronic components used in industrial applications such as switchgear, drives, metering components, indication lamps, protection relays, overload relays, etc. dissipate heat during their regular operation. The dissipated heat tends to build up inside the enclosure housing these active components. This is further amplified by high ambient temperatures during hot summers.

It is important to maintain the temperature inside an enclosure within a particular range since excessive heat build-up inside an enclosure may cause failure of the above said active components. Such failures hamper the production & manufacturing operations and could be disastrous at certain times. This also increases downtime and cost to the organization.

### The e+ principle – The most efficient way of cooling

Rittal's Blue e+ cooling units are based on an innovative hybrid cooling technology keeping in mind the most compelling needs of the industry – the energy efficiency. The key features of the e+ technology are:

- The active cooling circuit with speed regulated components for demand based cooling



- Integral heat pipe for passive cooling – dissipates heat from enclosure as soon as ambient temperature falls below the set point

### Key benefits

The Blue e+ cooling units offer wide array of benefits which include:

- Energy efficiency – 75% in average due to hybrid technology.
- Versatile – Globally standard product with multi voltage capability
- User friendly – Intuitive operation due to touch display and intelligent interfaces
- Safety - Longer service life due to component-friendly cooling. Constant temperature inside the enclosure.
- In Standard IP55 and Nema Type 12 integrity to the enclosure
- Installation in semi-outdoor applications
- Ready to use from -20°C to 60°C
- Possible voltages:  
110V - 240V; 1-; 50-60Hz  
380V - 480 V; 3-; 50-60Hz

The working of Blue e+ cooling units is based upon seasonal energy efficiency ratio (SEER), which is a class leading value for enclosure cooling units.

For further info, please contact:

Rittal India Pvt. Ltd.

URL: [www.rittal-india.com](http://www.rittal-india.com)

## UPDATE

## LAPP is unifying its global brand identity

LAPP, experts in connection technology, has unified itself to one brand. By using the name LAPP in uniformity, the family company is underlining its international alignment and positioning themselves as world leader in connection technology. In future, national subsidiaries and departments will all operate under the name LAPP - one name and one logo for the company across the world, offering its customers the same outstanding service at all times, wherever they are. The new brand identity was on display for the first time at the Hanover Trade Fair this year. Hereafter, the family name will represent the company's fundamental values - focus on success, customers, innovation and family.

The new branding is LAPP's response to the fact that what was originally a cable manufacturer has developed into a provider of connection solutions. Name affixes such as "Kabel", "Cable" or "Cablo", which have been used in many countries

since the company was founded in 1959, will disappear. In recent years, LAPP has successfully developed into a provider of integrated solutions and branded products for numerous industries and applications; as evidenced by the positive results for the past financial year which saw a 13.9 per cent increase of global turnover. "Now is the right time to have a uniform name worldwide and a unified logo to link everything together," explains Chairman Andreas Lapp. Customers and their needs were at the heart of the decision. "These days it is no longer so important in which country our customers buy our products and where they are delivered to - we've been working as an international team for a long time. It is a logical progression for our external identity to reflect that. And what's more: that is exactly what our customers expect," Andreas Lapp continues.

Source: Lapp India

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## Changing liners the clever way with drylin W replacement bearings

Unlimited service life of drylin linear rails thanks to the new Exchange solution, a new kind of lubrication-free bearing.



The motion plastics specialist relies on liners made of high-performance polymers to ensure that igus linear guides slide silently and precisely. In order to make changing them even easier in extreme situations, igus has now developed a new replacement bearing. Unlock bearing, push liner out and replace it. The principle of the drylin W Exchange bearing is very simple. With the help of a free mounting tool, the liners can be replaced directly on the linear rail in just a few seconds. The maintenance company is thus able to save time and money.

Previously, if replacement of the lubrication-free bearing liners in a linear guide rail was due, for example in the case of extremely abrasive sand or glass dust, the entire linear carriage had to be pushed off the rail. For linear axes or multiple-axis linear robots with a toothed-belt drive, this meant a lot of assembly work and also machine downtime. igus has therefore developed a durable replacement bearing for its drylin W linear guides. The bearing enables easy replacement directly on the linear rail. As during a pit stop in Formula 1 racing, the replacement bearing can be changed very quickly and without complication, as a result of which downtimes are reduced to a minimum. The bearing, the linear guide or linear axis can therefore be put back into service and be "productive" within just a few seconds. A practical, free tool enables safe installation in no time at all.

The bearing enables easy replacement directly on the linear rail. As during a pit stop in Formula 1 racing, the replacement bearing can be changed very quickly and without complication, as a result of which downtimes are reduced to a minimum.

The principle of the drylin W Exchange bearing is very simple. With the help of a free mounting tool, the liners can be replaced directly on the linear rail in just a few seconds. The maintenance company is thus able to save time and money.

### Easy linear bearing change without complication

With the help of a simple screwdriver, the side cover of the linear carriage can easily be detached and removed. With the free tool supplied, which the user can also 3D print himself, the liner is pushed out of the carriage and directly removed from the rail. The new bearing made of the wear-resistant and abrasion-resistant high-performance plastic iglidur J200 is then clipped onto the rail and located into the carriage with the mounting tool. The side cover is then placed on the carriage to complete the bearing replacement process. The practical advantages of this are that the rail cannot be damaged and replacement takes place directly on the system. A pin located in the middle of the side cover secures the liner in the carriage. Alternatively, replacement can also be carried out with a screwdriver. On the new liner and in the carriage, igus has provided special recesses for this purpose. The new Exchange bearing can currently be retrofitted for all existing drylin W systems of size 10 such as linear guides, linear axes and linear robots. Further sizes are currently being planned.

For more information, contact:  
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### Simplified safety observation for overall application

The Co-act EGP-C is supplied as a completely pre-assembled unit with the right interface for the cobots of KUKA, FANUC or Universal Robots. Interfaces for robots from other manufacturers are possible upon request. Furthermore, programming modules are envisaged for all conventional cobots which will further reduce the commissioning effort. The entire regulation and power electronics are fitted in the interior of the gripper, meaning they don't take up any space in the electrical cabinet. Brushless and thus maintenance-free servomotors as well as a powerful junction roller guides guarantee a high level of efficiency, and

At SCHUNK, the Co-act EGP-C is already prototypical of an HRC workstation in gripper assembly. Here, the worker takes on assembly and quality control, while the robot removes adhesive residues on a sharp-edged extraction plate with the gripper.



transforms it into a dynamic and high-performance expert for demanding handling of small and medium-sized parts. Within the reliable finger length, the gripper fingers obtain an approximately constant gripping force and speed over the entire stroke. In order to make the collaboration with the operator as fluid and as intuitive as possible, the gripper is fitted with LED lighting in traffic light colours, by means of which the user can signal the respective condition of the module. The certified small parts gripper will be available in various sizes from the second quarter of 2018. , and size 40 will be available first with finger stroke 6 mm, and a maximum workpiece weight of 0.7 kg.

For more information, contact:

Satish Sadasivan

SCHUNK Intec India Private Limited

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