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ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

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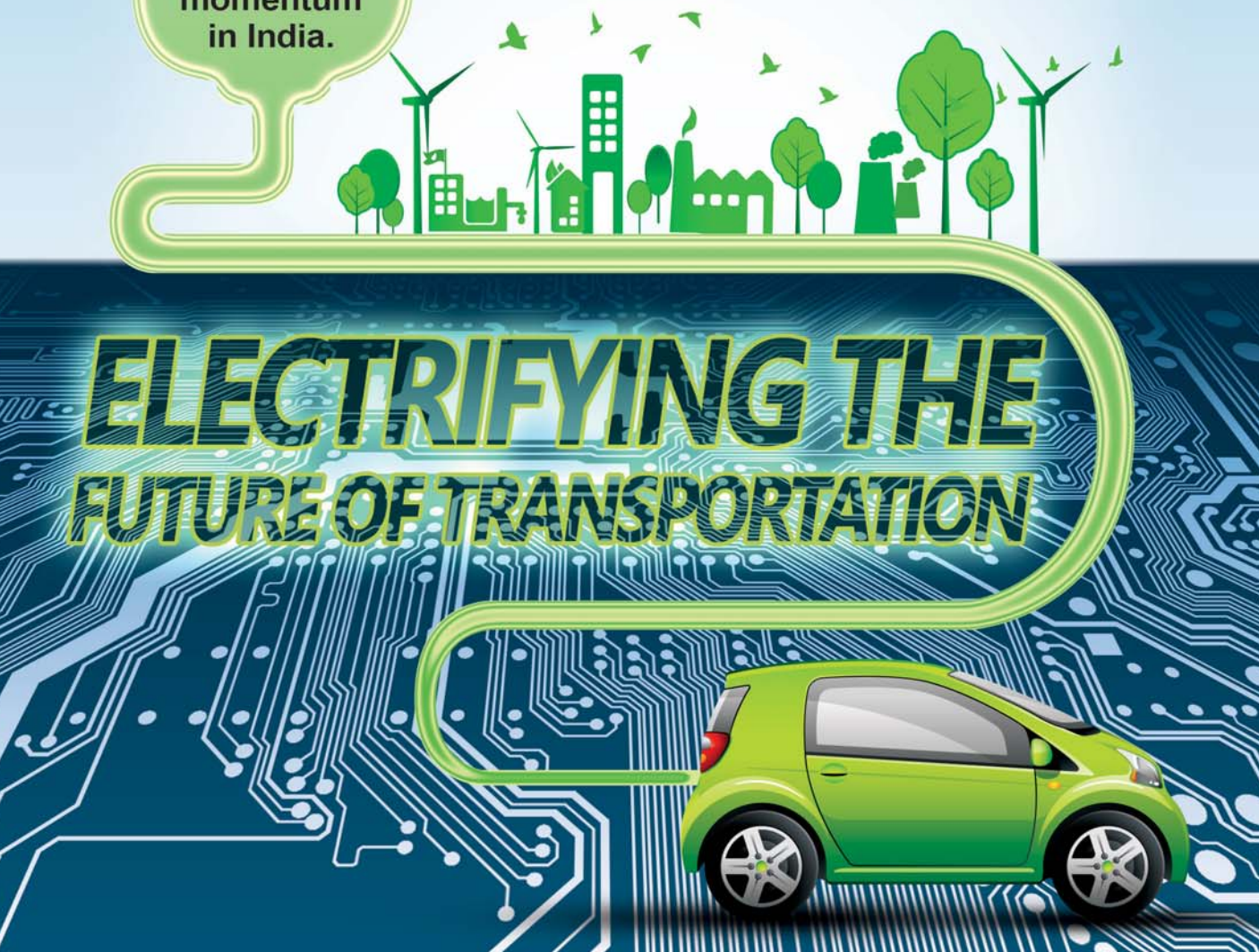
AUTOMATION

Threat or Opportunity?

MATERIAL HANDLING

Improving the process

Electric vehicles are getting momentum in India.



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Electrifying Future!

The (inevitable) advent of electric vehicles is been looked upon with a lot of apprehension and confusion. Challenges related to policy, infrastructure, ecosystem and preparedness have been discussed at length at many forums. While many have also acknowledged the opening of new opportunities due to this paradigm shift, I believe that it is not sufficiently highlighted.

Let's look at the two inter-related issues regarding the manufacturing sector – increasing the industry's contribution to the GDP and creating more jobs. The EV narrative has huge potential to address these two issues. How? Besides the conventional auto players, who want to retain their market relevance and leadership, several non-auto players have also jumped into the EV fray. This is good news. It will bring in a lot of non-conventional wisdom and out-of-the-box thinking to this industry. In turn, it will also open new vistas for young entrepreneurs to create a place for themselves in the new evolving ecosystem.

"ENTRY OF NON-AUTO PLAYERS BRING IN A LOT OF NON-CONVENTIONAL WISDOM AND OUT-OF-THE-BOX THINKING TO THIS INDUSTRY. IN TURN, IT WILL ALSO OPEN NEW VISTAS FOR YOUNG ENTREPRENEURS."

Another aspect that needs to be highlighted is the direct co-relation this segment will have with the energy sector. Of course, the subject of charging stations and consequent increase in the demand for power supply is important here. However, I also want to draw attention to the role of the batteries particularly in the context of India's growing push for clean energy sources like solar and wind. There is a huge challenge with regards to storing the energy generated by these sources. So, the development and advancement in batteries for EVs can have a direct impact on the energy sector. And, I am not even talking about the impact that EVs will have (or started to have) on the geopolitics of energy, which was so far dominated by oil!

Editor & Chief Community Officer

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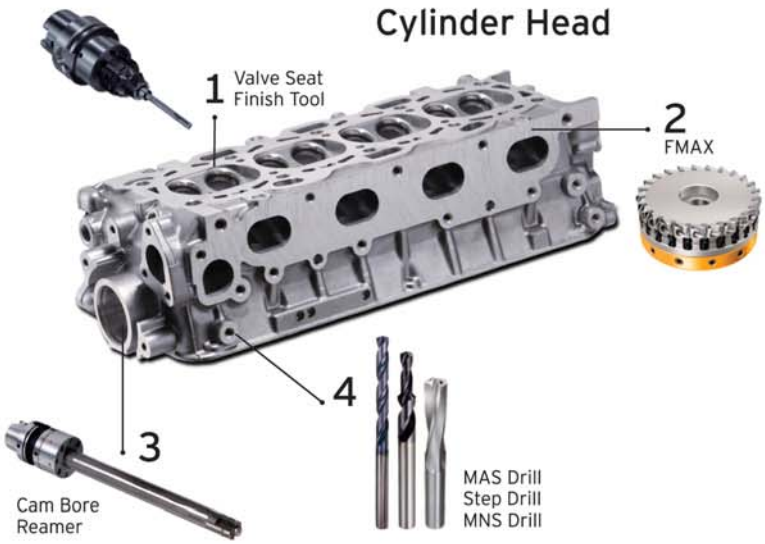

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Indian Railways inducts new machine 09-3x Dynamic Tamping Express

INDIAN RAILWAY has inducted three numbers of 09-3X Dynamic Tamping Express machines, the state-of-the-art integrated track maintenance. These machines were inaugurated and flagged off by Shri M.K. Gupta, Member Engineering, Railway Board at Faridabad. Seven number of such machines are planned to be included within next six months in the present fleet of 874 track maintenance machines over IR for deployment on heavy density Routes.

The New 09-3X- Dynamic Tamping Express costing about Rs. 27 cr. each is a latest high output integrated tamping machine having multiple functions, so far being carried out by different machines. It can measure pre & post track geometry, correct the track to required geometry, can tamp three sleepers simultaneously, stabilize and measure post tamping track parameters under load to ensure quality of work done. This eliminates the need for a separate stabilisation machine which reduces operating costs and track possession time. This machine will vibrate & compact the loose stone ballast after tamping for safe movements of trains.

These machines have been manufactured in India under MAKE IN INDIA initiative with imported components. 42 more such machines have been planned to be included in Indian Railway maintenance fleet over next three years.

This will further improve the safety, reliability and economy in maintenance of tracks over Indian Railways. This will also eliminate manual measurement of track quality after maintenance.

8,625 Startups recognised

AS PER THE DATA available with Startup India, total of 8,625 Start-ups have been recognised as on 30 March, 2018. 2711 start-ups where incorporated in 2017-18. This information was given by Minister of State of Commerce & Industry, C. R. Chaudhary. The Minister said DIPP has issued detailed norms to assess the performance. He said, this initiative will help bring to fore progress made by the States & Union Territories for promoting Startup ecosystem, foster competitiveness & propel them to work proactively to identify, learn & replicate good practices. He added, the 'State Startup Ranking Framework' is spread across seven areas of interventions. The areas include Startup policy & implementation, incubation support, seed funding support, venture funding support, simplified regulations, ease of public procurement & awareness and outreach.

ISRO–BHEL tie up to produce space grade Li-Ion cells

ISRO has entered into a Technology Transfer Agreement (TTA) with Bharat Heavy Electricals Limited (BHEL), which is one of the country's leading PSUs, to transfer the technology for the manufacture of space grade Li-Ion cells. The TTA was signed at ISRO Headquarters, Bengaluru yesterday in the presence of Dr. K. Sivan, Chairman, ISRO and Atul Sobti, Chairman & Managing Director, BHEL.

ISRO uses Li-Ion batteries as power sources for satellite and launch vehicle applications due to their high energy density, reliability and long cycle life. Vikram Sarabhai Space Centre (VSSC) of ISRO at Thiruvananthapuram has successfully developed the technology to produce space grade Li-ion cell, demonstrated the performance of the cell under various testing conditions and established its cycle life characteristics in accelerated mode. These cells are currently being used for various satellite and launch vehicle applications.

This Li-ion cell Technology Transfer will enable BHEL to produce space grade Li-Ion cells which can meet the country's space programme requirements. This technology can also be adopted to cater to the Li-Ion cell requirement for other national needs.

TAFE acquires the iconic IMT tractor brand

TAFE - the world's third largest tractor manufacturer by volume, successfully acquired the renowned Serbian tractor and agriculture equipment brand IMT - Industrija Masina i Traktora.

IMT, an iconic tractor brand is a pioneer in farm mechanization and tractor technology with a wide range of implements and tractors suitable for cultivating agricultural land, vineyards and orchards, and for infrastructure applications. The implements range includes ploughs, trailers, maize planters, seed drills, cultivators and loader forklifts.

IMT has produced a range of tractors between 35 hp and 220 hp and is a popular tractor brand in Eastern Europe, Northern Africa and the Balkans.

Mallika Srinivasan, Chairman & CEO, TAFE, speaking on this recent acquisition said, "TAFE and IMT have shared a long mutually beneficial cooperation. This acquisition will play a key role in TAFE's strategic and growth plans for the future."

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ADB, India Sign $120 Million Loan to Improve Rail Infrastructure

THE ASIAN DEVELOPMENT BANK (ADB) and the Government of India today signed a $120 million loan agreement to complete double-tracking and electrification of railway tracks along high-density corridors in India and improve operational efficiency of the country's railway networks.

The $120 million financing is the third tranche of a $500 million financing facility for the Railway Sector Investment Program approved by ADB's Board in 2011. The loan amount will be used to complete the on-going works started in the project's first two tranches.

The agreement was signed by Kenichi Yokoyama, ADB Country Director for India, and Sameer Kumar Khare, Joint Secretary (Multilateral Institutions) of the Department of Economic Affairs in the Ministry of Finance, at a ceremony in New Delhi.

"The program will help develop energy efficient, safe, and reliable railway systems that will result in reduced travel time along project rail routes and also reduce annual accident rate," said Khare.

"Funding for the project's third tranche will contribute toward achieving the overall program outputs of double-tracking about 840 kilometers (km) of rail routes and electrification of 640 km of tracks along high density corridors," said Yokoyama. "The program is also helping implement new accounting systems and provide additional safety measures including collision avoidance equipment."

The investment program is targeting busy freight and passenger routes in the states of Andhra Pradesh, Chhattisgarh, Karnataka, Maharashtra, and Odisha, including the "Golden Quadrilateral" corridor that connects Chennai, Kolkata, Mumbai, and New Delhi. The doubling of rail sections is being implemented along Daund-Titlagarh section, Sambalpur-Titlagarh section, Raipur-Titlagarh Section, and Hospet-Tinaighat section, while electrification is being undertaken along the 641-km Pune-Wadi Guntakal section.

India becomes the second largest producer of crude steel

IN A MAJOR ACHIEVEMENT, India overtook Japan to become the second largest producer of crude steel in Feb 2018. At present China is the largest producer of crude steel in the world producing more than 50 percent of the steel produced in the World.

India's crude steel production was up 4.4 percent and stood at 93.11 million tons for the period April 2017 to February 2018 (prov) as compared to April 2016 to Feb 2017.

India overtook USA in 2015 to become the third largest producer of crude steel. According to Nikunj Turakhia, President of Steel Users Federation of India (SUFI), "India bagging the second position ahead of Japan is a matter of pride and speaks volumes about the right policies undertaken by the Modi government. The government has taken host of steps to curb imports, push local demand with initiatives like "Make in India", implementation of the GST and infrastructure projects, to encourage the domestic market."

According to World Steel Association, India produced 8.4 Mt of crude steel in February 2018, up 3.4 percent on February 2017.

L&T Construction & DFCCIL signs contract

THE RAILWAYS STRATEGIC BUSINESS UNIT of L&T Construction's Transportation Infrastructure Business has signed a major contract worth Rs. 2,864 Crore with the Dedicated Freight Corridor Corporation of India Ltd. (DFCCIL).

The prestigious order was secured against stiff competition from five other major EPC companies. The EPC order involves construction of 222 Route Km of a single-track corridor from Khurja to Pilkhani in Uttar Pradesh.

This is Larsen & Toubro's first EPC Civil, Structure & Track project in the Eastern Dedicated Freight Corridor. In the Western Dedicated Freight Corridor, L&T already has a share of 71 percent in the civil packages and 100 percent share in the electrical packages.

DFCCIL is a special purpose vehicle of the Indian Railways, mandated to build dedicated freight corridors. This project will be funded by World Bank (WB) and is a part of the 1856 km Eastern Corridor proposed between Ludhiana (Punjab) and Dankuni (West Bengal).

The scope of work includes construction of single railway track including yards, 75 major and 588 minor bridges, one rail over bridge modification, four rail flyovers, 21 stations along with construction of all associated works.

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

Hannover Messe
April 23–27, 2018
Hannover, Germany
www.hannovermesse.de/home

CeMAT
April 23–27, 2018
Hannover, Germany
www.cemat.de

ACMEE
June 21–25, 2018
Chennai, India
www.acmee.in

AMTEX 2018
July 06–08, 2018
New Delhi, India
www.amtex-expo.com/amtex_delhi

Busworld India 2018
August 29-31, 2018
Bengaluru, India
www.india.busworld.org

IMTS 2018
September 10–15, 2018
Chicago, USA
www.imts.com

Wire India Show
November 27–29, 2018
Mumbai, India
www.wire-india.com

Metallurgy Show
November 27–29, 2018
Mumbai, India
www.metallurgy-india.com

TechIndia 2018
August 29 –31, 2018
New Delhi, India
www.techindiaexpo.com

IMTEX 2019
January 24 –30, 2019
Bangalore, India
www.imtex.in

Taipei International Machine Tool Show
March 4–9, 2019
Taipei, Taiwan
www.timtos.com.tw

intec Coimbatore
June 6–10, 2019
Coimbatore, India
www.intec.codissia.com

OUR INHOUSE UPCOMING EVENTS

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The Economic Times POLYMERS
Global Conference on Plastics in Automotive
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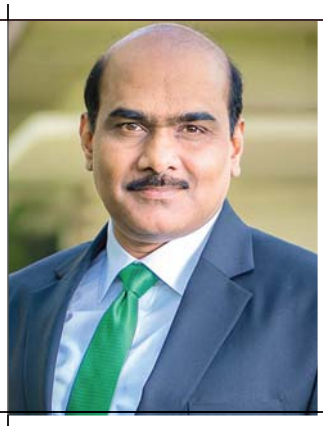
SCHAEFFLER INDIA APPOINTS NEW INDUSTRIAL PRESIDENT



Schaeffler India has announced the appointment of Harsha Kadam as the new Industrial President. In this role, Kadam will be responsible for Schaeffler's Industry Business in India. Kadam will operate from Schaeffler's Maneja (Vadodara) plant, and will report directly to Dharmesh Arora – CEO, Schaeffler India. He will also be a member of the leadership team of Schaeffler India.

"We are very excited to welcome Mr. Harsha Kadam as the new President for our industrial business in India. He brings with him strong knowledge and distinguished experience which will be vital as we continue our ambitious plans to grow in India and seize the opportunities this market has to offer. We look forward to the contributions made by Mr. Kadam and wish him the very best for his new and challenging role," said Dharmesh Arora, CEO Schaeffler India.

WABCO APPOINTS NEW CHIEF TECHNOLOGY OFFICER

WABCO Holdings Inc., has today announced Dr. Christian Brenneke's promotion as its new Chief Technology Officer (CTO). Underlining WABCO's commitment to differentiate through the development of pioneering technology for increasingly autonomous, connected and electrified commercial vehicles, Dr. Brenneke will now combine his current responsibilities as Vice President, Engineering, with those of the CTO to lead WABCO's global innovation and advanced product development strategy.

"Technological innovation is at the very heart of WABCO's top line growth success," said Jacques Esculier, WABCO Chairman and Chief Executive Officer. "By bringing his extensive commercial, operational and engineering expertise to this role, Dr. Brenneke's appointment powerfully underlines our continued strategic focus to expand and globalize WABCO's extensive portfolio of commercial vehicle safety and efficiency technologies."

RUTH WERHAHN TO JOIN EXECUTIVE BOARD OF TUV RHEINLAND AG

Ruth Werhahn is to become a new Executive Board member of TUV Rheinland AG on April 1, 2018. She will assume responsibility for HR affairs as the new fourth member of the global testing service provider's Executive Board and take on the position of Labor Relations Director in accordance with the German Co-Determination Act. A fully qualified lawyer, she was previously HR Director for Germany at the E.ON Group.

Professor Bruno O. Braun, Chairman of the Supervisory Board of TUV Rheinland AG, commented, "We are delighted to have gained an experienced HR manager in Ruth Werhahn. She is hugely familiar with the energy industry, an industry in which companies and their employees are facing significant change and major challenges." Having been in charge of business development of the Scandinavian markets and served as Head of Electric Mobility at E.ON, she was also involved in shaping key future-oriented topics for several years.

ADDITION MANUFACTURING TECHNOLOGIES ANNOUNCES NEW CEO

Addition Manufacturing Technologies is pleased to announce the appointment of Scott Morling as its new CEO.

Scott has a wealth of experience in a number of industrial sectors. Having graduated with BS and MS degrees in electrical engineering from Northwestern University and the University of Illinois, respectively, Scott joined Delphi Automotive Systems in 1990. Over the next nine years he worked in a variety of management positions in production, manufacturing engineering, product management and planning and strategy. In 1995 he was accepted into Stanford University Graduate School of Business as a GM Fellow and received his MBA in 1997. Since 1999 Scott has held senior management positions at companies in steel, metal tube and metal component manufacturing sectors.

"I am honored to be entrusted with the leadership of such a respected company", said Scott Morling, "I look forward to accomplishing many things together as we pursue the exciting potential of manufacturing technologies."

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TOSHIBA CORPORATION WELCOMES NOBUAKI KURUMATANI AS CHAIRMAN AND CEO

Nobuaki Kurumatani took office as the first Chairman and CEO of Toshiba to be appointed from outside the company in over 50 years.

Commenting on his appointment as Representative Executive Officer and Chairman and CEO, Kurumatani said, "I am honored to be appointed CEO, and very much aware of the responsibilities I take on. Toshiba is not just any company. Its corporate DNA has realized countless Japan- and world-first technologies and products, made Toshiba a source of pride in Japan for nearly 145 years, and also made us a global leader." He further mentioned, "I believe that helping Toshiba back on its feet is my true calling. I am here at Toshiba to support change and transformation, and I see my role as to build on the company's resilience and to lead its recovery. To secure growth, we must radically improve our earning power and reinforce our finances. We must move out of our comfort zone and promote fundamental reforms."

SHISHIR JOSHIPURA JOINS PRAJ INDUSTRIES AS CEO & MD

Praj Industries has appointed Shishir Joshipura as the CEO and Managing Director. Joshipura is a Mechanical Engineer from BITS Pilani and an Advanced Management Graduate from Harvard Business School. Prior to joining Praj, he was Managing Director and Country Manager of SKF India Ltd from 2009.

Commenting on the appointment, Pramod Chaudhari, Executive Chairman, Praj Industries said, "I welcome Shishir on board as the new CEO and Managing Director at Praj. He brings with him over 35 years of track record at various leadership levels, deep understanding of local and global markets, besides sound industry background. We are confident that Shishir will steer Praj through the next phase of growth. Demand for renewable fuels has been growing at an exponential rate and we anticipate ethanol to emerge as the preferred choice given its properties as clean and sustainable fuel".

GURPRATAP BOPARAI TAKES CHARGE AS NEW MD OFŠKODA AUTO INDIA

Gurpratap Boparai has taken charge as the Managing Director of ŠKODA Auto India Pvt. Ltd. (SAIPL). Boparai brings in his extensive experience in the international and Indian automobile industry. In his new role, he will be reporting directly to ŠKODA AUTO CEO Bernhard Maier. Relying on his expertise in managing large manufacturing operations, he will be responsible for ŠKODA's development in the domestic market.

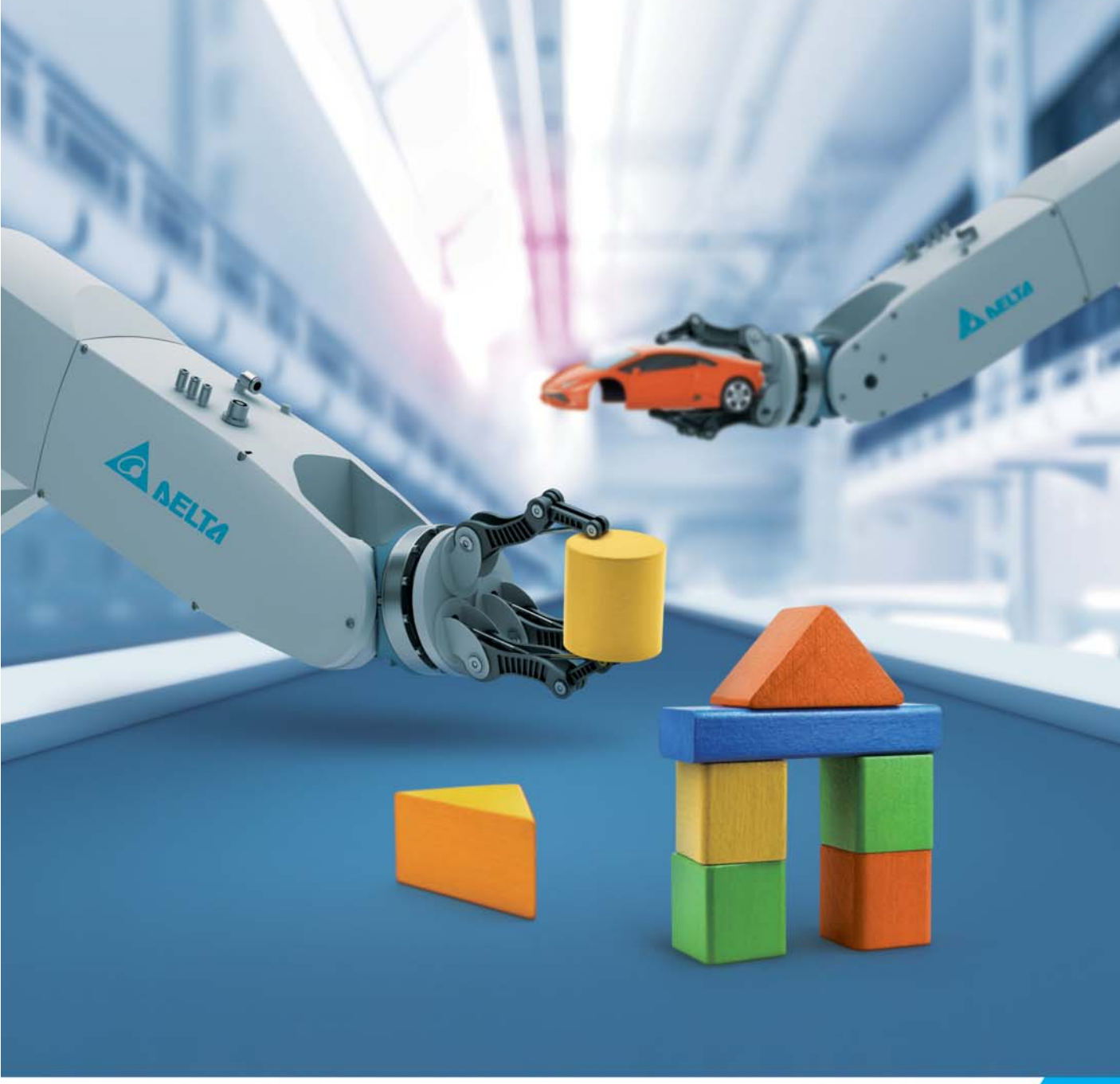
"Boparai's appointment comes at an opportune moment when ŠKODA is set to strengthen its position in the Indian market. He brings with him vast knowledge of the Indian automotive landscape, which will enable the company to implement a comprehensive expansion plan. With him on board, we will continue to vigorously press ahead with the growth of our brand in India," says Bernhard Maier, CEO, ŠKODA AUTO.

GAKU NAKANISHI IS PRESIDENT & CEO OF HONDA CARS INDIA

Honda Cars India Ltd (HCIL) has announced that Gaku Nakanishi assumed the office of President & CEO from April 3, 2018. The company has also appointed two new directors to spearhead the company's Sales & Marketing operations. In Rajesh Goel, Sr Vice President & Director, Sales & Marketing, and Makoto Hyoda, Director, Sales and Marketing.

Nakanishi was previously President and CEO of Honda Automobile (Thailand) Co., Ltd. since 2015. Nakanishi brings in rich experience of the automobile industry in his career span of almost 30 years with Honda Motor Co., Ltd. and has worked for several international markets including North America, Mexico, Japan, Thailand, CIS, Middle East and Africa.

In view of the company's aggressive plans for the Indian market in future, HCIL has appointed Rajesh Goel as Sr. Vice President and Director, Sales and Marketing. Rajesh Goel is a Honda veteran with an association of more than 22 years with Honda Cars India Ltd. He joined HCIL in 1996 at the time of company's inception. Over the past 22 years, he has headed several critical functions in the company, including Purchase and Quality.



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Ayush Lohia, CEO, Lohia Auto Industries talks to The Machinist about penetration of electric vehicles.

By Swati Deshpande

Q How do you look at the increased awareness on EVs in the Indian market in the past couple of years?

Government of India has set an ambitious roadmap for pure electric vehicles with a transformative solution of shared-connected-electric mobility, wherein, 100 percent public transport vehicles and 40 percent of private vehicles can become all electric by 2030. This vision needs to be expanded to have future of all EVs.

Although there is some awareness, acceptance of EVs in India is still quite low as compared to IC engines. However, I foresee this situation changing as the industry is evolving with very high pace. It is government's clear roadmap to resolve the challenges such as charging infrastructure, adoption of lithium ion batteries with advanced technology and cost reduction.

Q How do you plan to develop required infrastructure such as charging stations?

To some extent, EVs' penetration depends on the charging infrastructure. The Govt has taken initiative to address this concern and it is part of FAME subsidy as well. With the Government's support, agencies are working in this direction & facilities have been installed at some places as a pilot project.

Speaking about our efforts, we are in dialogue with 2-3 agencies, which can develop charging solutions for us as per our requirement. Definitely, charging infrastructure can be developed in coming 2-3 years with collective efforts and support from the government.

Q What are the challenges in the manufacturing of EVs?

Some of the challenges that we are:

- GST difference – Input GST 28 percent and 18 percent. Output GST 12percent. But it should be 5 percent only.
- Local supplier base- It is still very less or no supplier for motor, controller, lithium ion battery cells, etc.
- Cost of lithium ion battery
- Ambiguity in Govt. policies – there is a dire need of long term policy.

Acceptance of EVs in India is still quite low as compared to IC engines. However, I foresee this situation changing.

Q Speed of charging still remains an area of further development. How do you look at it?

We are working towards reducing charging time with replacing lead acid batteries from our electric two wheelers and three wheelers into lithium ion battery. Normally lead acid battery charging time is around 8–10 hrs while lithium ion batteries can be charged within 3–4 hrs. In the coming days, it will be reduced further as new technology is evolving in lithium ion batteries and advanced chargers are also helping in reducing charging time. Battery swapping can also address this concern and we are looking into developing system in this direction.

Q Can you please tell us your effort in the electric vehicles segment that you have developed?

Lohia Auto Industries was established in 2008 with an objective to provide clean, efficient, reliable and affordable inner-city and rural transportation. In the highly cluttered automobile market, the company has carved out a niche with e-scooters. Further, we introduved an e-three wheeler as last mile connectivity solution. Recently, we launched e-auto with lithium ion battery in high speed/ low speed both options.

Also, we are continuously raising concerns related to EV industry through different forums. We are founder member of SMEV, which works towards development of EV industry.

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Consolidating **leadership position**

Engineering business in India is expected to continue its growth trajectory because of its huge engineering talent pool, large population with spiraling consumption and growing energy needs, says **Rishi Roop Kapoor,** CEO, The Anup Engineering Ltd.

By Niranjan Mudholkar

Q. Anup Engineering was started in the year 1962, briefly tell us about its evolution into a major player in heavy fabrication industry since then.

The Company originally started as a manufacturer of dishends/ pipe caps (components of a pressure vessel) to cater to a growing textile/chemical industry in Ahmedabad. In 1970s, Anup started manufacturing centrifuges & also emerged as a capable supplier of aerospace components to ISRO. Subsequently graduated to become a manufacturer of centrifuges and pressure vessels/heat exchangers over the next three decades.

By the turn of the century major investments in core sectors like refineries / petrochemicals / chemicals started happening in India as well as in middle east and the USA. This created significant demand for process equipment and hence more opportunities for process equipment manufacturers like Anup. By the year 2010 Anup was an established player for supplying mid-end process equipment with a reasonably good infrastructure. It was after 2011 that Anup rapidly grew to become a fabricator of choice for some of the most challenging business segments viz shutdown / replacement markets, solely because of its exceptional performance in terms of on time delivery and quality.

Q. How would you analyse the overall engineering business in India and where would you place Anup in terms of its capabilities and project delivery records?

Engineering business in India is expected to continue its growth trajectory because of its huge engineering talent pool, abundant and highly skilled workforce, large population with spiraling consumption and growing energy needs. Anup Engineering has excelled in the last six years to generate an exceptional on time delivery record apart from excellent product quality and customer focus. If we specifically look at the shell and tube exchangers in the whole gamut of process equipment, Anup is currently a market leader from all perspectives – be it the volumes or versatility in terms of sizes, metallurgies or applications.

Q. Over the years, Anup Engineering has developed the skill and technology required to carry out highly critical & specialised jobs, which also involves working with unconventional materials. Tell us about this.

Whenever our customers visit our facilities there is one quality which they admire unfailingly and that is our versatility. Perhaps Anup Engineering would be one of those rare companies having the entire range of metal processing capabilities under one roof – forming, bending, cutting, machining, welding, coating/surface treatment and heat treatment. These facilities are helmed by experts with a lot of experience in each of these aspects. Couple this with our design capabilities which set us apart from other manufacturers – thermal, finite element analysis, fatigue analysis etc. These skills and capabilities impart us the ability to assess key aspects of any material / design combination and this accurate assessment is the reason behind

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Q. Continuing from the above question, has it been challenging for you to acquire the technology and machinery required for such a different segment? Are these easily available in India or did you have to import some?

It's the same set of machines which are used to cater to process equipment fabrication for different industry sectors. As such the most critical machineries have been imported - primarily from West Europe which was traditionally strong in the heavy engineering business until 2005. However, quite a few of these machines are now indigenously available.

Q. Anup Engineering is present in a niche segment & has also been growing. How difficult has it been for you to get skilled workers for your plant? Do you also conduct training programmes for new & existing employees?

I believe that India's biggest strength is its people and somehow Indian industries must leverage this strength. However, to specifically answer your question, it has been both easy and difficult at the same time. Easy because of the high percentage of young adults in our population and difficult because of the skill gap. We manage well by selecting people with potential and mentoring/training/qualifying them prior to putting them on job. Training is an integral part of our work culture.

Q. Which are some of the key ongoing projects that Anup Engineering is working on?

Anup is currently supplying to Dangote Refinery in Nigeria, SASOL in South Africa and to Ramagundam Fertilizers Project, RIL, Essar Oil in India. Besides these, some prestigious orders are currently in the engineering & material procurement stages. These are for exports to South Korea and USA.

Q. Tell us about the company's growth strategy and expansion plans. Where do you see the organisation in the next two years in terms of its achievements?

Most of the building blocks for the next phase of growth at Anup are in place. On the infrastructure front we are ready to cater to the upcoming/ongoing projects in the Indian Refineries, Petrochemicals and Fertilizer sectors. Currently we are bidding for several opportunities. We are augmenting our engineering teams in various functions to successfully live up to the challenging expectations of our customers and the growing criticality / complexities of the product range being targeted by us. Over the next couple of years, we will consolidate our leadership position in the shell and tubes exchangers within the country and will emerge as one of the leading suppliers to the global customers and markets.

"If we specifically look at the shell and tube exchangers in the whole gamut of process equipment, Anup is currently a market leader from all perspectives."

Q. The Arvind Group, of which Anup Engineering is a part of, is going through a major restructuring currently. How will this impact your business?

I believe that the leadership team of Arvind helmed by our chairman Mr. Sanjay Lalbhai – who is an inspirational & visionary leader - encourages innovative thinking, guides, empowers and supports completely. Over the last decade or so, they have successfully created highly motivated and capable leadership teams for different businesses who share & believe in the group's vision, aspirations and values.

The group is currently going through a momentous phase with the foundations for future growth being laid across its businesses whilst consolidating on inherent strengths. Renewed focus to achieve best synergies has led to the realignment of business verticals within the textile domain driven by innovative thinking and also ensured that other businesses with potential are enabled to chart the best path forward to deal with the unique challenges faced by them. The demerger of Anup will allow us to achieve that and will help us prepare to consolidate, sustain and even accelerate the growth momentum achieved by our business over the last four years.

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The **New Era** of **Mobility**

EVs are a reality in India and will be ushered in the years to come, says **A M Devendranath,** Vice President and Head (Energy Practice), Feedback Business Consulting.

By Niranjan Mudholkar

Q. Many believe that India's EV time has arrived. What is your opinion? What are the things that will work in the favour of EVs in India? Which are the areas that require a lot of work?

EVs are a reality in India and will be ushered in the years to come - this is largely driven by Global developments in EVs and how the world market is moving toward EVs and not ONLY about local developments. Also added to this, are the growing demand drivers from India such as our need to reduce GHG and the huge imports of crude oil. EVs will come in a big way as a result of all these forces.

The aspects which work for India is the most essential part of our Auto Industry being a key economic pillar for India. Due to this fact the industry by itself and the Government will ensure that this major economic contributor is not disturbed much by global EVs coming into India and we will see our industry adapting to EVs much faster than one can see. We have already seen an evidence of the same in Auto Expo this year where the flavour was on EVs.

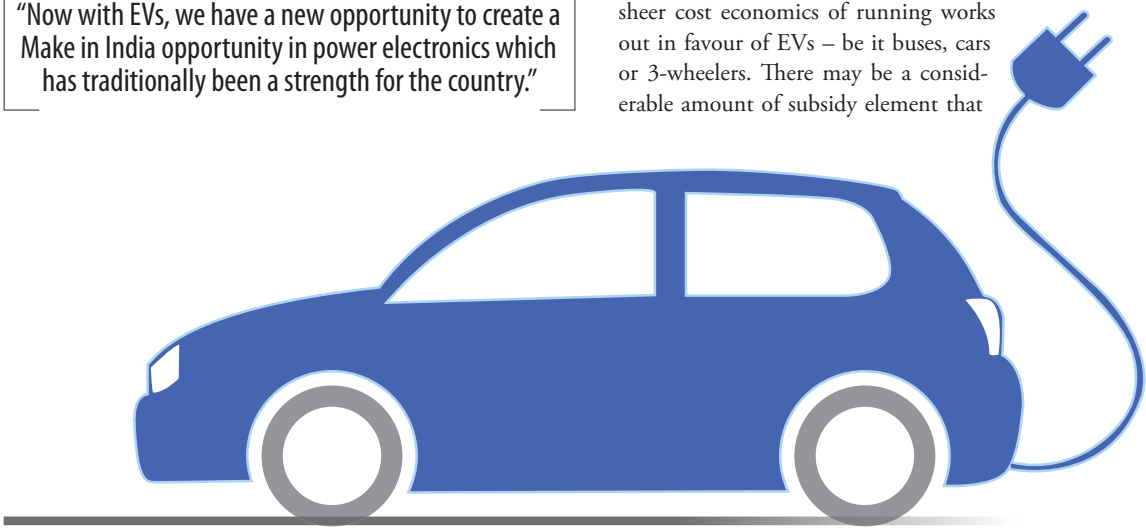
There are obviously lot of areas which need work here – starting from making sure our Auto Industry and Auto components industry migrate to EVs gradually, the setting up of EV charging infra is the next big challenge, the support systems required to manage this new ecosystem and most importantly to ensure that India takes off in the battery manufacturing business and not be too reliant on imports in this aspect from a long term perspective. There is also a crying need to have a stable long-term policy stability that is required to nurture a new industry like the EVs.

> "Now with EVs, we have a new opportunity to create a Make in India opportunity in power electronics which has traditionally been a strength for the country."

> "Indian EVs deployment could be different than the rest of the world – one example is the deployment of EVs in the public mobility first and then moving onto personal vehicles."

Q. Industry body SIAM has also suggested incentivising the end buyer in terms of tax benefits. Do you think such schemes are viable?

Globally the EV industry has grown essentially due to the tax benefits which were offered to the consumers to make EVs more affordable. Our limited interactions with policy makers here has shown that Indian EVs deployment and market expansion will be very different from global examples. First of all, it may not be largely due to tax incentives or subsidies that will drive Indian EV market in the long run. Subsidies and Incentives will be required now for the initial 3-4 years in a limited manner. As I mentioned, Indian EVs deployment could be different than the rest of the world – one example is the deployment of EVs in the public mobility first and then moving onto personal vehicles. In the public mobility space – the sheer cost economics of running works out in favour of EVs – be it buses, cars or 3-wheelers. There may be a considerable amount of subsidy element that



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will be required for the 2-Wheeler segment though. Secondly, the Government is looking at bulk aggregation of demand for public mobility and buying in bulk to faster the reduction in prices of EVs – we have already seen a 30 percent reduction in the recent EESL tender and this is just the beginning. As the volumes increases, the costs will further fall down and with the global fall on battery prices, we may soon reach a stage where the additional consumer incentives may not be required – but that is still 4-5 years away.

Q. Inadequacy of charging infrastructure is a challenge as well as opportunity. How do you see this panning out in the next two years?

A huge opportunity I must say. I say this as we are witnessing a huge Imports of Electronics which is happening in India in other products. Now with EVs, we have a new opportunity to create a Make in India opportunity in power electronics which has traditionally been a strength for the country. New business models will evolve here and charging infra will be the next big infrastructure development for the future. In the next 2-3 years, we will see pilots coming up in various centres by various players to assess the right business model one needs to deploy here.

"The industry by itself and the Government will ensure that this major economic contributor is not disturbed much by global EVs coming into India and we will see our industry adapting to EVs much faster than one can see."

Q. What role do you see the shared mobility business playing in the growth of EV concept in India?

Public Mobility will be key driver for EVs in India as I have mentioned above. In the recent years, with the advent of App based mobility operators, we are already witnessing a huge movement towards Shared mobility – research also points to this fact. In future, EVs will bring in a lot of flexibility and a multimodal EVs based transportation is not far off. Already, hear some players are focusing in a EVs based Multi-modal solutions in certain parts of the country. Also, we should not discount the impact of E-Rickshaws which is hugely popular now with the masses at the BOP segment.

Q. As per your survey, the top three expectations on EVs were high-quality, affordability and good looks. How well are the existing OEMs placed to deliver on these expectations?

The journey has begun now, it will be too early to say, we need to wait and see how the OEMs will respond to these expectations and also you may see a change in expectations in consumers vis-a-vis as more and more examples of EVs roll outs happen.

"There are obviously lot of areas which need work here – starting from making sure our Auto Industry and Auto components industry migrate to EVs gradually."

Q. Do you see the emergence of completely new players in the automotive segment with the arrival of the EV concept?

In the Cars segment, it will be largely the traditionally auto firms domain which will drive the EVs. In CVs – we can see some EV powertrain firms coming in with partnership with Body builders and occupying some part of this space. In 2-Wheelers and 3-Wheelers, we could see emergence of new age firms and start-ups who could revolutionise this segment.

Q. India's Maharatna and Navratna companies like NTPC, BHEL and Power Grid Corporration want to join the EV bandwagon to stay relevant in the new energyscape. What is your analysis of their interest and participation?

They have to participate in this journey for now as the Government would want to make sure that the creation of Public infrastructure is not completely dependent on Private players and they would want to make a start and create a market place for others to chip in. In the long run, it will be beneficial for these firms to have a play in a new age infrastructure business and it may benefit them and the country as a whole.

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Mahindra Group and Ford to collaborate for small electric vehicles

Mahindra Group and Ford Motor Company will jointly develop new SUVs, and a small electric vehicle as part of several initiatives announced between the two companies. The two companies signed five new memoranda of understanding (MoU) that further strengthen their strategic alliance and accelerate the development of key products for consumers in India and emerging markets. The MoUs, which are non-binding, mark the progress made by the two companies since announcing their alliance in September 2017.

Under the initiatives, Mahindra and Ford will leverage their strengths in the utility vehicle space to co-develop a midsize sports utility vehicle (C-SUV). Built on the Mahindra platform, the new SUV will drive engineering and commercial efficiencies and will be sold independently by both companies as separate brands. Mahindra and Ford also agreed to evaluate co-development of a compact SUV and electric vehicle, along with sharing powertrain portfolios, including the supply of Mahindra powertrains to extend Ford's product range.

Precision Camshafts acquires 76% shares in MFT

Global auto ancillary major Precision Camshafts Ltd. has announced its second acquisition with the taking over of German precision machinist MFT Motoren und Fahrzeugtechnik GmbH (MFT) through its wholly owned Duth subsidiary, PCL (International) Holding B.V. Announcing the latest acquisition, Yatin Shah, PCL's Chairman and Managing Director, said: "I am glad to announce the acquisition of MFT, Germany. This acquisition is value accretive which will open up synergetic opportunities for us through new product offerings and will establish a global brand presence. MFT will not only complement our relationships with current OEMs in that region but will also help in enhancing our customer base. With MEMCO and MFT on board, we are gradually progressing towards attaining our goal of transforming the business profile, while the key focus area continues to be our legacy business. Further, we remain committed to execute our planned business initiatives and capitalize on larger growth opportunities at hand."

Subaru using NI HIL tech for EV Testing

NI has announced that major automotive manufacturers like Subaru are using NI hardware-in-the-loop (HIL) technology to simulate actual road conditions for electric vehicle testing, eliminating environmental factors to reduce test time and costs. Traditionally, engineers have conducted vehicle tests using finished cars on test courses or public roads to check the vehicle's performance and safety response. However, certain limitations, such as weather and fluctuating road surface conditions, can make it difficult to conduct reproducible tests on roads in a timely manner. Moreover, electric vehicles are extremely complex due to their many subsystems, which are all interdependent on each other. This complexity makes the job challenging for automotive test engineers with short development cycles and pressure to limit costs. To combat these issues, Subaru replaced the roads in the validation tests with a NI HIL simulation solution built on NI PXI products and LabVIEW software.

Eicher Polaris JV called off; end of road for Multix

Eicher Motors Ltd (EML) has announced that the board of directors of Eicher Polaris Pvt Ltd (EPPL), EML's equal JV with Polaris Industries, passed a resolution to close the operations of EPPL with immediate effect, a company statement said. EPPL was incorporated in Oct 2012. In June 2015, it launched 'Multix', a personal utility vehicle, purpose-built for the independent businessman. Multix initially generated significant interest. However, subsequent sales performance was slower than the company's expectations. Despite several initiatives, its performance could not be revived. Hence, the board has concluded that it is in the best interest of all stakeholders to close the operations.

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Aluminium castings market to rise

Global aluminium castings market is projected to reach US$40.14 billion at a steady 5.2 percent CAGR by 2025.

The market for aluminium castings is choc-o-bloc with regional and international companies who compete against one another on the basis of a well-diversified product portfolio. In order to grow their market share further, the players are also seen coming up with cost-effective products. They are banking upon latest technologies to create more efficient products. Arconic Inc., Dynacast International, Endurance Technologies Ltd., Nemak, and Ryobi Ltd. are some of the players that enjoy a stronghold over the fragmented aluminium castings market.

A recently added research study by Transparency Market Research expects the aluminium castings market to rise at a steady 5.2 percent CAGR in the forecast period starting from 2017 and ending in 2025. At this rate, the market which was valued at US$ 25.23 bn in 2016, is projected to reach US$40.14 bn by 2025. The two sources of aluminium castings are primary and secondary. The secondary source, which consists of recycled aluminium, will likely account for a dominant share - both vis-à-vis volume and value - in the market in the next couple of years owing to mammoth savings they bring about. Secondary aluminum segment held around 55.0 percent share of the aluminium casting market in 2016.

Geographically, the prominent segments of the global market for aluminium castings are Latin America, North America, Asia Pacific, Europe, and the Middle East and Africa. Asia Pacific currently holds over the half the share in the global market for aluminium castings. In the years ahead, the region is expected to further increase its share by pulling in a maximum CAGR of 5.3 percent during forecast period between 2017 and 2025. China is said to be mainly powering the growth in the region.

> "With aluminium supplanting steel, the overall weight of automobiles has been brought down by almost half. This results in almost 17.0 percnet reduction in emission of carbon, thus making the vehicles fuel efficient."

> Automotive, machinery and equipment, building and construction, and telecom, among others, are some of the key end-use segments of aluminium castings market.

Automotive industry Lapping Up aluminium castings

Automotive, machinery and equipment, building and construction, and telecom, among others, are some of the key end-use segments of aluminium castings market. At the forefront of driving demand in the market is the automotive sector. This is because aluminium has many advantages over traditionally used steel. For starters, aluminium has high strength. Second, it has a far lower weight. Elaborates the TMR analyst who prepared the report, "With aluminium supplanting steel, the overall weight of automobiles has been brought down by almost half. This results in almost 17.0 percnet reduction in emission of carbon, thus making the vehicles fuel efficient."

Third, they are corrosion resistant and are highly conductive. Apart from that, they can be easily customized through heat treatment. In fact, because of so many unique perceived benefits, over half the automobile in the world are currently made from aluminium castings. Further, automotive manufacturers are moving from cast iron engine blocks to aluminium engine blocks.

Recycled Aluminium

A noticeable trend in the market is the rising manufacture of aluminium castings from recycled aluminium, particularly in developed nations of Europe and North America. This is because of strict rules pertaining to protection of environment and promoting recycling of materials to reduce waste. France, Austria, Germany, and Italy are some of the European nations that are major recyclers of aluminium.

Source: Transparency Market Research

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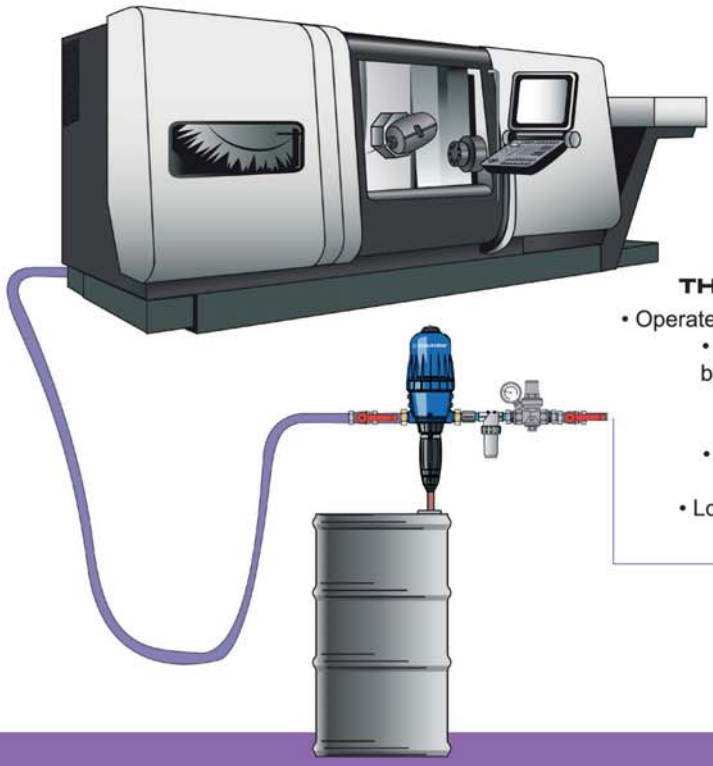

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Revolutionising Truck Production

The use of Industry 4.0 concepts has led to an improvement of around 15 percent in the manufacturing efficiency of a new truck assembly line compared with the old lines.

Daimler Trucks has launched a new era of truck production in Brazil, involving systematic implementation of Industry 4.0 concepts. A completely new type of truck assembly line has now commenced operation at the Brazilian Sao Bernardo do Campo plant of Daimler subsidiary Mercedes-Benz do Brasil. The application of hyperconnectivity (real-time networking of individuals, things, devices) and digital technologies to systems and tools results in a future-oriented production system.

A completely new building has been constructed by Mercedes-Benz do Brasil to house the assembly of light- to heavy-duty trucks and the associated parts logistics processes. The company ensured that its employees played a significant part in designing the new production facility, with the aim of creating a more ergonomic, more intelligent and safer working environment.

"Brazil currently recovers as a truck market. We have always believed in the market and continued to invest there. We are now opening our completely networked production line in Sao Bernardo do Campo and thereby revolutionising truck manufacturing in Brazil. The new facility also sets standards within the global production network for Mercedes-Benz Trucks. For our customers, this means even more flexibility and efficiency," said Stefan Buchner, worldwide head of Mercedes-Benz Trucks, as production started.

Investment in the future

The world's most successful manufacturer of commercial vehicles, Daimler Trucks has never wavered in its commitment to Brazil, even through a number of difficult years, but focused on making the business fit for the future. Over the last three years, Daimler Trucks has invested some 125 million euros (R$ 500 million) in the new truck assembly line. In order to

"The Industry 4.0 concepts include a range of technologies and tools that are all fully connected together in real time (hyperconnectivity). The new assembly line is connected 100 percent with all the other production areas at Mercedes-Benz do Brasil."

A Mercedes-Benz Atego 2730 leaves the new assembly line in the brasilian plant Sao bernardo do Campo (Sao Paulo).

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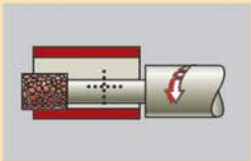
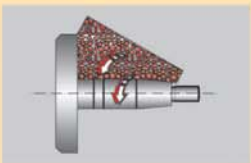


FIG-200 SPL CNC
BIG BORE GRINDER

FIGT-300 CNC
FOUR STATION TURRET

FIGE-150 CNC
ID / OD GRINDER

CNC Cylindrical Grinding



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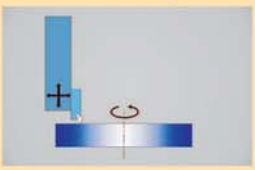

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be able to benefit from the return of market growth in Brazil, Daimler Trucks is also set to invest a further 600 million euros (R$ 2.4 billion) into updating its truck portfolio, into digital services and into the modernisation of its two production plants in Sao Bernardo do Campo (Sao Paulo) and Juiz de Fora (Minas Gerais) by 2022.

The business performance of Mercedes-Benz Trucks in Brazil provides grounds for optimism: in the last full year, Mercedes-Benz Trucks was able to increase sales to 13,400 units (previous year: 12,100) and, with a market share of 27.6 percent in the medium- and heavy-duty segment, was one of the market leaders in Latin America's largest market in 2017. Following a long period of sluggishness in recent years, it is expected that the more buoyant economic recovery phase will bring with it significant growth for the truck market in Brazil in 2018.

Digitally connected Driverless Transport Systems (DTS) shuttle truck parts to new assembly line at Mercedes-Benz do Brasil's plant in Sao Bernardo do Campo.

High-tech from start to finish

The Industry 4.0 concepts mentioned above include a range of technologies and tools that are all fully connected together in real time (hyperconnectivity). The new assembly line, for example, is connected 100 percent with all the other production areas at Mercedes-Benz do Brasil. With the aid of a smartphone app, workers and management have access to all relevant data relating to the assembly line on their mobile devices. These include the data for the 60 or so automatically guided vehicle (AGV) systems and for the new-style electronic screwdrivers, which work with pre-programmed torque settings. They, too, form part of a cloud network via Big Data Intelligence, ensuring faster reaction times in production.

In addition, there are new forklift trucks equipped with light-sensor technology to speed up the flow of materials in parts logistics and 3D printers used for the more agile production of new parts at lower cost. Should maintenance work become necessary, the service teams will in future use augmented reality headsets instead of cumbersome manuals as a means of sourcing detailed information about each component.

> "In addition, there are new forklift trucks equipped with light-sensor technology to speed up the flow of materials in parts logistics and 3D printers used for the more agile production of new parts at lower cost."

> "We are now opening our completely networked production line in Sao Bernardo do Campo and thereby revolutionising truck manufacturing in Brazil. The new facility also sets standards within the global production network for Mercedes-Benz Trucks."
>
> **Stefan Buchner,** worldwide head of Mercedes-Benz Trucks

Industry 4.0 to be extended to other production areas

The use of Industry 4.0 concepts has led to an improvement of around 15 percent in the manufacturing efficiency of the new truck assembly line compared with the old lines. The new facility has resulted in a reduction in the number of parts stores from 53 to 6, and in the storage time for components from 10 days to, at most, 3 days. Compared with production as it was, the overall parts logistics process is now some 20 percent more efficient. Mercedes-Benz do Brasil will now gradually extend the concepts of Industry 4.0 production to all production processes for the major assemblies (engines, transmissions and axles) as well as to the manufacture of bus chassis and truck cabs in its two plants at Sao Bernardo do Campo and Juiz de Fora (Minas Gerais).

Source: Daimler AG

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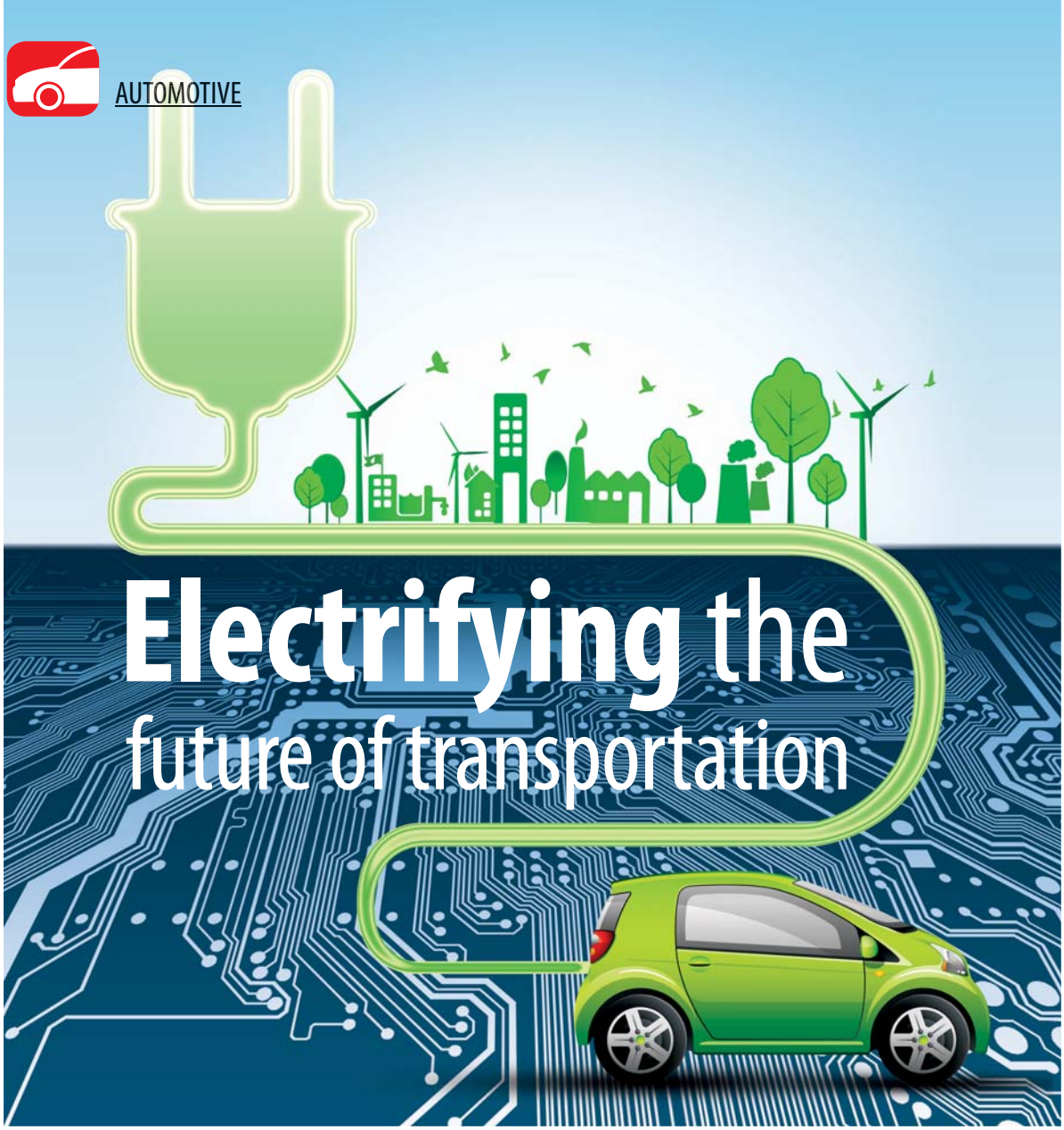

Electrifying the future of transportation

Electric vehicles are getting its momentum in the country. Here is an overview of penetration of EVs in India.

Compiled by Swati Deshpande

The Government of India's plans to shift to electric vehicles by 2030 has brought a wave of enthusiasm in car makers and allied technology and solutions providers.

"India is working towards steadily ramping up the infrastructure to support faster adoption of EVs, aptly supported by the government. The Government is aggressively looking at incorporating 100 percent eco-friendly and self-sustainable mass transport solutions by 2030," said Nishant Arya, Executive Director, JBM Group.

This sense of urgency towards EV adaptation reflected on the Auto Show. most of the auto makers showcased its prowess in the electric vehicles.

Maruti Suzuki presented 'e-SURVIVOR Concept' – EV design concept and working model of next generation Suzuki Hybrid system (HEV). This concept demonstrates the company's efforts in the direction of electric mobility and presents an innovative, futuristic vision of Maruti Suzuki. e-SURVIVOR is a design concept for a compact SUV that pays tribute to Suzuki's proud 4WD heritage. It is aimed to take the excitement of driving to the next level and the fun of Off-Roading ahead of its time, yet relevant to the present. In addition, e-SURVIVOR depicts the new and exciting F.A.C.E of Suzuki's intent for future mobility. It encompasses all future possibili-

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ties 'Four-Wheel Drive, Autonomous, Connected & Electric.'

Mahindra & Mahindra also showcased its range of electric vehicles, which was the widest ever displayed and included mobility solutions & concepts. This comprised the UDO, a stylish 2 seater electric pod concept; the ATOM, a new age urban mobility solution for emerging India; the Treo, a cutting-edge Lithium-ion battery powered electric three-wheeler; the e2o NXT, a refreshed version of the e2oPlus hatchback; the eKUV100, an electric mini SUV; and the e-Cosmo, the company's new electric bus.

Hyundai Motor has also introduced the Next Generation Fuel Cell Electric Vehicle (FCEV) – Hyundai NEXO and Global Electric Vehicle – IONIQ (Battery Powered) during the India Korea Business Summit 2018 held in New Delhi. Underlining the company's commitment, S. H. Kim, Vice President, Namyang R&D Centre, Hyundai Motor Company said, "The creation of Fuel Cell Electric Vehicle - HYUNDAI NEXO SUV and Global EV - IONIQ is a significant leap forward for th company as it intensifies our efforts to produce highly efficient, eco-friendly vehicles. Hyundai is continuously innovating in Clean and Connected Mobility Solutions to make a long-term positive transformation for our future generations."

Soner or later, all these vehicles and concepts are to be found on the road. Meanwhile, we can already see few e-vehicles on the road mainly into public transport domain. Tata Starbus Hybrid Electric Bus with Full Low Floor configuration from Tata Morors is running on the roads of Mumbai. It runs on dual power, i.e. diesel and electric and is economically viable, safe and environmentally-friendly. Similarly, there are other states in the country having electric buses running.

Alternately, Mahindra & Mahindra Ltd & Uber have collaborated to explore the deployment of electric vehicles (EVs) on the Uber platform in several cities across India.

Infrastructure:

Along with the technology, inadequate infrastructure is one of

"Like AI and crypto-currency, EVs have also taken the world by storm in recent years. Though the current adaptability of this segment is at a bare minimum, the future of electric cars is bright. With talks of international brands like Tesla and Toyota planning their launch in the Indian market, this segment in India is expected to reach new heights."

the challenges that the e-vehicles are currently facing. According to study on adoption of electric vehicles done by Velocity MR 90 percent of the Indian car owners who participated in the study claim that they would opt for an Electric car, provided the right infrastructure is made available, along with optimum support system for maintenance of their Electric cars. Over 50 percent of respondents also suggested that the government should take initiatives to increase awareness about the EVs and provide financial assistance in the form of subsidy and reduced road tax. The study observed that while there is some awareness on the electric cars, there are also several misconceptions related to the category. One of the most common misconceptions is the perceived low mileage per charge. 70 percent of the respondents believed that an electric car could provide a maximum mileage of 70km per charge, while the basic models of electric cars available in the Indian market today, provide a mileage of over 100 km per charge.

Jasal Shah, Managing Director & CEO of Velocity MR noted "Like AI and crypto-currency, Electric Vehicles have also taken the world by storm in recent years. Though the current adaptability of this segment is at a bare minimum, the future of electric cars is bright. With talks of international brands like Tesla and Toyota planning their launch in the Indian market, this segment in India is expected to reach new heights."

Seconding the same, Ayush Lohia, CEO, Lohia Auto mentioned, "Electric Vehicles' Penetration depends on the charging infrastructure. Central Government has taken initiative to address this concern and it is part of FAME subsidy as well. With the Government's support, agencies are working in this direction and facilities have been installed at some places as a pilot project."

Understanding need of the hour, technology companies have initiated work towards establishing infrastructure for EVs. Demonstrating its commitment to clean energy , NITI Aayog has installed an ABB Terra 53 fast charging station for electric vehicles at the organization's office in the heart of New Delhi. ABB's 50kW fast charging station can provide a full charge to an electric vehicle in only 30 minutes.

Additionally, Exicom has installed AC & DC electric vehicle charging station at Ministry of Power office in Shram Shakti Bhawan, New Delhi as well as at the United Nation office in the city. It is part of the plan to develop EV charging points across the country. Exicom EV AC Charger supports

BEVC-AC001 specifications. It is designed with three sockets to charge up to 15A per socket (or 3.3KW). It is suitable for installation at wide range of places including parking, service stations, commercial and residential through pedestal mount/ wall mount or pole mount.

According to study on adoption of electric vehicles done by Velocity MR 90 percent of the Indian car owners claim that they would opt for an Electric car, provided the right infrastructure is made available, along with optimum support system for maintenance of their Electric cars.

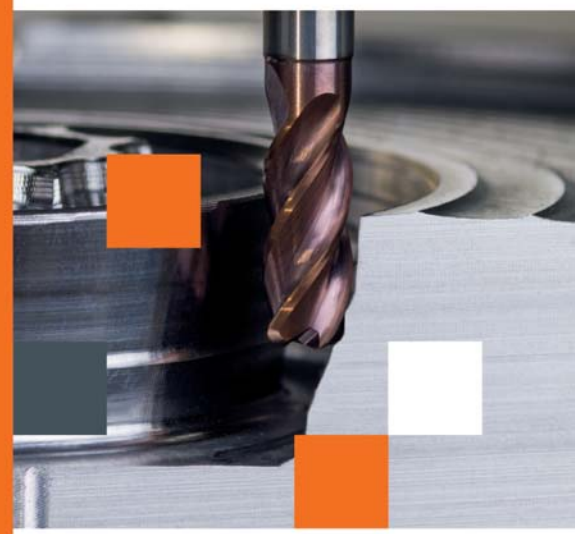
Similar steps are being take n in Mumbai as well. Last year, Tata Power installed EV charging stations at strategic locations in Mumbai and has further plans to multiply the locations in the coming days.

Way ahead

In order to pave a way forward in the field of advanced Li-ion battery technology, Mahindra & Mahindra and LG Chem, Korea's leading manufacturer of advanced batteries, announced collaboration. Mahindra Group also plans to jointly develop new SUVs and a small EV with Ford Motor Company. The two companies signed five MoUs that further strengthen their strategic alliance and accelerate the development of key products for consumers in India and emerging markets.

To conclude, Nishant Arya, "Certainly there are challenges to be overcome. But with almost all major OEMs putting in their best synergies forward in developing EVs and the support infrastructure, I am sure that these challenges will be a thing of the past very soon. The industry is working towards achieving the same as a cohesive unit with the support of the government, concluded Arya.

VERSATILE



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Improving **material handling process**

Material handling is essential part of logistics and manufacturing industry and is integral to design of most production systems.

By Shantanu Singh Chauhan

Material handling embraces all of the basic operations involved in the movement of bulk, packaged, and individual products in a semisolid or solid state by means of machinery, and within the limits of a place of business. Material handling is essential part of logistics and manufacturing industry and is integral to design of most production systems. Here are few tips that can get most out of your material handling system:

Focus on customer services

Planning and standardisation is critical for improving the process. While planning focus on customer services. Setup up customer satisfaction criteria and plan your actions accordingly. Focus on what your commitments to customers are and design processes to adhere to same. Once you have setup a process which can deliver satisfaction to customer, standardised it to maintain consistency.

Optimise and segregate

Taichi Ohno, the father of lean manufacturing, identified 'seven deadly wastes' that prevent the value-added flow from raw materials to finished goods. The wastes are Overproduction, waiting, downtime, unnecessary movement, excess inventory, unnecessary motion and defective products. By implementing the process of lean manufacturing your organisation can easily move from build-to-order to build-to-stock.

> "By using simple easy to remember approaches—reduce, reuse and recycle, you will not only do good to environment but also save you money."

Design for your Unit

It is important to identify and design all your systems and processes for unit load. A unit load is either a single unit of an item, or multiple units so arranged or restricted that they can be handled as a single unit and maintain their integrity (Wikipedia, n.d.). Have clear understanding of shape, weight and velocity of your SKU and Units. Identify how fast your SKU move and assign most active SKUs to closed to input/output point.

> "Material handling operations should be automated to improve operational efficiency, improve consistency and to eliminate repetitive or potentially unsafe manual labour."

Automate

With technology evolving rapidly, automation is key to your success. Material handling operations should be automated to improve operational efficiency, improve consistency and to eliminate repetitive or potentially unsafe manual labour. Before implementing automation, remember to simplify/redesign your process.

Put Human in centre

No Material handling process can be fully automated due to complexity and cost involve in handling different SKU. Human are essential part of your successful Material handling. Ensure your system are designed with ergonomics in mind. Keep safety and accessibility as key ingredient of your process. Optimise task to eliminate multiple touch points. Use experienced staff for unloading and offloading.

Maintenance is the key

Perform audits, and maintenance frequently. Use retrofitting wherever as possible. Keep floor and area crack free. Keep extra spare parts like motors, belts, bearings and rollers all the time.

Environment

Being caring to environment is not only a virtue but a fundamental for success in your Material handling system. Energy use and potential environmental impact should be considered when designing the system. Reuse packaging, reduce wastages, put consistent effort in maintenance of machinery and area. By using simple easy to remember approaches—reduce, reuse and recycle, you will not only do good to environment but also save you money.

The author is Co- founder, Startup Arena.

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High growth trajectory!

Hind Rectifiers Ltd is expecting a much more intensive growth due to addition of several new products and the strategic restructuring of three plants and their capacity enhancement, says **Suramya Nevatia,** the Company's CEO.

By Niranjan Mudholkar

Q. Hind Rectifiers Ltd (Hirect) started its journey way back in 1958. As the new age CEO, how satisfied are you with the progress achieved by the organisation in the last sixty years?

Personally, I have absolutely no complaints. Over the years Hind Rectifiers, or popularly known as Hirect, has created a great brand value and a very respectable positioning in the industry. I can proudly say that we have a legacy of world-class products running in the field since many decades. Starting from Kolkata Tramways and leading into Mumbai Monorail and everything in between.

Not a lot of companies can say that they have withstood the test of time and lasted 60 years and are now on a high growth trajectory.

Q. Who are your key competitors and what is your market share vis-a-vis these rivals?

We have a very diverse product portfolio today, and we compete with a variety of different companies in each segment. Most of the companies that we compete with are multinational conglomerates.

As far as market share goes, there are certain products where we have a lesser market share but in a few it goes up to about 65 percent or more.

Q. I understand that Hirect has four business divisions which include Equipment, Traction, Semiconductor and Trading. Which division has been growing faster in the recent times?

Equipment division caters to our industrial segment where we offer transformer rectifiers for ESP (electrostatic precipitators), active harmonics filter, tailor made rectifiers for a variety of applications such as electro chlorination, plating, runway lighting and cathodic protection and Hirect's expertise – water cooled rectifiers.

"I see Hind Rectifiers Ltd. being the most comprehensive supplier to the Indian Railways and a beacon of solution to any and every industry."

Traction division is our railways division that caters to all the locomotive and coach manufacturing facilities of Indian Railways. We supply all types of transformers, IGBT converters, power systems, rectifiers, electronics and control software.

"We have a very diverse product portfolio today, and we compete with a variety of different companies in each segment. Most of the companies that we compete with are multinational conglomerates."

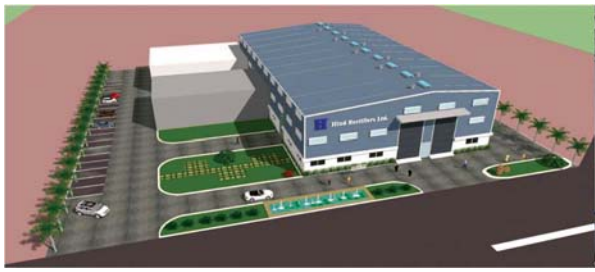
Our traction division has been growing quite rapidly and will continue to do so, mostly attributed to the significant growth being witnessed by the Indian Railways.

Q. Tell us about your manufacturing capabilities.

We have three plants across India. First one is in Mumbai, where we manufacture traction equipment and semiconductor devices. The largest and oldest of the three plants.

The next one is in Nasik, where we have recently undergone an expansion and moved the entire equipment division. This plant is having tremendous capacity and highest form of operational efficiency, we have implemented the Theory of Constraints (ToC) to ensure fastest output.

Finally, we have our Dehradun plant, which has recently been renovated to accommodate traction transformers exclusively. By doing so, we are at capacity to manufacture close to about 15 to 20 units of traction transformers per month, which is one of the highest rate of production in our industry.



Q. You operate in a very competitive industry and also operate in a market where customers are both demanding as well as price sensitive. How are you managing costs at the shop-floor level to ensure good quality at competitive prices?

Price sensitivity is applicable where the product being sold has become a commodity, whereas we strive on technology and innovation. In those areas where we are unable to innovate the product any further, we excel in operational efficiency. Any customer does not want their plant or project to ever get held up because of capital equipment, since they are always in a rush, we are always there to oblige at a premium.

Q. How has been the business in the ongoing fiscal? How does it compare to the growth in the previous fiscal?

It has been a decent performance this year. Our last Quarter has been exceptional. But the upcoming year is going to be the game changer.

Q. At present, what is your turnover and what kind of growth targets have you set for the next two years?

We did Rs.110 crore last year (FY 17). For FY 19 and FY 20 we are expecting a much more intensive growth due to addition of several new products and the strategic restructuring of our three plants and their capacity enhancement.

Q. How do you see your personal journey in the organisation? What is your vision for the organisation?

As far as my personal journey is concerned, it has been invigorating! My vision - I see Hind Rectifiers Ltd. being the most comprehensive supplier to the Indian Railways and a beacon of solution to any and every industry. This is strengthened by a library of innovative technology that we will leverage for manufacturing world-class products, right here in India.

New fuel for a new era!

Audi engineers are now examining the combustion and emission behaviour of renewable fuel in a test engine.

Audi is convinced of the potential of the fuels e-gas, "e-benzin" (e-gasoline) and e-diesel and is continuing to pursue its e-fuels strategy. In the case of synthetic Audi "e-benzin" (e-gasoline), the Ingolstadt company has now achieved an important intermediate goal. Together with their development partners, they have for the first time produced a sufficient quantity of regeneratively produced fuel for initial engine tests.

Together with Global Bioenergies S.A. in Leuna (Saxony-Anhalt), the largest batch of e-gasoline ever produced – 60 liters (15.9 US gal) – has been achieved. "Like all Audi e-fuels, the new fuel has many advantages. It isn't dependent on crude oil, it is compatible with the existing infrastructure and it offers the prospect of a closed carbon cycle," said Reiner Mangold, Head of Sustainable Product Development at Audi AG. Audi "e-benzin" (e-gasoline) is essentially a liquid isooctane. It is currently produced from biomass in a two-step process. In the first step, Global Bioenergies produces gaseous isobutene (C4H8) in a demonstration plant. In the second step, the Fraunhofer Center for Chemical Biotechnological Processes (CBP) in Leuna uses additional hydrogen to transform it into isooctane (C8H18). The fuel is free of sulfur and benzene and is therefore especially low in pollutants when it burns.

Audi is launching a strategic partnership with Global Bioenergies to promote the development of non-fossil fuels. In addition to the Audi e-gas and e-diesel projects, the research into e-gasoline is part of Audi's persistent efforts to find alternative fuels. © Fraunhofer Copyright: Audi AG

Audi engineers are now examining the combustion and emission behaviour of the renewable fuel in a test engine. As a high-purity synthetic fuel with very good anti-knock properties, Audi "e-benzin" (e-gasoline) offers the possibility to further increase engine compression and thus boost efficiency. Over the medium term, the project partners aim to modify the production process so that it will not require biomass – in this case, CO2 and hydrogen produced from renewable sources should be sufficient source materials.

Audi's alternative fuels already offer great potential for sustainable mobility and are helping reduce CO2 emissions from combustion engines – by up to 80 percent in g-tron models, for example.

For Audi, e-fuels are more than just a subject of research in laboratories. Since 2013, the brand with the four rings has been offering renewable Audi e-gas on the market. It originates in part from the company's own power-to-gas plant in Werlte (Emsland). Customers fill up their Audi g-tron model at any CNG filling station and pay the regular price for it. By feeding the computed volume of Audi e-gas into the natural gas grid, Audi ensures the green benefits of the program, including the corresponding reduction in CO2 emissions.

Audi e-diesel is also part of the Audi e-fuels portfolio. In Dresden, Audi's cooperation partner Sunfire operated a pilot plant for this purpose from late 2014 to October 2016. As in Werlte, green electricity supplied the energy, and water and CO2 were also used as raw materials. The end product was called Blue Crude, which was refined into Audi e-diesel. Audi is currently planning production capacity in Laufenburg in the Swiss canton of Aargau. Together with partners Ineratec GmbH and Energiedienst Holding AG, a new pilot plant will produce around 400,000 liters of Audi e-diesel per year. For the first time ever, hydroelectric power is the sole energy supply required for this.

**Fuel consumption and CO2 emission figures given in ranges depending on the tires/wheels used*
Source: Audi AG

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Automation in the Indian industry: **Threat or Opportunity?**

Automation has changed the industry's landscape in India. Along with it, technology has also amended the job requirements.

By B. Thej Kumar

Recently, the opening of a restaurant in Chennai where food is served by robots, has brought the WOW feeling amongst customers. However, robots or automation is not new to India. It has been in the country for quite some time but there is a big leap in this direction across the automotive, pharmaceutical and food and packaging industries in recent times.

In fact, the central budget has identified national programs in the areas of robotics, artificial intelligence (AI) and Industry 4.0. The future of automation in the Indian industry is expected to grow at a CAGR of 25 percent by 2025 as per the survey conducted by CIMA, London.

On the global front, use of robots is immense. For example, Apple manufactures its products in Taiwan with the help of 6000 robots. Similarly BMW and Amazon use robots in their factories and warehouses. Bengaluru based Manipal Hospital uses robots for diagnosis.

3D printing technology and activities related to IoT, Industry 4.0 are giving additional edge to automation and are helping various industry segments such as automotive, jewellery and medical research to a great extent. This raises a question as to what lies in future for the Indian industry. Are we happy about the technological advancements? Or Are we facing a JOB LOSS by these advancements in the Indian manufacturing scenario?

This has given rise to wide spread discussions across different industry segments, committees and government bodies. There is an estimated disruption of the jobs particularly at the grass root level of employees with low skills in coming 10- 15 years. In fact, if the data for last four years are to be seen, a job loss of 12-14 percent in the banking and service industries is observed due to technology invasion (AI, cloud computing etc.) Moreover, IT, BPO industries are also undergoing similar situation where low skill jobs are being impacted by automation.

> Creativity, disruptive thinking finds place in the industries like automotive, jewellery, entertainment, etc. That means plenty of avenues for the human force to master their knowledge and skill to grow.

People in the jobs that require low skills such as machine operators, helpers, support staff, office assistant, etc., are likely to face bigger threat provided they don't upgrade themselves.

Looking at the bright side, all such situations also create opportunities.

Positive side

We need to appreciate the fact that even the smartest machine needs human intervention in the background. Looking back at history of industrial automation since 1900's, even though the job loss was evident, it created immense opportunities

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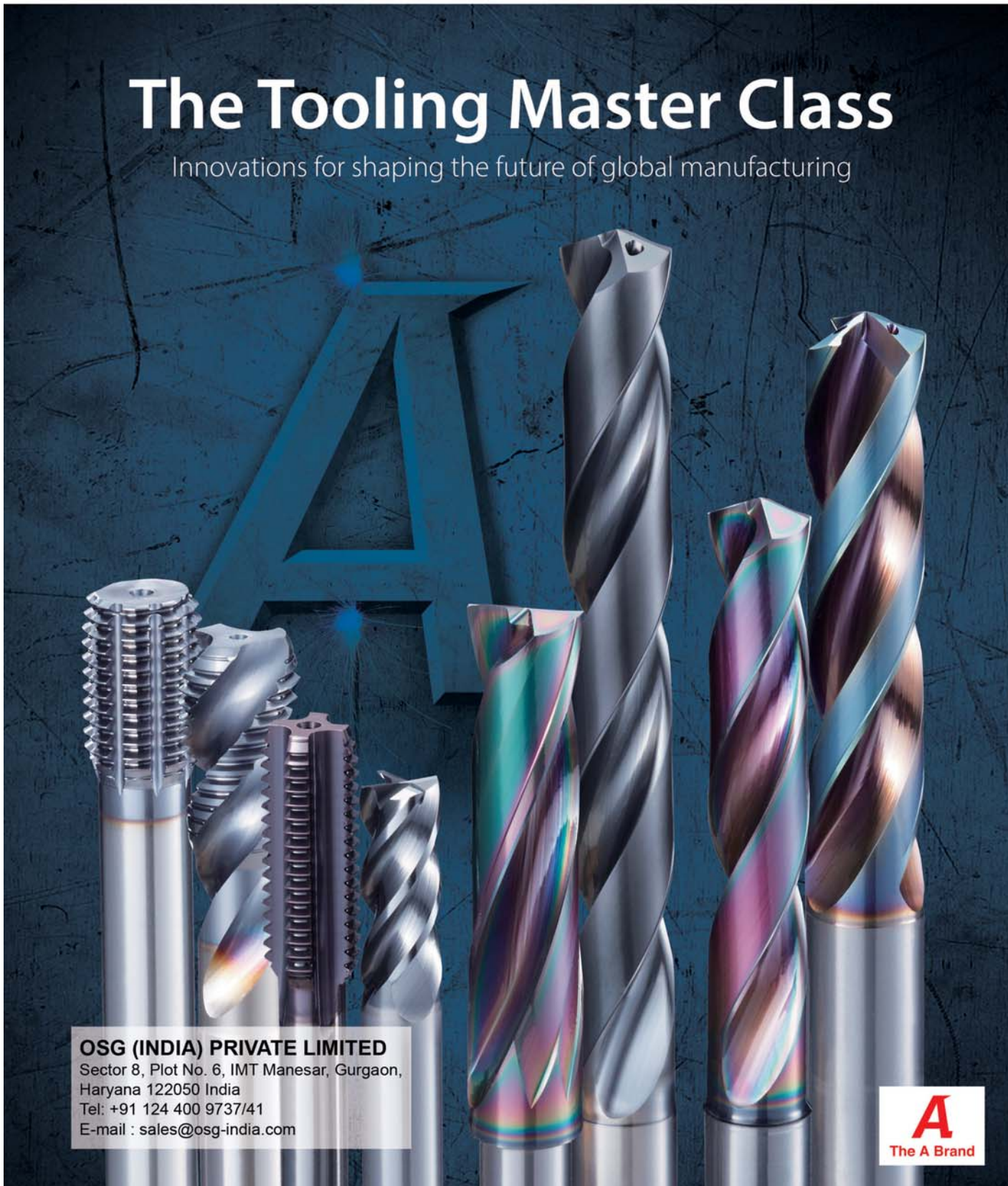

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across different industry sectors. However, in this case skill upgradation is imperative.

Technological revolutions has resulted in differential growth wherein there has been a significant rise of entrepreneurs in areas of Innovation, design, software products.

Autonomous cars, touch free mobile devices, customised designed products with short lead time, man free factory operations are becoming a reality. Creativity, disruptive thinking finds place in the industries like automotive, jewellery, entertainment, etc. That means plenty of avenues for the human force to master their knowledge and skill to grow.

Various government support schemes like the incubation centres for the start-ups, with capital funding, shows a positive picture of the days ahead. The recent survey by a global agency on the top 10 start-up cities has Bengaluru in 7th Best city and the only Indian city globally ranked.

So the need of hour is not fear job loss, but to strengthen our potential and tide over the situation to excel in ones areas.

Challenges

Despite of skill upgradation, embracing the new automated age will still pose challenges.

- Awareness and interest, on new technologies is still at nascent level in the Indian industries. With more than 80 percent of the Indian industries coming under SME category, the importance of automation is still to be understood. Many industries even though aware of the benefits of automation are resistant to change due to various factors.
- The high cost of automation machineries and equipment, the skill set of the present workforce to handle the automation and sustain is a big concern, as most of the items are being imported.
- The cost of training and upgradation of the existing manpower is also taking a back seat with the threat of retention of this skilled manpower.
- At the same there has been a resistance on the part of the grass root level employees to level up. This added with low priority from the government agencies, labour organisations on the skill upgradation, could eventually lead to job threat of the lower employee class.

Universities lay the foundation of knowledge and skill across different areas. This function needs a big changeover. As on today very few universities/colleges offer programmes on automation, robotics, artificial intelligence, etc. There is an immediate need of industry and institutes coming together and address the need for filling this gap of skilled manpower to take up the challenges of technological advancements.

The good initiative of Skill India by the government is the right move, but it has to focus on the new technology areas. The youth of the country should be encouraged to learn the new skills.

Support from the government in terms of changing the tax structure and reducing the duties / taxes for the equipment, machines, software related to automation, robotics or the industry 4.0.

The good initiative of SKILL INDIA by the government is the right move, but it has to focus on the new technology areas. The youth of the country should be encouraged to learn the new skills by special programmes linked with premier institutes, concessions for students and as well the inclusion of the existing work force in such knowledge upgradation.

Quality of life

Undoubtedly the quality of life shall improve across all segments in the future

There may be days ahead, where humans work very little as there would be no work to do, but at the same time enjoy the benefits of technology/ automations.

However if this has to be a reality, government should not work on only cosmetic changes in their policies , but with true intent of development and the universities make serious efforts to maximise offerings on new technologies in their curriculum. Similarly industries should stop pursuing only productivity, profit and start looking into future of automation, robotics, IoT and Industry 4.0.

The onus lies with us to embrace automation and related technology with open mind and heart, by bringing in the changes in ourselves to learn, grow within our area of ownership responsibility and authority to bring the reality of Make in India and to see the country becoming a super power in the global economy.

The author is the General Manager – Product Development and Quality at Toyoda Gosei South India Pvt. Ltd., BENGALURU

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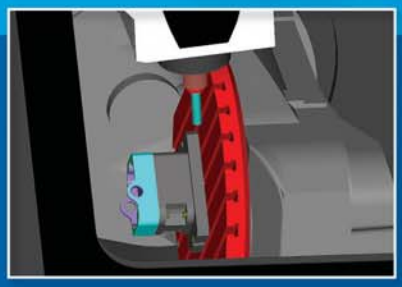

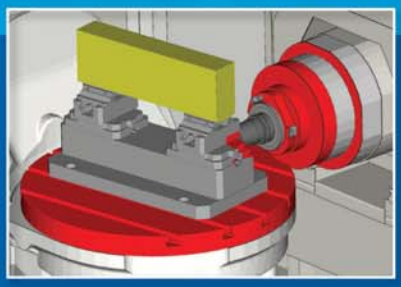

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Godrej Aerospace launches a 'Centre of Excellence' in Mumbai

Godrej Aerospace, a unit of Godrej & Boyce Mfg. Co. Ltd., inaugurated its Center of Excellence (CoE) located in Mumbai. This world-class facility further enhances Godrej's manufacturing capabilities in aero engine industry. Recognizing Godrej's technical expertise, Rolls-Royce had recently expanded its partnership and awarded contracts worth INR 2000 million (USD 30 million) spread over next five years. The contract is for manufacturing products like Unison Rings, Complex Fabrication and external brackets commodities which once in manufacturing, will result in shipment of 600 different parts spread across various Rolls-Royce Civil Aerospace Engine portfolio. The newly inaugurated facility's metallurgy capability includes inconel, stainless steel and titanium. It will commence manufacturing in bulk to prove the production readiness within the next two-three months. Kishore Jayaraman, President, India and South Asia, Rolls-Royce, added, "The expansion of partnership with Godrej & Boyce for manufacturing of aero engine components showcases our commitment to developing an aerospace ecosystem in the country. We are constantly developing and rationalising strategic partnerships across our supply chain. With the expansion of this partnership with Godrej & Boyce, our focus will be to meet our customers' strategic requirements in quality, cost and delivery."

Maxxis India launches a manufacturing plant

Maxxis Rubber India, a sub-company of Maxxis Group, has inaugurated its first manufacturing facility in Sanand, Gujarat. The plant with an investment of over $400 million (Rs 2,640 crore), is spread across a massive 106 acres. The facility is currently dedicated to manufacturing of Two-Wheeler tyres and tubes and will have a capacity to produce around 20,000 tyres and 40,000 tubes per day. With this size and capacity, the company is targeting a market share of at least 15 percent of India's tyre market within five years. Cheng-Yao Liao, President, Maxxis India stated that Maxxis Global is targeting to become one of the top 5 tyre manufacturers in the world by 2026 and India market will play a vital role in their growth.

"We are fully committed to the government's Make in India initiative and our intent is to Make In India for the world. We monitored the market for over two decades and then devised the strategy for entering India. The manufacturing plant in Sanand is only the first step of Maxxis's full range appearance in the country," Cheng-Yao Liao asserted. Maxxis currently serves as an OEM tyre supplier to Honda (Two-wheelers), Maruti Suzuki, Mahindra, Tata and Jeep in India. Apart from catering to the domestic tyre market, the product portfolio from the facility will be exported to South Asia and will further expand to Africa and Middle East countries in the coming years.

LJUNGSTRÖM opens US$ 7 million plant in Chennai

LJUNGSTRÖM, a division of ARVOS Group, has made significant investment in their manufacturing operations in India by setting up new air preheater manufacturing site at Mahindra World City, Chennai. With a significantly higher production capacity of 16,000 metric tons per annum, and an upgraded state-of-the-art manufacturing process and equipment, the new facility will be the leading heating element manufacturer in the region catering to increasing demand for heating equipment in India and support LJUNGSTRÖM's growth strategy. As the number one supplier of air preheaters and gas-gas heaters globally with unrivalled size, scope and capability, LJUNGSTRÖM is committed to developing advanced technologies to provide customers with products and services delivering value added solutions. Spread across 12,000 square meters, the new LJUNGSTRÖM facility is dedicated to heating element manufacturing, quality, testing and inspection. The facility will produce Baskets with LJUNGSTRÖM's latest profile of heating elements like DNF+, DNF, and DUN8 which offer most efficient heat recovery and superior cleanability. It is equipped with the most advanced manufacturing and testing equipment including advanced element crimping capabilities.

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(For automotive professionals only)

ABB opens smart factory in Bangalore

ABB India has inaugurated one of the first smart factories in Bangalore for the production of electrical protection and connection solutions. The facility will be located on the existing factory premises of Nelamangala in Bangalore, the start-up and IT capital of India. The smart factory enables continuous monitoring of the production process through visualization of operational data, to increase efficiency and flexibility of the manufacturing process.

The smart production line can track and display operational performance parameters across the entire manufacturing chain in real time. The factory also has digital lifecycle management with interconnected automation components, machines as well as data about processes and products. Real-time feeds monitor the entire manufacturing process. Remote access and wireless communication with Radio Frequency Identification Devices (RFID) manage the production process, work orders and testing parameters. "ABB has continued

to invest in building capacity to cater to the evolving trends in the Indian market and bridging them with best in class global technology. At ABB, we use smart technology to make solutions that help our customers get digital-ready," said Sanjeev Sharma, MD, ABB India.

Force MTU Power Systems to set up new facility in Chakan, Pune

Rolls-Royce Power Systems and Pune-based vehicle manufacturer Force Motors have recently signed an agreement on a Joint Venture in which Force Motors will hold a 51 percent and Rolls-Royce Power Systems a 49 percent stake. The new joint venture will be named 'Force MTU Power Systems Pvt. Ltd.' and is to produce MTU's renowned 10 and 12-cylinder Series 1600 units with power outputs from 545 to 1050HP (400 to 800 KWm). Overall, the parties are investing more than 40 million euros (300 Rs Crores) in the JV in proportion to their respective stakes. To meet Rolls-Royce Power System's exacting standards, the JV is to build a state-of-the-art, dedicated manufacturing facility at Chakan near Pune. The facility will be equipped with nearly all core functions and is to operate as a stand-alone enterprise. The new factory is expected to launch serial production by the third quarter of 2019. The JV will use Force Motors' expertise to lead localization efforts and aims to achieve consistently high local content without compromising on quality. Generator sets built and supplied by the JV to customers in India, Nepal and Sri Lanka will carry the 'Force – MTU' brand while those destined for the rest of the world will be sold under the name 'MTU Onsite Energy'. The engines will continue to have the brand MTU.

Metso increases production capacity i

Metso is addressing the growing demand for crushing and screening plants in the Indian market by expanding its production capabilities in Alwar. This latest investment increases Metso's crushing and screening plant production capacity in India by 35 percent.

By increasing capacity of the Metso Park factory in Alwar, Metso will improve the availability of its aggregate products in India as well as for export operations to Asia. The expansion will be completed by the end of 2018. "Demand for aggregates crushing and screening equipment has been very strong, and India, with its rapidly developing infrastructure, is one of the fastest growing markets in aggregates," says Markku Simula, President, Aggregates Equipment business area at Metso. "With this investment, we want to ensure that we can meet our customers' growing needs both in terms of capacity as well as range of products available." "There is large-scale investment in road and commercial aggregate in India: during the next couple of years, for example, the road sector aims to increase road building to more than 40 kilometers a day," says Kamal Pahuja, Vice President, Metso India.

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Moving towards **e-mobility**

Nishant Arya, Executive Director, JBM Group talks to The Machinist about trends and challenges in the e-mobility segment.

By Swati Deshpande

Q. The level of awareness on electric vehicles has increased in the Indian market. On this background, how do you see acceptance of the same in the Indian market?

Electric vehicles are gaining rapid acceptance and are on the verge of experiencing tremendous growth in both developed and developing markets globally. The induction of EVs in the Indian ecosystem will not only bring significant changes for the society, but also in reducing the environmental footprint of transportation. According to industry body Society of Manufacturers of Electric Vehicles (SMEV), sales of electric vehicles (EVs) in India grew by 37.5 per cent in 2016 to 22,000 units. The benefits of EVs are expected to provide a net positive economic impact of approximately Rs. 200 billion to the power and utility sector in the country by 2022 as per an Ernst & Young Global 2016 report.

India is working towards steadily ramping up the infrastructure to support faster adoption of EVs, aptly supported by the government. The Government is aggressively looking at incorporating 100 percent eco-friendly and self-sustainable mass transport solutions by 2030. In November 2017, Nagpur became the first Indian city to have an EV charging station set up by Indian Oil Corporation. With the advent of such technologies, India is quickly shaping its mobility transformation. As public transportation becomes the key focus today, electric vehicles seem to be the most promising technology paving the way forward. It is creating a paradigm shift for the overall automobile industry.

> Talking about technology, the best thing is that it is continuously evolving. What looked difficult yesterday seems possible today and will be a reality tomorrow. Electric is also a technology that is evolving and new ways of charging are being developed that will make EVs operate for longer distance in a single charge.

Q. Electric vehicles' penetration depends on the infrastructure such as charging facilities. How do you plan to develop required infrastructure?

JBM Solaris Electric Vehicles focusses to be a one-stop solution provider in the Electric Vehicles segment by providing complete ecosystem solution for E-mobility i.e. Electric Bus, Battery Technology, Charging Infrastructure and Operating Pattern. This will signify the next phase of public mobility in India. In fact, our electric bus ECO-LIFE provides a completely flexible solution offering the ability to adjust the charging system of the bus to an operator's or city's infrastructure. ECO-LIFE e-bus features both regular plug-in charging system and an over-head pantograph for opportunity charging. The charging time required is 15 minutes to 1 hour, depending upon the operating pattern.

Q. What are the challenges in the manufacturing of EVs?

How far the technology for the same is evolved in the country?

Certainly there are challenges to be overcome. But with almost all major OEMs putting in their best synergies forward in developing EVs and the support infrastructure, I am sure that these challenges will be a thing of the past very soon. The industry is working towards achieving the same as a cohesive unit with the support of the government. The government can be the largest buyer of electric vehicles and that will lead to economies of scale for the industry. This will, in turn, also lead to setting up of charging stations across the country.

Talking about technology, the best thing is that it is continuously evolving. What looked difficult yesterday seems possible today and will be a reality tomorrow. Electric is also a technology that is evolving and new ways of charging are being developed that will make electric vehicles operate for longer distance in a single charge.

Having said that, the current efficiency is sufficient for intra-city travel. For instance, JBM-Solaris ECO-LIFE, a Zero Emission Vehicle (ZEV), will save around 959 equivalent tons of carbon dioxide and 350,000 litres of diesel in over 10 years of operation. This is a huge evolution from how public transportation operates in India. ECO-LIFE can give a mileage of 150-200 kms in one charge, good enough for travelling on fixed routes. This is set to get even better with the evolution of technology.

Q. Speed of charging still remains an area of further development. How do you look at it? Is your company working on the same?

Long life lithium-ion batteries coupled with fast charging solutions (plug-in/pantograph) are making electric vehicles increasingly feasible for everyday usage across various applications. ECO-LIFE is one such premium solution we are providing to our customers. As mentioned earlier, the charging time ranges between 15 minutes to an hour, depending upon the operating pattern. Further, our JV partner Solaris Bus is a veteran in electric bus business having delivered more than 15000 vehicles, which are driven in 600 cities across 32 countries globally.

The benefits of EVs are expected to provide a net positive economic impact of approximately Rs. 200 bn to the power and utility sector in the country by 2022 as per an Ernst & Young Global 2016 report.

The new Solaris Urbino 12 electric was named 'Bus of the Year 2017' which is testimony of the technology and performance. JBM and Solaris together are working towards developing and deployment of the right technology that will enable seamless induction of electric buses 'Made in India'.

India is working towards steadily ramping up the infrastructure to support faster adoption of EVs, aptly supported by the government.

Q. Can you please tell us about electric vehicle that you have developed?

India is promisingly advancing towards graduating to a non-fossil fuel based public transportation ecosystem. In line with the Government's vision, our focus is to bring path breaking innovation in the Electric Vehicle space. ECO-LIFE is our first offering in this direction.

We are committed to offering a complete ecosystem solution for e-mobility, thus supporting a green and sustainable environment. ECO-LIFE has been developed in partnership with renowned European bus manufacturer Solaris Bus & Coach S.A. Solaris Bus & Coach has successfully delivered transportation technology to 30 countries and is now present in India in association with JBM Auto.

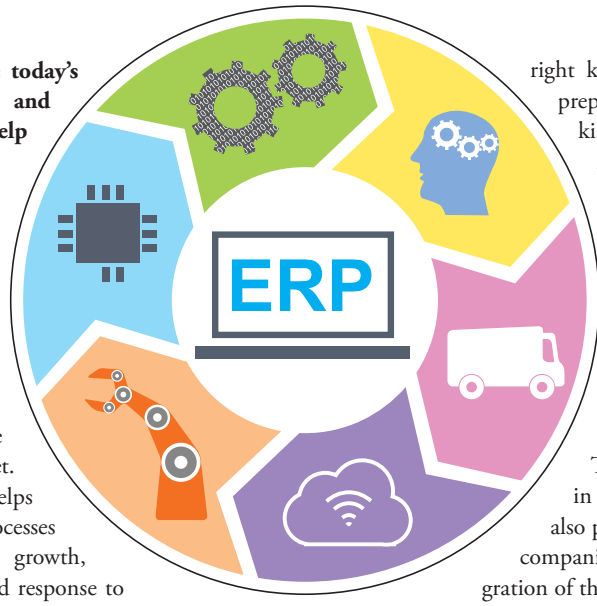
ECO-LIFE is being manufactured at the company's hi-tech facilities in Faridabad (Haryana) and Kosi (Uttar Pradesh). These plants have an installed capacity to manufacture 2000 buses annually.

ECO-LIFE has a corrosion resistant monocoque structure to ensure maximum strength and minimum weight, matching European standards for safety in case of front/side collision and rollover accidents. The bus has cantilever seats that give extra leg room for passengers and increased storage space underneath for belongings. ECO-LIFE also incorporates other utility features such as Passenger Information System (PIS) connected to GPS, Vehicle Health Monitoring System, Battery Management System, Fire Detection & Suppression System, etc. Additionally, the bus also has features like independent front suspension, electronic braking system, wheelchair ramp, innovative electric drive system and kneeling mechanism, wherein the bus kneels 60mm towards the passengers' door side to facilitate boarding and de-boarding of senior citizens, children and the specially-abled.

All about **Integration!**

An integrated technology system will not just help manufacturing companies cope with volatility but will also help them become competitive and successful in the market, says **Thiru Vengadam,** Regional Vice President, India - Epicor

By Niranjan Mudholkar



Q. How would you analyse today's manufacturing scenario and how can technology help them in this context?

It is a fact that today manufacturing organisations need to be agile enough to be able to deal with the volatile changes coming their way. An integrated technology system will not just help them cope with the volatility but will also help them become competitive and successful in the market. An integrated ERP solution helps firms streamline business processes and break down barriers to growth, while remaining agile for rapid response to customer demands and evolving markets.

We also need to understand that the contribution of manufacturing industry to India's GDP is about 16 percent. This is quite low considering and that is one of the reasons why the Government is pushing this industry through initiatives like Make in India. Of course, it will not change things overnight and the manufacturing companies continue to face several issues.

Today, customer demands are changing dramatically. Unfortunately, many manufacturing companies do not invest enough in R&D and product development. So, this needs to change. Manufacturing businesses also need to understand that their markets are now expanding beyond boundaries. Technology can also play a big role in terms of providing the right kind of market intelligence and preparing companies for the right kind of demands so that they modify the existing products or even launch new ones.

"An integrated ERP solution helps companies streamline business processes and break down barriers to growth, while remaining agile for rapid response to customer demands and evolving markets."

Another issue faced by the manufacturing sector is the preparedness (or lack of it!) with regards to various compliances and regulatory norms. What happened during the recent GST implementation is a good example. Technology can not only help in dealing with such changes but also provide competitive advantage to companies who are able to bring in integration of their operations.

While all companies are different, they all face a common challenge: they need a dependable and efficient way to store and access information. That's where ERP systems come into play. ERP systems integrate all facets of an enterprise into one comprehensive information system that can be accessed by individuals across an entire organization. With ERP systems, all vital business functions—estimating, production, finance, human resources, marketing, sales, purchasing—share a central source of up-to-the-minute information.

Q. A key challenge faced by manufacturing plants is to improve scheduling and production while also focussing on quality. How can technology help them?

To start with, manufacturing companies need to have their shopfloors integrated to their overall systems. This is where ERP helps as ERP systems integrate all facets of an enterprise into one comprehensive information system. Employees in scheduling and production, for example, have access to the same data as the staff in quality control.

Quality does not just happen at the end of the manufacturing process. It has to be managed and maintained all through the process. For this, you require visibility and integration. Similarly, when a company has more than one manufacturing plant, the aspect of quality has to be consistently maintained across operations. It cannot be different at different plants! So, quality must be integrated in your entire process and at all

Expansion	Performance	Business Development	Collaboration	Digitalisation	General Shift
Manufacturers expanding beyond traditional markets	Continuous need for improved efficiency in all phases of business	Mergers & Acquisition, Capital Procurement, Global Expansion	Supply chain requirements for innovation and speed	The benefits of digitization combined with raised user expectations	Generational transformation impacting ability to grow
• Projects • Consumer Delivery • Services • Rental • As a Service	• Lean Practices • Process Automation • Operational BI • Immediate Feedback • Additive manufacturing	• Centralization • Global Financials • GRC • Off / Re-Shoring • Localization	• E-Commerce • EDI • Multisite Operations • Supply Chain Visibility • Collaborative Networks	• Mobile "Apps" • Social Collaboration • Cloud • Data Analytics • Internet of Things	• Raised Expectations • Increased Churn • Engagement • Knowledge Retention • Increased Velocity

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your plants. It must also extend to your suppliers.

Q How can Epicor help its customers adopt lean methodologies to improve lead times and reduce waste?

With ever increasing global competition and the demands of an online supply-chain, customers have more influence than ever before. Today, customers are demanding greater product flexibility, smaller and more frequent deliveries as well as higher product quality, and all at a lower price!

That's why manufacturing businesses are now widening the scope of lean principles to encompass all processes that contribute to the bottom line. Manufacturing organisations need to understand that the true advantages of lean thinking will only be fully realized when the entire enterprise adopts the lean ideology. Specific functionality has been developed in Epicor for plant floor operations that are adopting workorderless Kanban manufacturing strategies in part or fully to pull rather than push products through the manufacturing process.

Q What competitive advantages can manufacturing companies gain by adopting the Epicor Mattec Manufacturing Execution System?

With Epicor Mattec MES, manufacturing companies can get 24/7 manufacturing information for all their plant operations. They can implement continuous improvement initiatives to drive business growth and transform the shop floor into a centre of excellence. It can also help companies reduce scrap, waste, and machine downtime with improved cycle times and production schedule efficiency.

This MES extends the Epicor system to help get the powerful metrics companies need to improve performance–OEE, run rates, scrap, yield, energy consumption, material consumption, and much more. Accurate machine-related data, along with operator depth and dimension help manufacturing companies pinpoint critical issues, reduce waste, and improve quality and customer service.

Q While the growth has come back to the Indian automotive industry, it faces tough challenges ahead. How do you see Epicor partnering with this industry?

The Epicor for Automotive technology platform provides an efficient interface and process to manage the volume of data that is possible with long-term Just-in-Time (JIT) contracts. It includes Demand Management, which handles creation, analysis, manipulation, and reconciliation of cumulative records for releases from your automotive customers. The Purchase Contracts module handles cumulative records for releases to your automotive suppliers. Setting up and changing deliveries (i.e., delivery dates and quantities) on purchase orders is automated, so that you can easily make changes to the schedule as your needs change.

This solution supports enterprise purchasing management and advanced multi-plant management, which enables companies to synchronise their manufacturing operations globally, by deploying and consolidating enterprise information across multiple companies, multiple servers, multiple databases and multiple countries.

Q The aerospace and defense industry is extremely demanding. What solutions does Epicor offer to them?

We understand that aerospace and defense (A&D) manufacturer must identify, consider, and respond to a new set of challenges each day. Change in this industry is a given; managing the change with tools and services to distinguish a business from local and global competition is fundamental. With increasing pressure to reduce prices in a business climate of expanding raw material cost and reduced labour availability, businesses like yours are streamlining and adopting new technology to automate business processes for more competitive lead times and to reduce waste in the organization. Epicor for Aerospace and Defense is a global enterprise resource planning software solution designed for manufacturing organizations who supply products and services to the aerospace and defense industry. A&D manufacturers are continually being monitored for delivery performance, cost, and quality by their customers. To assist A&D organizations in maintaining their premier status as A&D suppliers, we offer a suite of functionality designed to put the demands of their customer first.

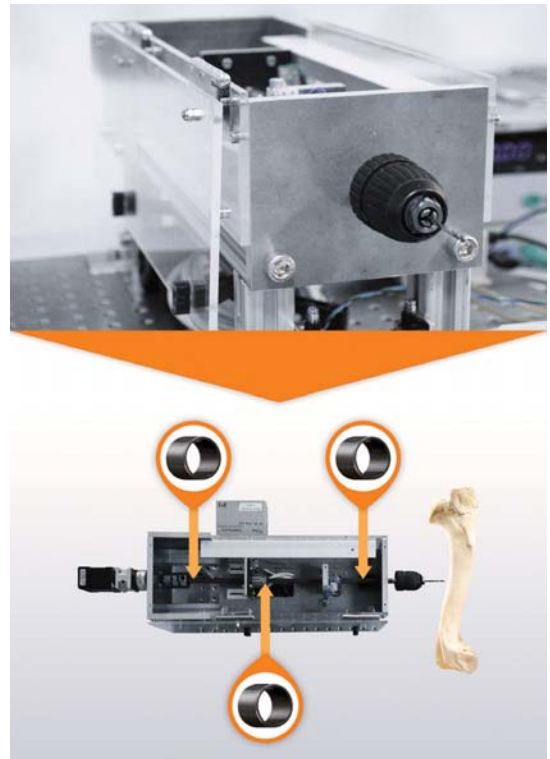
Plain bearings in intelligent drilling machine

iglidur L500 plain bearings ensure lubrication-free bearing in the student project "Smart Drill" at the University of Bremen

The goal of the student project 'Smart Drill' is to fix bone fractures safely. The young team from Bremen Institute of Measurement Technology, Automation and Quality Science (BIMAQ) developed an attachment for a medical drill. During the drilling process, it measures the depth of the hole in order to determine the correct screw. Due to the special demands on the bearing points of the measuring system, such as resistance to chemicals and moisture, as well as a trouble-free mounting at high speeds, the use of the lubrication-free iglidur L500 plain bearings is an optimal solution.

The bearing withstands medical sterilisation at extreme temperatures. Moisture resistance also plays an important role. iglidur L500 absorbs water only to a negligible extent and is lubrication-free.

For fixing a fracture in osteosynthesis it is often necessary to make screw connections inside the bone. The length of the screw needs to be precise to avoid injuries of the surrounding tissue structure and to ensure sufficient strength. The determination of the bone diameter and depth of the hole can be ascertained in advance only and must be determined during the operation by means of a gauge. This is currently dependent on the operator's experience and can lead to errors in the selection of the screws. To make this process safer, in a project called the "Smart Drill" a student group from Bremen developed an attachment for the existing drilling machine that supports the length selection of the screw with measuring values. Lubrication-free igus bearings made of high performance polymers are used at the bearing points of the drive shaft.



"The combination of rotary drive and axial vibration requires the use of high-quality plain bearings not only to implement freedom of movement in the axial direction, but also to achieve the most accurate signals possible at high vibration frequencies."

Michael Sorg, Bremen Institute of Measurement Technology, Automation and Quality Science (BIMAQ)

iglidur L500 convinces with high wear resistance

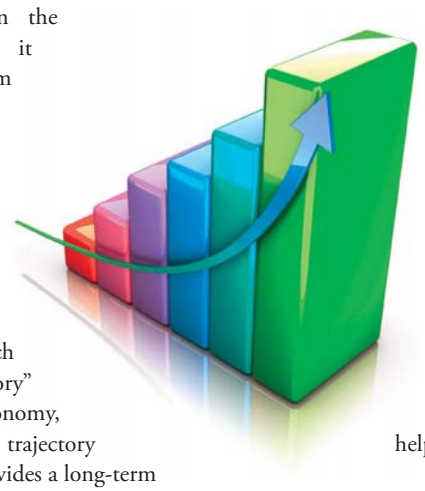
The special requirements of the medical drilling machine were to develop an optimal bearing in different speed and vibration frequency ranges without a negative influence on the system. "The combination of rotary drive and axial vibration requires the use of high-quality plain bearings not only to implement freedom of movement in the axial direction, but also to achieve the most accurate signals possible at high vibration frequencies," explains Michael Sorg of the Bremen Institute of Measurement Technology, Automation and Quality Science (BIMAQ). To cover all requirements, various igus plain bearings are compared, and iglidur L500 has been selected as the best option. The plain bearing has low friction values and high wear resistance and allows both the rotary and the axial movement. The iglidur L500 is far from its load limit at speeds of up to 900 revolutions per minute. The bearing withstands medical sterilisation at extreme temperatures. Moisture resistance also plays an important role. iglidur L500 absorbs water only to a negligible extent and is lubrication-free. There is thus no risk of contamination of the wound or a premature bearing failure due to washout of the lubricant. Thus, the bearing meets the hygienic requirements of medical technology. The low installation sizes and the very low weight compared to bearings made of metallic materials are also convincing.

Source: igus (India) Pvt Ltd

India's growth story is **remarkably stable and resilient**: WB

Sustained acceleration to eight percent plus growth will require durable momentum in investments, exports and bank credit.

The Indian economy is set to revert to its trend growth rate of 7.5 percent in the coming years as it bottoms out from the impact of the Goods and Services Tax (GST) and demonetization, a new World Bank report says.



The India Development Update, released recently, is a biannual flagship publication of the World Bank which takes stock of the Indian economy. The current issue (March 2018), titled "India's Growth Story" describes the state of the Indian economy, shares India's growth experience and trajectory over the past several decades and provides a long-term perspective on India's growth outlook. Over the last 50 years, the Update notes that India's average growth has accelerated slowly but steadily across sectors – agriculture, industry and services – and become more stable. This is reflected in increasing labor productivity and total factor productivity. After growing far more rapidly before the global financial crisis, the economy has grown at an average rate of about 7 percent since 2008–09.

The Update centers around an assessment of what it will take for India to return to growth rates of 8 percent and higher on a sustained basis. To sustain its growth path, India will need to keep a close eye on several factors to make the country more resilient to shocks: the changing landscape of open trade, reforms in the banking sector, strengthening financial institutions, and regulatory supervision of the financial sector. Deepening its structural reforms in the areas of health, education and service delivery will be critical for development of human capital required to sustain growth.

Outlook

India's GDP growth saw a temporary dip in the last two quarters of 2016-17 and the first quarter of 2017-18 due to demonetization and disruptions surrounding the initial implementation of GST. Economic activity has begun to stabilize since August 2017. India's GDP growth is projected to reach 6.7 percent in 2017-18 and accelerate to 7.3 percent and 7.5 percent in 2018-19 and 2019-20 respectively. While services will continue to remain the main driver of economic growth; industrial activity is poised to grow, with manufacturing expected to accelerate following the implementation of the GST, and agriculture will likely grow at its long-term average growth rate.

India's growth in recent years has been supported by prudent macroeconomic policy: a new inflation targeting framework, energy subsidy reforms, fiscal consolidation, higher quality of public expenditure and a stable balance of payment situation. In addition, recent policy reforms have helped India improve the business environment, ease inflows of foreign direct investment (FDI) and improve credit behavior.

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The Update points to the positive impulse expected from India's novel GST system which, while remaining more complex than comparable systems in other countries, is likely to improve the domestic flow of goods and services, contribute to the formalization of the economy and sustainably enhance growth.

"India's long-term growth has become more steady, stable, diversified and resilient. In the long-run, for higher growth to be sustainable and inclusive, India needs to use land and water, which are increasingly becoming scarce resources, more productively, make growth more inclusive, and strengthen its public sector to meet the challenges of a fast growing, globalizing and increasingly middle-class economy," said Junaid Ahmad, World Bank Country Director in India.

Growing at blazing fast speed!

Having established its position amongst the top five Indian brands, Ziox Mobiles now plans to enter the consumer durables segment, says, **Deepak Kabu,** Chief Executive Officer, Ziox Mobiles

By Niranjan Mudholkar

Q Tell us about your personal journey with Ziox Mobiles so far.

Today, India has become a prime hub for Mobile brands and IT peripherals. The market has progressed exponentially and there are more than 200 million devices sold every month. The growing clutter has led India to become highly competitive. Ziox, in this clutter, has carved a niche for itself & has enabled access to high-performance, quality-assured mobility solutions, in order to fulfil the mobile connectivity aspirations. Committed to offering high-end features, into a budgeted mobile phone, without compromising with quality, Ziox Mobiles proudly ranks amongst the 'Top five Mobile Brands in India'. Starting from ground level the brand has come a long way.

In terms of my journey with Ziox, it has been exciting yet quite challenging. Ziox has seen hard times, right from growing competition, clutter/dominance of International Brands, GST, Demonetization we have seen it all, yet have risen to be the stronger, establishing a Brand name.

About Ziox

Ziox Mobiles, under the aegis of Sun Airvoice Pvt. Ltd was incepted in 2015. Headquartered at Delhi, Ziox Mobile within a year has built up an impressive product portfolio. The brand is fostered on the premise of 'Matlab Ki Baat'. The phrase denotes towards the product design and proposed brand idea that; Ziox is about getting to the crux of the matter without wasting time on the trappings.

> "We do have plans to enter the consumer durable segment. Our first product in the consumer durable segment is planned to be televisions sets and with further down the line, we plan to expand to washing machines and air conditioners as well."

Today, consumers have become tech-savvy, they opt for a gadget which needs to match its dynamic lifestyle, that perfectly blends the aspects of superior technology tagged in a cutting-edge and reasonable price band; and this is where Ziox perfectly fits in. The journey until now has been satisfying. We look for such exponential growth and to remain steadfast to cater the needs of consumers.

Q What is the genesis of the name Ziox?

Ziox Mobiles defines blazing fast speed. Derived from the word, 'Zi' in Romanian, which means day. The brand is steadfast on the vision of digitally transforming the way consumers have ideology of high-end smartphones and even feature phones.

Q Tell us about Ziox's overall manufacturing capabilities and capacities.

Ziox Mobiles, one of the leading frontrunner mobile brands in India, has its manufacturing unit located in Peeragarhi, New Delhi. Our Peeragarhi unit is one lakh sq. ft. in size and has around 12 Lines with a capacity to produce 10-20K mobile phones a day. Currently, we are focussing on increasing

our capacity for production to meet the growing demand for Tier 2 and Tier 3 Markets.

You operate in a very competitive industry and also operate in a market where customers are both demanding as well as price sensitive. How are you managing costs at the shop floor level to ensure good quality at competitive prices?

Indeed, consumers want it all. Be it the best of technology, best of price, or the best of design. Hence, to cater all the needs of the consumers efficiently in one product, Ziox is not only focussed on technology as the aspect of innovation but more on having the better product. We believe that the key aspect of innovation is the needs of the customers and their purchase criteria.

The evolution and markets and the pace of the trends are determined not by the improvements in the products or technology but the customers' shifting demands and purchase criteria.

Our early development cycle is focussed on attributes to a product beyond price, for which customer is willing to pay for; be it the reinventive technology, user-friendly interface, blazing fast processor or the glut of features at reasonable prices.

"Our Peeragarhi unit is one lakh sq. ft. in size and has around 12 Lines with a capacity to produce 10-20K mobile phones a day. Currently, we are focussing on increasing our capacity for production to meet the growing demand for Tier 2 and Tier 3 Markets."

How many phones are you currently manufacturing every month and how many are getting sold?

We are currently selling around 3-4 lakhs handsets, monthly and manufacturing almost 90 percent of the total monthly sale i.e. 2.70 lakh approximately.

At present, what is your turnover and what kind of growth targets have you set for the next two years?

At present, our total turnover is around Rs300 Crore and we envision to achieve the target of Rs600 Crore, in next two years.

The Indian mobile market is flooded with many big and small names. How do you plan to compete with these mega brands?

Ziox Mobiles is a name, synonymous with best-in-class smartphones and feature phones. Being a Mobile brand, we keenly map consumer demands and desire to cater the needs of the consumers. From No-G to 4-G, Ziox Mobiles are integrated with the trends of the industry and demands of the customers. Every Ziox Mobile is tailor-made for Indian audience which not just look for quality and technology but also an extremely

"The market has progressed exponentially and there are more than 200 million devices sold every month. The growing clutter has led India to become highly competitive."

reasonable price tag. As a brand, we have excelled in both the portfolios, catering the needs of the customers. Ziox concentrates on creating a widespread, end-to-end consumer mobility solutions ecosystem which even includes the manufacturing, supply chain, delivery and distribution channels. Additionally, we have a complete hold on our supply chain and are involved in the component production, in-house manufacturing and design of all our offerings. This proficient hold is the reason we make good promises of delivering the value-driven and quality-assured products that have helped us create our own benchmarks by marrying affordability with functionality.

Ziox Mobiles, not just comes with trending beauty and hard-core brains, it also brings to the customers, quality assurance. We have come up with 100-days replacement warranty to our users in order to further reiterate our commitment to deliver the most user-centric services. The Mobile industry landscape, today being highly competitive, we mark a difference by following an experience-first strategy; our products offer best-in-class features such as high-quality camera, long-lasting battery life and better features at extremely competitive prices. Ziox Mobiles offer more value for every purchase.

Ziox already has captured three percent to five percent share of the market with its extensive reach across pan-India. On the course, we aim to target the unexplored markets, especially the non-metro markets. We are doing everything necessary to be present at every consumer touch points.

Ziox aims to capture five percent market share by the end of the Calendar year. What is your strategy for the same?

"The strategy is to go bottoms-up and target the unexplored rural and semi-urban consumers, as well as socio-economic people."

The Indian consumer landscape is highly fragmented over the lines of regions, culture and demographics, etc. However, a key aspect that plays the major role is buying preferences while the millennial consumer base continues to be a chief driver for e-commerce adoption. India, having the economy of 1.3 billion consumers, always has diverse demands and varied needs. Having said that, our long-term vision at Ziox Mobiles is not restricted to select groups or regions, but extends to all consumers and markets; we, as a brand have come up with tailor-made solutions for the Indian audience.

We are currently concentrating on the R&D perspective, software development, OS customisation, and consumer experience based on the feedback given by consumers. Post-sales services also play a very crucial role in our growth. This strategy is to go bottoms-up and target the unexplored rural and semi-urban consumers, as well as socio-economic people. We also have a distributor even at the tehsil level, making us available at the farthest touch points. Availability, Right Price Points and Latest Solutions with a key focus on After Sales defines our next steps.

Q Will you also consider diversification into other product segments beyond mobile phones?

We do have plans to enter the consumer durable segment. Our first product in the consumer durable segment is planned to be televisions sets and with further down the line, we plan to expand to washing machines and air conditioners as well. Furthermore, the mobile phones will be marketed offline and online through various channels such as Flipkart, Amazon, Shopclues and several more. As a Brand, we have progressed this far, we will leverage it with further diversification.

Q Rurbanisation or transformation of India's rural landscape is creating a new breed of customer who is economically still evolving and yet is aspirational. Do you plan to innovate to address the needs of this customer?

The youth of India has the power and influence to guide consumer preferences. However, these widespread and diverse consumer preferences have one-factor trending, which is Innovation. Hence, our products are loaded with high-powered battery and innovative features. The innovative features are not only confined to the applications but also towards the camera. The display is another area in focus; so Ziox Mobiles are upgrading with an edge-to-edge display and bigger screen size. So, innovation is the flavour of the Tech season.

PRODUCTS

Next generation anti-vibration carbide end mill

OSG Corporation has released its new AE-VMS anti-vibration carbide end mill offering, a series designed to attain an all new level of milling efficiency coupled with superb finish quality suitable for a variety of milling applications.

In high-speed milling, surface finish quality is often jeopardized for the sake of speed. The AE-VMS' sharp positive rake angle geometry significantly reduces cutting force to minimize tool wear and potential damage to the workpiece even under aggressive cutting conditions. Cutting vibration is minimized with the AE-VMS' unequal spacing of teeth and variable-lead geometry. Furthermore, its unique flute form helps facilitate trouble-free chip evacuation to enable stable and consistent performance. With the AE-VMS' high tool rigidity, the occurrence of burrs can be suppressed to ensure high milling accuracy. With the addition of OSG's original DUARISE coating, tool life can be enhanced by its excellent lubricity, superior friction-resistance and high oxidation temperature qualities. The DUARISE coating's multi-layer construction minimizes thermal cracks, allowing the AE-VMS to excel even in water-soluble oil.

The AE-VMS is designed to accommodate a wide range of milling operations including slotting, side milling, helical milling, contour milling and ramping in stainless steel, cast iron, carbon steel, alloy steel and hardened steel (up to 40 HRC). Tested repeatedly to guarantee consistent performance and quality even in difficult-to-machine materials, the AE-VMS is the new standard for milling.

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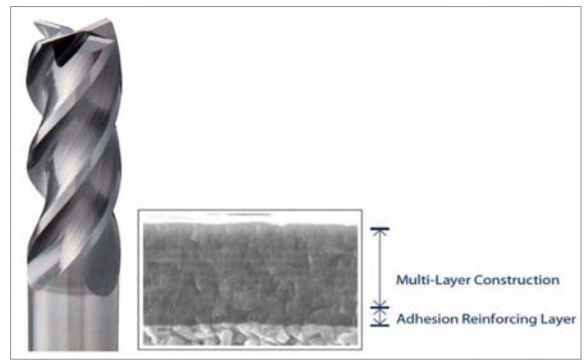


ZF India Technology Centre (ITC) successfully completes one year

ZF India's state-of-the-art India Technology Centre (ITC), successfully completed one year. In the last one year, the ITC has effectively established its systems and processes for consistent delivery of packages in line with ZF global standards. The ITC is all ramped up to support customer programs and has also got optimistic feedback from its corporate audit team and data security team for its standard operating procedures. Currently, ZF has more than 1,000 engineers working on development projects from India through its service partners and employees. In the last one year, it has successfully added around 400 talented engineers to its workforce at ITC. More than 50 percent of the engineers working at the ITC have come from global multinational companies and 30 percent of them are post-graduates. More than 80 percent of ITC engineers have four plus years of work experience. ZF ITC plans to hire another 1,100 people by 2020. Commenting on the occasion, Mamatha Chamarthi, Chief Digital Officer, ZF Friedrichshafen AG said, "The India Technology Centre within one year has become a pillar of innovation for our organization. A lot of R&D and software development work is happening at the ITC which is in tandem with our global strategies and product development. The diverse talent pool available in India is a huge boon for us and we hope to continue doing great work."

WACKER opens a new plant for functional silicone fluids in India

Wacker Metroark Chemicals Pvt. Ltd. is expanding its existing silicone production at its Amtala site near Kolkata with a new hydrosilylation plant for manufacturing functional silicone fluids. The plant with an annual capacity of over 6,000 metric tons was officially opened today at a ceremony in Amtala. The expansion is WACKER's response to growing regional demand for specialty silicones for use in the textile, personal-care, rigid and flexible polyurethane foam and agrochemical sectors. The investment for the plant amounts to around €6 million. "With this expansion of our production, we are broadening our product portfolio and can thereby open up new markets in the growth regions of India and Southeast Asia," explained Christian Hartel, Executive Board member at Wacker Chemie AG with responsibility for Asia. "Our new hydrosilylation plant enables us to address promising new markets where we haven't been represented in India and Southeast Asia until now – for example the market for silicone functional fluids with its many sales opportunities," said Soumitra Mukherjee, MD, Wacker Metroark Chemicals.

Hero Motocorp starts work on its 8th manufacturing plant

Hero MotoCorp has recently commenced the construction of its new manufacturing facility in the state of Andhra Pradesh. Pawan Munjal, Chairman, MD & CEO, Hero MotoCorp, along with the Chief Minister of Andhra Pradesh N. Chandrababu Naidu laid the foundation stone of the new facility in Sri City during a ceremony.

This will be the eighth manufacturing facility of Hero MotoCorp, which already has five world-class plants in India and one each in Colombia and Bangladesh. Spread over 600 acres in the Chittoor district of Andhra Pradesh, the facility will have an annual installed capacity of 1.8 million units, which will be achieved in three phases. The company will invest Rs. 1600 crore in setting up the manufacturing facility. The plant is expected to be operational before December 2019. The new facility will generate 2000 jobs at the Plant and is expected to generate an additional 10,000 employment opportunities, through the creation of a manufacturing eco-system of vendors and suppliers in the region. Given the strategic location of the plant, this can also act as a key hub for the Company to export its range of products from this facility to some of its key overseas markets. The new plant will be based on Hero MotoCorp's core principle of sustainable manufacturing, as the company remains committed to maintaining the highest ecological standards.

RS India opens Swiss precision and assembly plant

Switzerland-based Scientist Dr. Rajendra Joshi and his wife Ursula Joshi (RUJ Group) have set-up India's first of its kind 'Swiss Precision & Assembly' unit in Jaipur, Rajasthan in joint venture of Switzerland based company. RUJ & SRM Mechanics (RS India, in short) is the JV between Rajendra and Ursula Joshi Skill Development Pvt. Ltd. and a Swiss Company SRM Technologies AG. The mission of RS India is to provide best of the solutions to the manufacturing industry for their need of high precision metal parts with value addition of metal anodizing, painting and heat treatment etc. It aims to offer manufacturing solutions to the sectors like Health and Medical, Automotive, Polymechanical, Machine Automation, Laboratory Technology, Photo Technology and Aerospace, etc., where high precision parts play a crucial role for the end products. Dr. Rajendra Joshi, Chairman of RUJ Group said, This newly inaugurated Swiss precision and assembly plant will be initially furnishing orders received from SRM Technologies as their Switzerland facility is operating at its optimum production capacity and has two years orders pending in advance.

Viega opens a facility

Two years after the ground-breaking ceremony, Viega, one of the world's leading manufacturers of plumbing and heating installation technology, has opened a manufacturing facility in India. The company has invested 20 million euros in the approximately 1,60,000-square-feet facility which also includes a logistics centre, research & development department, and a customer experience centre. At the new Viega location in Sanand, around 30 km from Ahmedabad, floor drains and toilet cisterns are currently being manufactured for the Indian market. Manoj Maithani, Vice President Sales and Marketing at Viega India Pvt. Ltd. said, "In the coming years, we want to locally manufacture products that we currently import into India. To this end, we have designed the plant so that it can always be adapted to changing production requirements and market needs."

PRODUCTS

Gears, gear components & assemblies

The product range of Eppinger covers: spiral bevel gear sets – 10 to 1 ratio dia 457 mm; 2 to 1 ratio – dia 406 mm, module up to 12.7; 1 to 1 ratio – dia 323 mm; hobbed gear – dia 500 mm x 8 m; hardened and profile ground spur and helical gears – dia 330 mm x 5 m; internal gears – dia 152 mm x 3 m; and custom built/non-standard gears and gear assemblies. While Eppinger Gears are exported to Europe, Korea, etc., in the domestic market, it is very well received for almost all critical applications like machine tools, railways, textiles, automation, automotive, engineering, pumps, compressors, printing machines, etc., Attention to details, superior engineering practices, ultra modern manufacturing facilities, very high degree of process discipline and 'cutting edge' quality control techniques help Eppinger Gears roll-out products which are unmatched in quality and performance. This USP makes Eppinger Gears an icon among the equals.

Eppinger Tooling Asia Pvt Ltd offers a wide range of Gears, Gear Components and Gear Assemblies. Established in 1925 in Denkendorf, Germany, today the company is well equipped to offer a wide range of gear assemblies, gear components and high precision gears—both standard and custom built. State-of-the-art manufacturing and quality control facilities ensure top quality, way above the local makes.

For more details, contact:
Eppinger Tooling Asia Private Limited
E-mail: marketing@eta-tools.com; eppinger@dataone.in

High-performance hydraulic expansion toolholder

Particularly for machines with BT dual contact interfaces, SCHUNK, the competence leader for clamping technology and gripping systems now offers the high-performance hydraulic expansion toolholder SCHUNK TENDO E compact in a version for simultaneous taper and face contact, which compensate for the weakness of steep taper interfaces. This allows the user to use the full performance potentials of the machine.

In the past, users who wanted to efficiently and economically machine with steep taper mountings, quickly met their tool's limits. At an increasing speed, the spindle arbor expands and the contact surface between tool mounting and spindle is reduced. The consequences of this instability are serious: The system consisting of machine, toolholder and tool starts vibrating, the power transmission suffers, precision, and surface quality at the workpiece is lost, and tools wear out quickly. This weakness can be completely eliminated if machines with BT dual contact interface are combined with a SCHUNK TENDO E compact BT-DC hydraulic expansion toolholder. The taper and face contact system closes the gap between tool flange and end face of the machine spindle and a precise dual contact of the spindle at the taper and the end face of the machine spindle is given. At the same time, the system prevents the toolholder from drawing further back into the machine spindle, and stops motion along the Y-axis. Because of this radial rigidity and vibration strength of the whole system is maximized, and partly surpass the values of other standardized machine interfaces.

First-class quality and performance

TENDO E compact BT-DC with taper and face contact combines high clamping forces and an excellent vibration damping with an extraordinary bending and torsional strength. At an excellent machining quality and precision, the cutting parameters are increased, and in turn the machining time and costs are reduced. Comparable with a shock absorber, the world's most powerful hydraulic expansion toolholder reliably absorbs vibrations, and provide for a quiet and exact cutting action. In heavy duty machining and drilling and reaming operations, the user benefits from an extremely high surface quality. Particularly the geometric three-dimensional precision of form and die are substantially improved. Moreover, the high run-out and repeat accuracy at the spindle interface ensures for long tool life, maximum protection of the spindle and for high process safety.

TENDO E compact BT-DC with taper and face contact combines high clamping forces and an excellent vibration damping with an extraordinary bending and torsional strength.

Up to 60% higher torques

At a permanent run-out accuracy of < 0.003 mm at an unclamped length of 2.5 x D, and a balancing quality of G 2.5 at 25.000 rpm, the SCHUNK TENDO E compact BT-DC with simul-taneous taper and face contact seamlessly fits into the proven hydraulic expansion technology program from SCHUNK. Its clamping forces are about 20% higher than the ones of conventional hydraulic expansion toolholders. Compared with conventional hydraulic ex-pansion toolholders, the TENDO E compact transmits up to 60% higher torques. For fast tool change, all that is needed, is an Allen key. All popular shank types, also Weldon or Whistle Notch shanks can be clamped. By using intermediate sleeves the clamping diameter can be flexibly reduced. Initially, the SCHUNK TENDO E compact with simultaneous taper and face contact interface will be available on a basis of BT 30 (Ø 20 mm). At the beginning of 2017, BT 30 (Ø 12 mm), and BT 40 (ø 12 mm, ø 20 mm) will follow.

For more information, contact:
Satish Sadasivan
SCHUNK INTEC INDIA PRIVATE LIMITED
Email: info@in.schunk.com
Web: www.in.schunk.com

Proven machines with new distance between centers 1600 mm

Up to now, STUDER has only been able to offer the high-end S41 machine for long workpieces up to 1600 mm. This is now remedied by a comprehensive expansion of the machine portfolio for large distances between centers.

STUDER is expanding its product portfolio and bringing three new machines to the market. They all have a distance between centers of 1600mm. The customer now has the chance to choose: Does he have simple requirements on the machine or is complex machining required? STUDER now offers the right machine for long workpieces too.

Up to now, STUDER has only been able to offer the high-end S41 machine for long workpieces up to 1600 mm. This is now remedied by a comprehensive expansion of the machine portfolio for large distances between centers. STUDER presents the favorit, S33 and S31 machine types with a distance between centers of 1600 mm.

favorit – the economical machine

This CNC universal cylindrical grinding machine is designed for grinding in individual and series production and can be automated. It can subsequently be easily adapted to other grinding tasks with the aid of various accessory kits such as in-process gauging, balancing system, contact detection and length positioning. The favorit is a very cost-effective machine. As with all STUDER cylindrical grinding machines, the proven Granitan® machine bed ensures the legendary precision. The wheelhead, which can be automatically positioned every 3°, can take one belt-driven external and internal grinding spindle respectively.

S33 - for individual requirements

The S33 is designed for grinding in individual and series production and can be automated. Three grinding wheels ensure that the workpiece can be machined even more individually and quickly - complete machining in a class of its own! The wheelhead with motorized spindles can be equipped with two external and one internal grinding wheel in 10 different arrangements. The S33 has a B-axis with 1° Hirth gear.

> "It can subsequently be easily adapted to other grinding tasks with the aid of various accessory kits such as in-process gauging, balancing system, contact detection and length positioning."

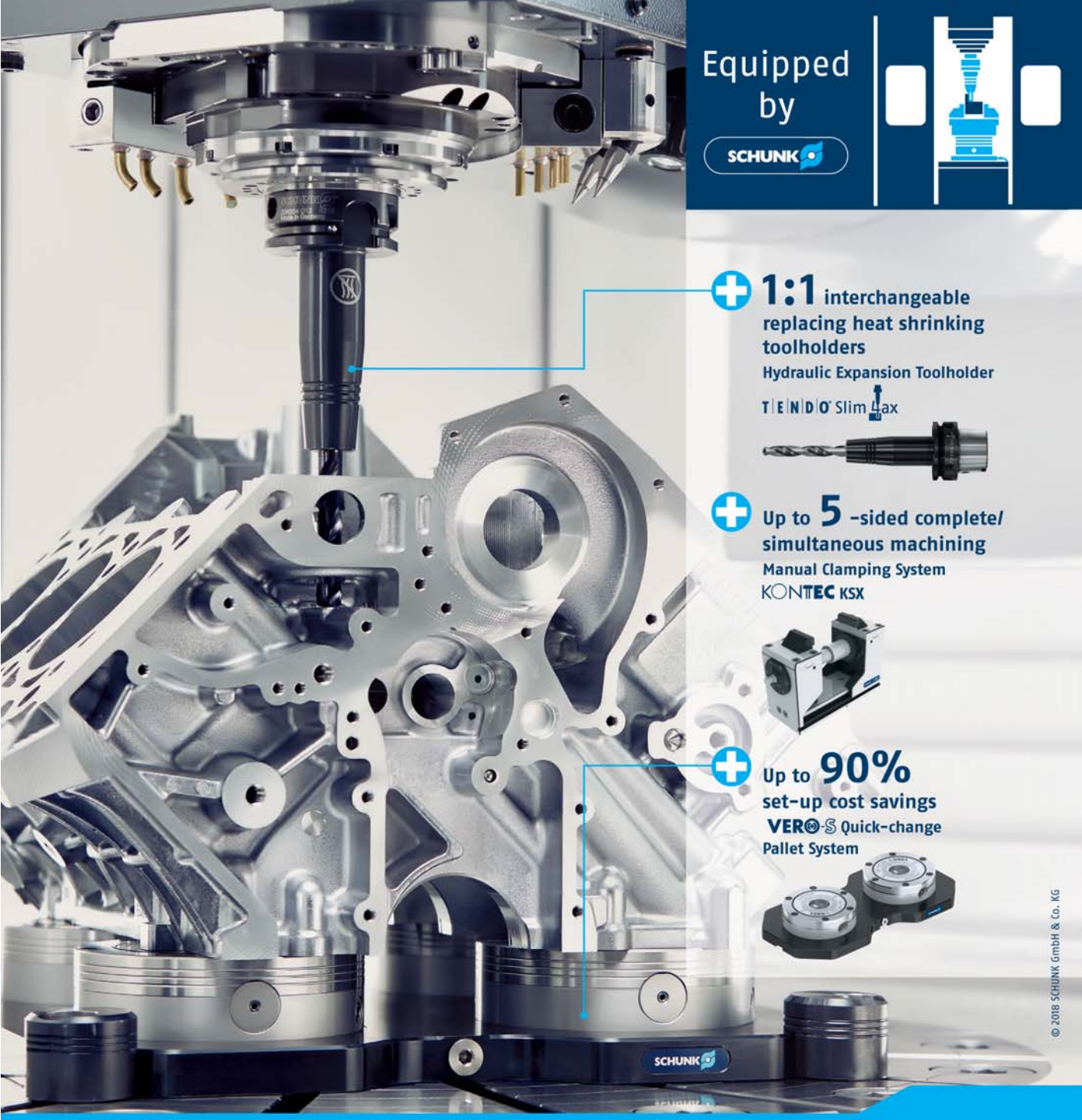
> "This CNC universal cylindrical grinding machine is designed for grinding in individual and series production and can be automated."

S31 - the versatile machine

The S31 is designed for grinding workpieces in individual, small batch and high volume production. It can be automated and, with its 16 different wheelhead variants, can be used for universal applications or for special tasks. The S31 boasts StuderGuide® guideways and the B-axis comes with fine adjustment.

The wheelhead can take up to three external grinding wheels or up to two internal grinding spindles in external/internal combination. For high-precision form grinding, the machine is equipped with a workhead with direct measuring system and the StuderForm HSM software program. "We are delighted that we can now offer exactly the right machine for our customers who machine long workpieces," says Martin Habegger, Project Manager at STUDER.

Source: STUDER



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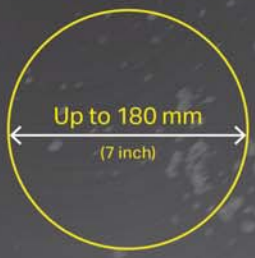
CoroCut® QD for Y-axis parting is designed with the insert pocket rotated 90 degrees, thereby shifting the resultant load to the strongest section of the blade. This provides more than six times higher blade stiffness, allowing you to increase your feed and use longer overhangs without losing stability.

A small, simple change, but with significant results.

Increase your feed rate – get more done in a day



Part larger than ever before

Less vibration – less noise

View Y-axis parting in action:
www.sandvik.coromant.com/corocutqd
For more details email us at coromantindia.communications@sandvik.com

SANDVIK Coromant