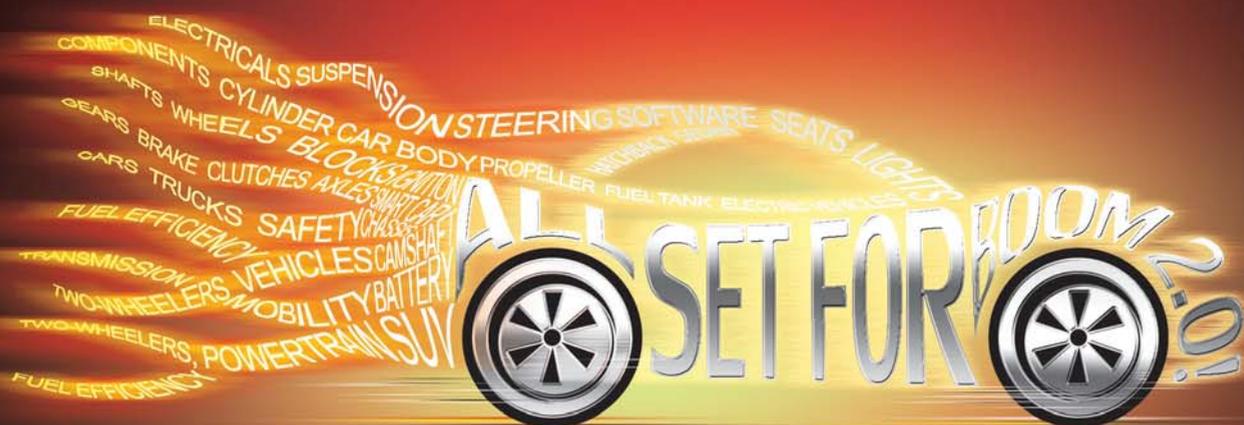


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The Pursuit of Excellence



“THE PURSUIT OF EXCELLENCE IN TODAY’S MANUFACTURING WORLD IS DRIVEN BY THE QUEST FOR SURVIVAL AND SUCCESS IN A HIGHLY COMPETITIVE GLOBAL MARKET, WHICH IS EXTREMELY VOLATILE.”

There is a beautiful quote by the great Greek philosopher Aristotle, which I have seen put up on the walls of at least 30 of the 70 odd plants that I have visited in the last 7-8 years. It is - “Excellence is not an act but a habit”. The word ‘habit’ is indeed important in this context. It implies at least two important inter-related aspects. One, a good practice should be replicable. And two, it should be repeated consistently till one finds a better way of doing it. And the vision and endeavour to find ‘a better way of doing things’ leads to excellence.

The pursuit of excellence in today’s manufacturing world is driven by the quest for survival and success in a highly competitive global market, which is extremely volatile. Factors like efficiency, sustainability, flexibility, innovativeness, productivity and quality are a given. That certainly looks like a very tall order but my personal experience has shown me that there are many plants in our country where pursuit of excellence is a way of life. The Machinist Manufacturing Excellence Summit is a knowledge based platform for showcasing these pursuits for the benefit of all so that we can learn from each other and keep changing things for better. Hope to see you there.

P.S. Send us a photograph of any excellence or improvement quote put up on the walls of your manufacturing plant. We will create a beautiful collage out of it and unveil it at the MES 2015 mentioning your name and your plant on it!

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NEWS

Bosch to invest Rs650 crore in India; calls it key location for its global innovation network

Bosch will invest Rs650 crore in 2015 in India, according to Peter Tyroller, the member of the Bosch board of management responsible for Asia Pacific. Tyroller gave the information to mark the visit of the Indian Prime Minister Narendra Modi and the German Federal Chancellor Angela Merkel to the facilities of Bosch in Bangalore on October 6, 2015. Peter Tyroller, Member of the Bosch board of management responsible for Asia Pacific, said: "India is a key location in our global innovation network. To



Two apprentices at Bosch in India presented the 'Make in India' symbols to Prime Minister Modi and German Chancellor Merkel.

further strengthen our presence in the country, we plan to invest Rs650 crore (over EUR 100 million) in 2015," Tyroller said. The company recently opened a new site for the manufacturing of automotive components in Bidadi. Over the medium and long-term, the company expects to see positive development in India. "The Indian government is systematically addressing key issues. We are confident that this will positively impact the country's development," said Dr. Steffen Berns, President, Bosch Group in India.

Prith Banerjee joins Schneider Electric as CTO

Schneider Electric has announced the appointment of Prith Banerjee as its new Chief Technology Officer. Prith will be in charge of accelerating Schneider Electric's R&D throughput and of driving the Innovation and R&D simplification programs under the Company Program "Schneider is On". He is also a member of the Schneider Electric Executive Committee.



Prith brings with him a wealth of experience in Technology R&D. His joining comes at a critical point of transition for the Indian and global industry, in which the business and societal landscape are being transformed by urbanisation, digitisation and industrialisation.

Schneider Electric invests heavily in R&D and innovation, thereby connecting its products and systems through the Internet of Things, making energy more distributed and connected.

India jumps 16 ranks in Global Competitiveness Index; reaches 55th place

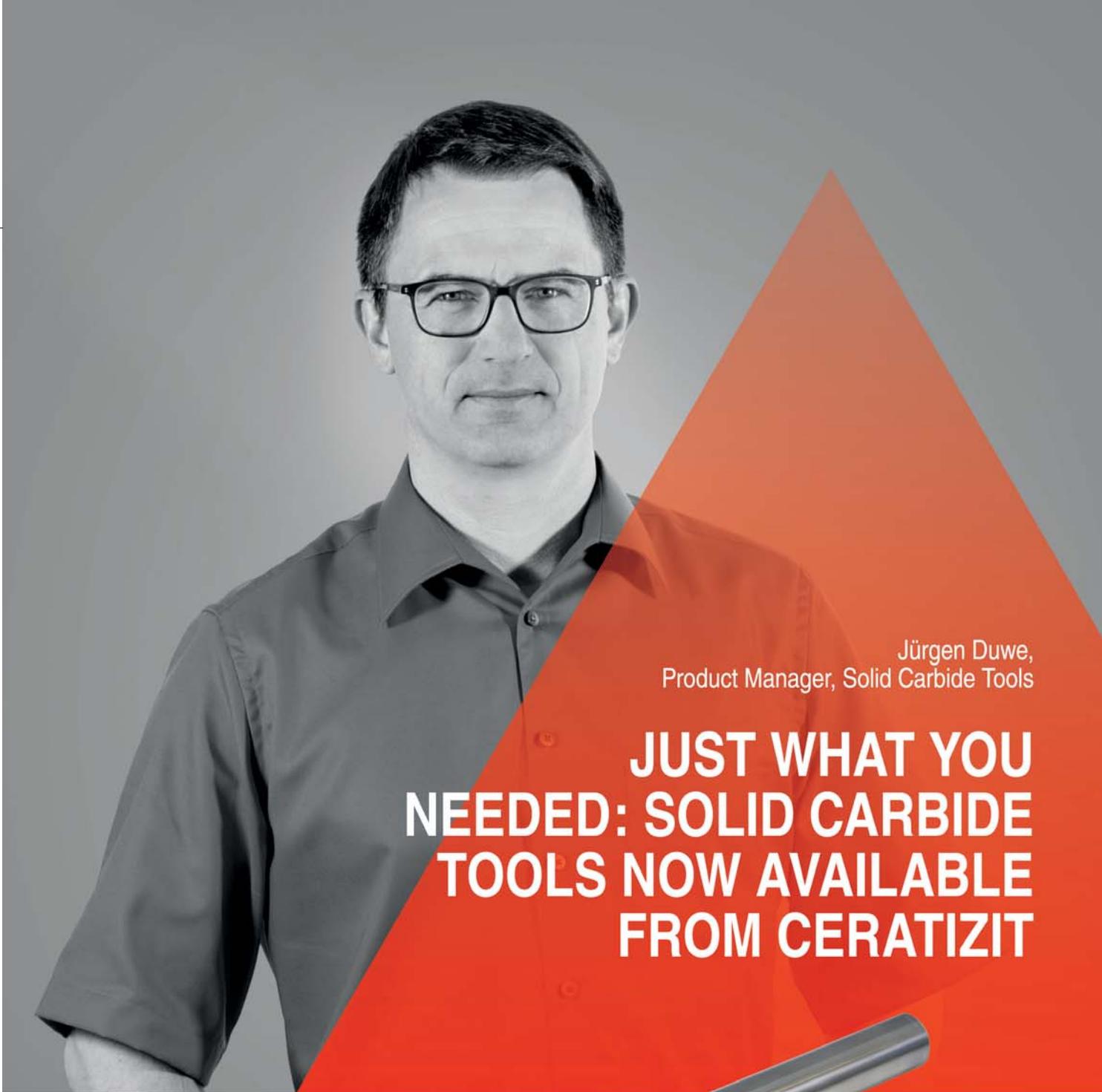
After five years of decline, India has jumped 16 ranks to reach 55th in the Global Competitiveness Index of the World Economic Forum's Global Competitiveness Report 2015-2016. This dramatic reversal is largely attributable to the momentum initiated by the election of Narendra Modi, whose pro-business, pro-growth, and anti-corruption stance has improved the business community's sentiment toward the government. The quality of India's institutions is judged more favourably (60th, up 10), although business leaders still consider corruption to be the biggest obstacle to doing business in the country. India's performance in the macroeconomic stability pillar has improved, although the situation remains worrisome (91st, up 10). Thanks to lower commodity prices, inflation eased to 6 percent in 2014, down from near double-digit levels the previous year.

India to buy newest models of Apache & Chinook Helicopters from Boeing

India's Ministry of Defence has finalised its order with Boeing for production, training and support of Apache and Chinook helicopters that will greatly enhance India's capabilities across a range of military and humanitarian missions. India will receive 22 AH-64E Apache attack helicopters and 15 CH-47F Chinook heavy-lift helicopters. Both are the newest models of those aircrafts. "This is a milestone in



Boeing's expanding commitment to India," said Pratyush Kumar, President, Boeing India. "This acquisition enhances the Indian Air Force's capabilities and offers us an opportunity to further accelerate 'Make in India.' Large sections of the Chinook fuselage are already made in India and discussions are ongoing with our Indian partners to make Apache parts."



Jürgen Duwe,
Product Manager, Solid Carbide Tools

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Startups are instruments for India's transformation, says Prime Minister Narendra Modi

Speaking at the Startup Event in San Jose (California) during his recent trip to the US, Prime Minister Narendra Modi has said that he sees Startups, technology and innovation as exciting and effective instruments for India's transformation, and for creating jobs for the youth. "When each of the five hundred odd towns (in India) produces ten Startups and each of our six hundred thousand villages produce six small business-



es, on a regular basis, we will create an enormous economic momentum and generate a huge number of jobs in our country," he remarked. PM pointed out that India's own ecosystem of startups is evolving rapidly. It is driven by the energy, enterprise and innovation of our youth. He added that India has a huge market with rapid growth and untapped opportunities in every sector.

India growth short of earlier estimates, but still robust: ADB Report

An economic slowdown in industrial countries, a weak monsoon, and stalled action on some key structural reforms will see India's growth for the current fiscal year fall short of earlier estimates, but still remain robust, says a new Asian Development Bank (ADB) report. ADB, in an update of its flagship annual economic publication, Asian Development Outlook 2015, now projects India's gross domestic (GDP) growth for the fiscal year ending March 2016 (FY2015) to come in at 7.4 percent, below its March estimate of 7.8 percent. For FY2016 growth is now seen at 7.8 percent below the earlier forecast of 8.2 percent. "In addition to slower than anticipated global growth, the revisions reflect expectations that reforms and improved investor confidence needed to bolster the economy could be months away and could still be set back by potential global market turmoil," said ADB Chief Economist Shang-Jin Wei. "On the upside, inflation is trending down, crude oil import prices have fallen sharply, and tax revenue and net foreign direct investment inflows are up, which augurs well for a bounce back in the economy."

IKEA woos its Polish suppliers to Make in India



Responding to the Prime Minister's Make in India call, IKEA organised its fourth 'Make More in India' seminar in Warsaw, Poland on September 8, in collaboration with Invest India, the country's official agency dedicated to investment promotion and facilitation for Government of India. IKEA

suppliers based in Poland and Central Europe met with IKEA and the officials to explore setting up large scale manufacturing units in India. The idea is that they will bring with them global expertise, knowledge and manufacturing techniques and generate new employment opportunities in India. This move by

IKEA is in line with its growth strategy of doubling sourcing volumes from India by 2020. The Indian Ambassador to Poland Ajay Bisaria said, "It is very exciting to take part in the Make More in India workshop where we present the opportunities India and IKEA together can offer Polish companies."

MAM & M&M start their strategic partnership

Mitsubishi Agricultural Machinery Co., Ltd (MAM) and Mahindra & Mahindra Ltd. (M&M), part of the US\$ 16.9 billion Mahindra Group headquartered in Mumbai, India today (October 1, 2015) completed the transaction announced on May 21, 2015 as per schedule. The two companies entered into a capital tie-up through a third-party allocation of new shares. As a result of the capital infusion, the new shareholding is as follows: MHI now owns 66.7 percent and M&M 33.3 percent. Start-

ing from October 1, the name of the company has been changed to 'Mitsubishi Mahindra Agricultural Machinery Co., Ltd.', and the new organisation has been announced. Please see below for more details. In the new organisation, Katsumi Tottori is appointed CEO and President (formerly President of MAM) and Sudhir Jaiswal is appointed as CFO and Senior Executive VP (formerly VP - Commercial and Business Planning, International Operations, Automotive Division of Mahindra & Mahindra).

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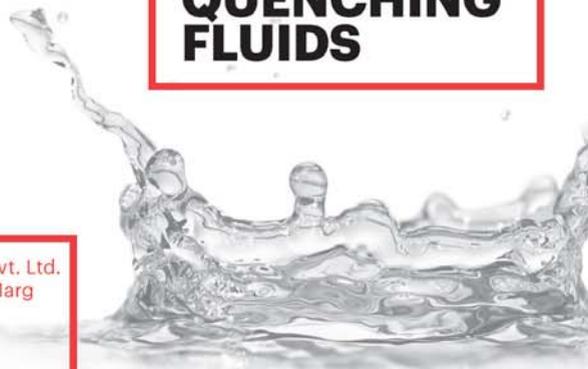


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Mark your diary

A list of key events happening between November 2015 to December 2016, both nationally and internationally.

FABTECH 2015

November 9-12, 2015, Chicago, USA
www.fabtechexpo.com

Grindex International 2016

March 3-5, 2016, Mumbai
www.grindexpo.in

EXCON 2015

November 25-29, 2015, Bangalore
www.excon.in

MODEX 2016

April 4-7, 2016, Atlanta (USA)
<http://www.modexshow.com/>

Global SME Business Summit 2014

December 07-08, 2015, New Delhi
<http://ciisme.in/>

CeMAT 2016

May 31-June 3, 2016, Hannover (Germany)
<http://www.cemat.de/home>

IMTEX FORMING 2016 & Tooltech 2016

January 21-26, 2016, Bengaluru (BIEC)
www.imtex.in

IMTS 2016

September 12 - 17, 2016, Chicago (US)
www.imts.com

Auto Expo 2016 - Components

February 4-7, 2016, New Delhi
<http://www.autoexpo.in/components-show/index.aspx>

MINExpo International

September 26-28, 2016, Las Vegas (USA)
<http://www.minexpo.com/>

Auto Expo 2016 - The Motor Show

February 5-9, 2016, Greater Noida
<http://autoexpo-themotorshow.in/>

India International Textile Machinery Exhibition 2016

December 3-8, 2016, Mumbai
<http://itme2016.india-itme.com/>



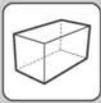


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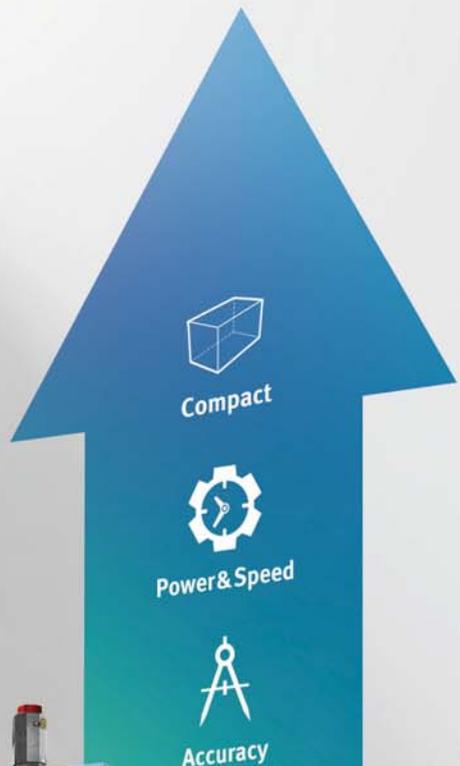
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A new era for machine tool industry



The maiden show of the Ahmedabad Machine Tool Expo organised by the Indian Machine Tool Manufacturers' Association (IMTMA) received an overwhelming response from the industry.

The first ever Ahmedabad Machine Tool Expo at Mahatma Mandir, Gandhinagar from September 24-27, 2015, organised by the Indian Machine Tool Manufacturers' Association concluded on a positive note. The industry's overwhelming response in making the regional machine tool show that witnessed a footfall of about 9000 visitors has heightened expectations. The expo displayed state-of-the-art technologies primarily focusing on manufacturing solutions from the industries located in the western region. Fervent business activities transpired at the expo post-inauguration. Trade leads were generated amidst a lot of learning and information sharing in a business environment and thus

culminating into a heightened euphoria for the industry. The show had the presence of industry delegations representing various sectors such as textile machinery, pharmaceutical machinery, petrochemical engineering, agriculture implements, auto engineering, mining equipments, and many more.

Elaborating on the importance of the show from a regional perspective, IMTMA President L. Krishnan said, "The show gave an opportunity for visitors to meet the small and medium enterprises who are the original equipment manufacturers and their sub suppliers. The expo opened avenues to penetrate niche industry sectors as well as the untapped regional market." Concurring with IMTMA President's opinion, V. Anbu, Director General, IMTMA said, "There is a sizeable demand emerging in west India as a result of the foreseen growth in the manufacturing industry. The current expo has shaped up to be an ideal platform to initiate business in the region."

Exhibitors were enthralled by the responses solicited from their customers. Many of them felt that participating in such a show was vital not just for sales but also for services. The show enabled them to meet the different regional customers and thereby better understand the requirements of the regional markets. The understanding generated at the show will serve as the basis for solid industrial development in India and simultaneously strengthen the companies' business while expanding their network to a larger scale.

Visitors also spoke in glowing terms about the first edition of the expo. They were quite happy to see and interact with the machine tool manufacturers. Many of them felt that the exhibitors had impressive and innovative displays and they were able to come across good innovations at various stalls. The expo was ideal to locate new technologies and quality suppliers. Exhibitors expressed that visitors were ready for investing on high-end technology which is a positive indicator. The first edition of the Expo has been a runaway success. The strong presence of visitors from the region made it a truly grand event. The expectations will now grow higher from all sides since the responses have been positive. IMTMA will organise many more regional shows and with the support of the industry expects to build on the success achieved in Ahmedabad in the days to come. 



“The show gave an opportunity for visitors to meet the small and medium enterprises who are the original equipment manufacturers and their sub suppliers. The expo opened avenues to penetrate niche industry sectors as well as the untapped regional market.”

L. Krishnan, President, IMTMA



“There is a sizeable demand emerging in west India as a result of the foreseen growth in the manufacturing industry. The current expo has shaped up to be an ideal platform to initiate business in the region.”

V. Anbu, Director General, IMTMA

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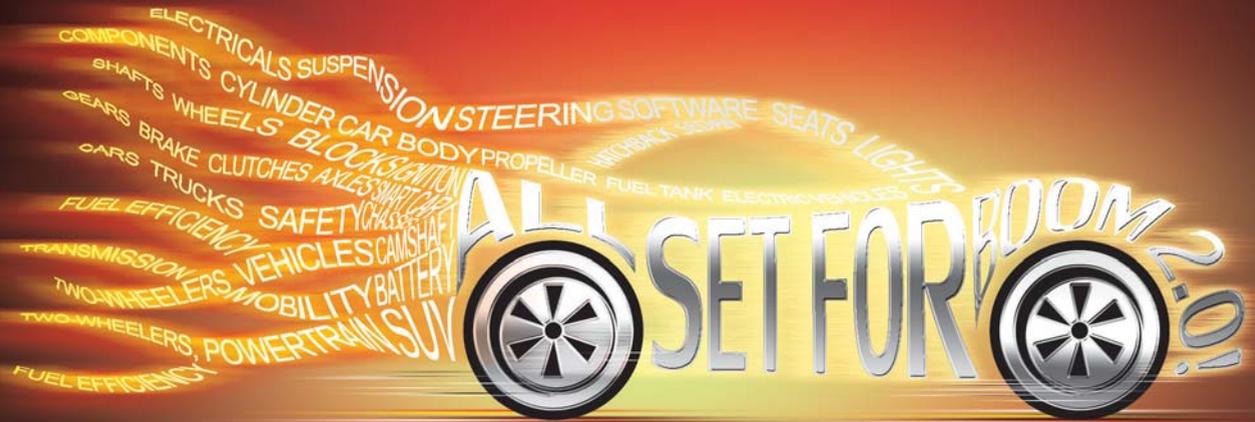
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Ready to RISE AGAIN!

The Indian Automotive industry is happily staring at a possible turnaround. Here's a quick overview of what's happening!

By Niranjan Mudholkar

First things first! The sales figures for the last month (September 2015) have indeed been very heartening. In fact, it seems like the proverbial light at the end of the tunnel. The market giant Maruti Suzuki India grew 3.7 percent in September registering a growth of 11.7 percent for the period April-September 2015-16 over corresponding period of previous year.

Hyundai Motor India has grown by 21.3 percent with its highest-ever monthly domestic sales of 42,505 units in a single month in its last 17 years while also registering 14.2 percent growth in the first-half of this fiscal year!

Ford India's September domestic wholesales stood at 8,274 vehicles against 6,786 units in the same month last year, while exports were 14,154 vehicles compared to 6,956 units in September 2014! Toyota Kirloskar Motor registered an 11 percent overall growth from January to September 2015 as compared to the corresponding period last year.

Honda Cars India Ltd. registered a growth of 23 percent with monthly domestic sales of 18,509 units in September 2015 against 15,015 units in the corresponding month last year. The company registered a cumulative domestic sales of 97,217 units in first half of FY 15-16 (April -September 2015) against 88,200 units for the corresponding period last year marking a growth of 10 percent. Of course, we have taken only a few examples but these are strong indicators of what is happening overall in the industry.

Most key players are either presently launching new products or have lined them up for the big festivals in the next three months. The confidence levels and growth plans are

*Nine factors that will help the industry RISE AGAIN!

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- I**nnovative products that address practical needs
- S**afety factors that provide assurance
- E**nergy efficiency that beats rising fuel prices
- A**ffordability which is married with luxury
- G**reat designs that demand second looks
- A**ccessories and Apps that add value to the journey
- I**nfotainment systems that keep pace with technology
- N**ovelty aspects that freshen up the market.

surely quite high in the industry at the moment. Now, it is important to keep the momentum going and keep delivering products that live up to the RISE AGAIN* formula. The Indian automotive market holds a huge promise and immense potential. Now is the time to start realising it. As far as the industry is concerned, investments and innovations, compliance and communication, will hold the key in this journey of huge scale and great ambitions. Obviously, the Government will have to whole-heartedly support the industry's rise with infrastructure development and policy reforms in a timely and feasible manner. State governments must engage in healthy competition to promote this industry; after all automotive has a cascading effect on a major part of any economy.

And as far as the immediate future goes, the industry has every reason to cheer up and look forward to a better market. And why not, with the recent (and healthy) cut in the repo rate coupled with the massive festive season just around the corner, things can only and definitely get better. 

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Quest for comprehensive excellence

The Machinist caught up with **Krishnakumar Srinivasan**, President Asia-Pacific, Vehicle Group, Eaton, for a quick chat during a recent visit to the Group's Ranjangaon Plant

By **Niranjan Mudholkar**

In the Asia Pacific region, Eaton's Vehicle Group has three plants in India, four in China and one plant each in Korea and Australia. It also runs one JV plant with the Fast Group in China and four JV plants with Nittan in APAC. With this well spread out and strategically located foot print, the Group endeavours to bring in products that are most suitable for the local market.

Amongst all of the Group's manufacturing plants in APAC, only two plants have bagged what is called the 'Premier Status' in Eaton and the Ranjangaon plant is one of them. Krishnakumar Srinivasan, President Asia-Pacific, Vehicle Group, Eaton, who is extremely proud of this plant, explains that achieving this status is a Herculean task within Eaton. "Actually, we have a very structured and rigorous methodology of assessing our plant performance called the Eaton Business System (EBS). The EBS focuses on key areas like planning, growth, operational excellence, functional excellence, assessment and learning," says KK, as



Besides growing capacity ahead of the market, we have also focussed on localisation. This has helped us keep the manufacturing cost low.

he is fondly called. The three plants in India including the Ranjangaon plant contribute about 15 percent to the overall APAC Vehicle Group business. KK notes that the Group has grown quite substantially over the last three years. "Business is growing and we see a lot of opportunities now for bringing new products," he adds.

The strategy

Managing cost at the shopfloor level has been one of the key reasons for the Group's growth in a very competitive market. "Besides growing capacity ahead of the market, we have also focussed on localisation. This has helped us keep the manufacturing cost low. Secondly, I am able to leverage this low cost at the global level. For example, if a product is getting manufactured at 30x cost in another Eaton plant and the Ranjangaon plant is manufacturing the same product at 25x cost then it puts us in an advantageous situation. And we have been able to achieve this cost competitiveness in a consistent manner."

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KK shares that from a shopfloor level point of view, the Ranjangaon plant has been able to achieve high levels of operational efficiencies by doing what he describes as a 'lot of classical activities'. These 'classical activities' activities involve the global manufacturing best practices like lean, kaizen, Gemba walks and so on implemented by the Ranjangaon plant while taking into consideration its specific requirements. For example, the Plant ensures that it captures all product requirements in VSM (Value Stream Mapping). He adds that the whole process is driven by three aspects: self sufficiency & sustainability, localisation and making at the right cost.

According to KK, the Ranjangaon plant – like any other Group plant – also encourages employees to be part of the continuous improvement process. “For example, we have something called as the Rapid improvement events (RIE) wherein the involved team is empowered to implement quick ideas to improve the current levels of output (in terms of



Company: **Eaton**

Plant Head: **Balachandran Varadhrajan**

Location: **Ranjangaon, Maharashtra, India**

Key products manufactured: At the Ranjangaon plant, Eaton manufactures two main categories of products; commercial vehicle transmissions and components thereof - gears and shafts. The target market for Eaton's Vehicle Group offerings are Heavy and Medium duty commercial vehicles. There are different product series and models under each category. Currently, at the Ranjangaon plant, Eaton manufactures 6 and 9 speed transmissions (Manual, AMT and Hybrid versions) for medium duty and heavy duty markets.

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productivity and quality). In fact, the decisions are made at the shopfloor level then and there. At the next level, we have cross functional teams that identify improvement areas and work accordingly. Big investment related decisions are obviously at the higher levels but the management is extremely open and cooperative to any idea that will lead to improvements,” he explains. These initiatives are certainly working since the plant has seen dramatic improvements across many areas. KK shares the example of a six speed assembly line. “Earlier, we were producing about 25 transmissions on one of these six speed assembly lines. With improvements, we are now producing 70 transmissions on the same line. And this has been achieved in the same space and the same equipment with lower manpower. Like that we have multiple lines where we have brought huge improvements,” he shares.

Safety matters

Safety is a big priority at the Ranjangaon plant. “In fact at all Eaton plants,” says KK. “None of the employees should come to work with a feeling that he or she could get hurt. Safety is of utmost importance to us. We want to ensure that people should like to come to work in our plant or office. We have constantly strengthened our commitment to employee safety and towards building a Zero Incident Safety Culture.” At all its manufacturing facilities worldwide, Eaton has deployed its Life Saving Rules and best practices such as; Safety Gemba walks, safety stand-downs, safety improvement opportunities reporting, safety training, wellness council and community support. The Ranjangaon plant is ISO-TS16949, OHSAS 18001 and ISO 14001 certified.

In sync with times

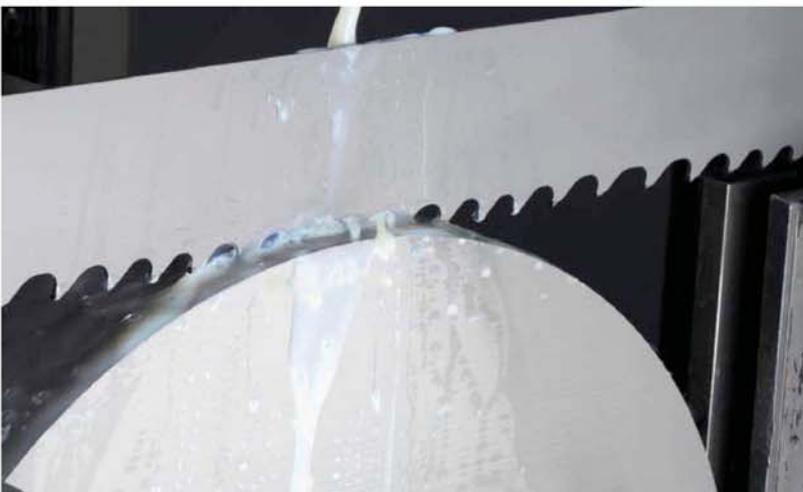
The Ranjangaon plant has invested significantly in latest technologies to help achieve world class levels in both quality and productivity. “Eaton has been utilising various technological tools for enhancing the accuracy and efficiency of its operations, like Oracle manufacturing, portable barcode systems, supplier VIS (visualisation) and ASN for material management, tools for engineering and manufacturing change management, product quality management and data management through web shared-points,” KK shares. All this provides the plant a robust inventory, production and quality management tool. In-process quality and traceability is further strengthened with in-house gear lab and metallurgy lab. “The plant offers an efficient facility which utilises interlinked modern systems such as high-end emergency response system, including fire detection and suppression systems, gas detection and containment systems that comply with insurance requirements for the facility characteristics and risk level,” he adds.

Green is the colour

Eaton places a high priority on matters related to the environment. “We not only strive to manufacture green products but also invest in new technologies and processes to upgrade our manufacturing plants and to make them cleaner, safer and more energy efficient. Every year we set goals for the reduction of water consumption, greenhouse gas emissions, waste generation and utilising energy management systems. The environmental well-being of our communities is addressed by following the requirements of ISO14001 and MESH,” KK informs. For example, the packaging improvements in last two years have helped in significantly reducing the wood consumption. Implementation of LED lights in the shopfloor and at heat treatment cycle modifications has led to remarkable energy savings thereby helping in reducing the Green House Gas emissions. The employees have planted more than 100 trees in Ranjangaon MIDC supporting Eaton's GO GREEN program. The employees have created a Nature's Club in the facility; which is a benchmark within the region. 



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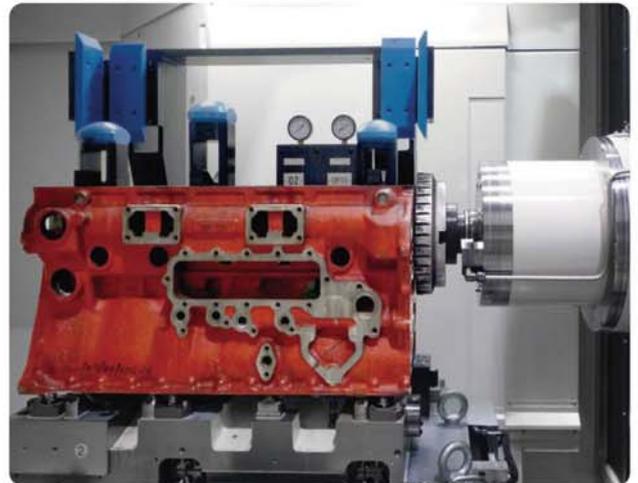
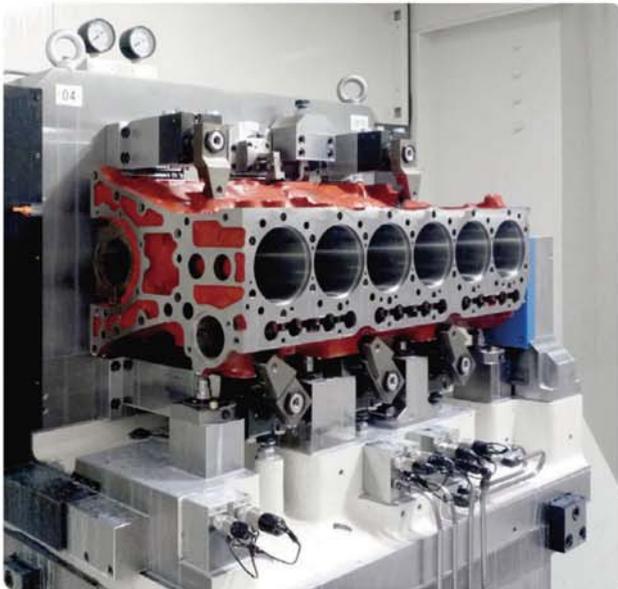
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Actual Fixture With component



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Why 'Green' matters!

While Hyundai Motor India Limited has increased its production capacity, the utility costs have not increased proportionately nor has its consumption of resources gone up. **Stephen Sudhakar**, Vice President – Human Resources and General Supporting, explains how ecofriendly manufacturing practices have made this possible.

By Niranjana Mudholkar

Q How does the environmental aspect impact HMI's operational and overall business efficiency?

Hyundai Motor India Limited follows ecofriendly manufacturing practices where energy, water efficiency and proper waste management form key components of sustainability. Critical utilities like electricity, fuel and water, crucial to our manufacturing process is closely monitored as, if left un-



Stephen Sudhakar

"We have engineered our processes to ensure that nothing goes out of our plant and hence have achieved a zero discharge status."

checked could push up costs. This strict discipline has ensured that while we have increased our production capacity, our utility costs have not increased proportionately nor has our consumption of resources gone up. We have engineered our



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GO Green Project

processes to ensure that nothing goes out of our plant and hence have achieved a zero discharge status.

Has HMI also taken efforts to regularly measure performance across key measurable areas like Energy Consumption, CO2 Emissions, Water Consumption, Waste Generation and VOC Emissions?

Yes, HMIL has taken various initiatives to conserve resources and has implemented numerous sustainable measures towards eco-friendly manufacturing practices.

Energy consumption: Energy conservation activities are closely monitored by way of regular inspection and audits by a team of dedicated energy management experts. Also, Specific Energy Consumption (SEC) at different points is monitored and controlled regularly.

CO2 Emission: CO2 Emission generated during the manufacturing process is negligible. We monitor Ambient Air quality month on month as per National Ambient Air Quality Standards. We are happy to state that the air quality at our plant is well within the standards prescribed by the Pollution Control Board.

Water Recycling and Saving: HMIL has taken all initiatives to minimise water consumption drastically by providing PRVs (Pressure Reduction Valve) & VFD (Variable Frequency Drive) systems in shopfloors. In addition to that, we have a full-fledged facility to recycle waste water. The treated water is reused in the manufacturing process thereby reducing consumption of fresh water. Importantly, the sewage water is treated and reused for landscaping. Apart from this, we collect rain water in four big rain water harvesting ponds inside

“We have entered into an agreement with ITC industries where all waste paper is sent to them for recycling. They give us virgin A4 sheets for office use, in lieu. Last year alone we received 5653 reams of A4 sheets, which translate into saving 4913 trees and about 26,498 litres of water!”

the factory with a total capacity of 2.75 lakh kilo litres. This water is also used for various in plant processes, thereby reducing our dependence on government sources.

Waste Management: Waste generated during various in plant processes are collected individually and stored in specific safe houses. From time to time such waste material is disposed to recyclers or released in secured landfill sites. Paint sludge is sent to cement Industries for co-processing.

Food Waste Management: Apart from this, HMI has taken initiatives to convert food waste in to manure by providing Organic Waste Convertor System and also recycles paper.

Paper Recycling – Saving precious trees and water: We have entered into an agreement with ITC industries where all waste paper is sent to them for recycling. They give us virgin

A4 sheets for office use, in lieu. Last year alone we received 5653 reams of A4 sheets, which translate into saving 4913 trees and about 26,498 litres of water!

VOC Emissions: We have installed a state of the art Regenerative Thermal Oxidizer System (RTO) in Paint Shop oven stacks, as an innovative technology by which VOC emission is drastically reduced from 120 PPM to 18 PPM.

All these processes are monitored by energy and sustainability experts and reviewed from time to time.

Has a proper scientific approach been taken in planting the correct variety of trees in the campus?

Yes, of course! HMI has developed a 56 acre green belt inside the factory premises with lawns, flowering shrubs & trees



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The paint shop which is 60 percent automated, is fitted with the latest equipment, and uses environment friendly water based process and robotic paint application.

friendly water based process and robotic paint application for superior finish and reduced consumption. To treat the fumes and maintain air quality, we have installed a state-of-the-art Regenerative Thermal Oxidizer System (RTO) in the shop that reduces harmful VOC (volatile organic compounds) emission from paint oven exhaust to release clean fumes. The system also recycles thermal heat from the exhaust and pre heats fresh air used for paint ovens, thereby cutting down propane consumption, drastically. The paint sludge that is generated at the end of the painting process is collected separately and is being disposed to cement industries for co-processing.

(22,000 trees and 55,000 saplings). The trees are strategically planted for Shelter, for aesthetic appeal and also food. We have fruit trees like coconut, lemon, mango, banana and pomegranate and sometimes we even grow seasonal vegetables.

Apart from this, HMIF our CSR arm, under its 'Go Green project' has planted three lakh teak wood saplings in the surrounding villages over the last few years. HMIF will pay the farmers for maintaining these trees for the next 10 years. Such plants which are planted on the periphery of their land, have helped farmers rejuvenate their arid land and aided intercropping. On completion of 10 years, when the tree matures, the farmer can sell the wood and get some extra income.

Q Have any targets been set with regards to the above performance?

Yes. All Environmental Projects are linked to ISO14001 system and status of existing and new projects are reviewed by the management from time to time. Besides, Hyundai Motor India has a dedicated set of energy experts who regularly conduct audits at various shopfloors and office areas. The findings are discussed and corrective measures/ improvisation are affected. This is an ongoing process.

Q How are you 'Greening' the paint shop?

We have one of the most modern and sophisticated flexible manufacturing plant in Chennai making cars for the domestic and export market. Every shopfloor is highly automated with the latest technology. The paint shop, which is 60 percent automated, is fitted with the latest equipment, and uses environment

Q How does HMI's effort towards going green resonate with Hyundai Motors' overall global manufacturing practices? Is there any exchange of best practices or ideas at the global level with sister plants?

Hyundai Motor Group follows the same manufacturing processes all over the world and has the best systems in terms of efficient energy usage and monitoring. Best practices of overseas plants are benchmarked and adopted in our plant and vice versa. Environment initiatives of our plant are continuously monitored by our parent company and rated. HMI has one of the most environmentally sustainable manufacturing processes. We have regular monitoring of various processes including inline systems and keep changing our processes to meet new benchmarks.

"Hyundai Motor Group follows the same manufacturing processes all over the world and has the best systems in terms of efficient energy usage and monitoring. Best practices of overseas plants are benchmarked and adopted in our plant and vice versa."

Q What role can legislation play in furthering the cause of 'Green Manufacturing'? How important will 'environment management' be for 'Make in India'?

There are policies already in place to ensure and further the cause of Green Manufacturing. At HMIL, we adhere to all statutory compliance with in house waste water treatment facilities, air & solid waste management systems etc. HMIL has developed an online monitoring system with real time connectivity to the regulating authorities for real time monitoring and compliance. We believe that well regulated and consistent policies coupled with good infrastructure and easy clearances will go a long way towards making India an environmentally compliant manufacturing destination. 



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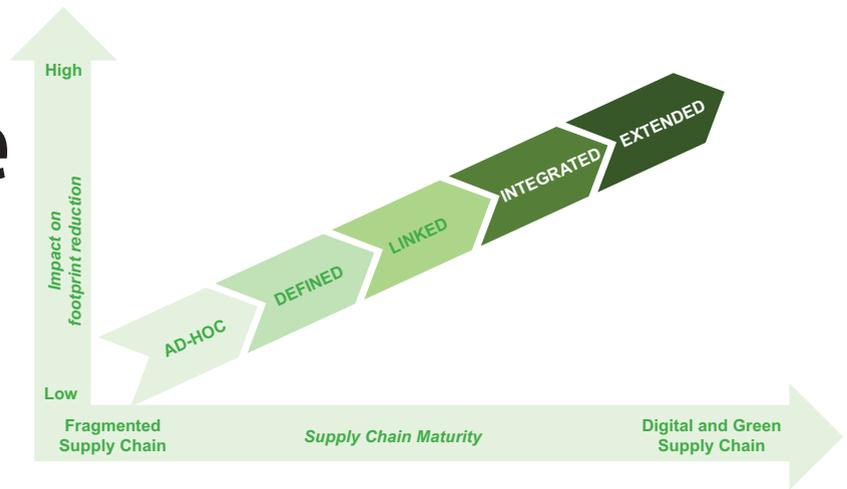
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Digital Future

Supply chains have been more closely studied in the last few years keeping sustainability in mind.

By **Badrinath Setlur**



Globalisation over the last two decades has led to businesses grappling with more complex supply chains. Currently, the products flowing across the supply chain have assumed higher speed, volume and variety than a decade ago. With this significant and massive change, supply chains have come to wield a wider impact on the ecological system as a whole. The movement, storage and processing of resources leave a long-lasting environmental impression. Hence, supply chains have been more closely studied in the last few years keeping sustainability in mind.

In an effort to make supply chains more sustainable, the industry has achieved significant cost savings in the areas of transportation and logistics, operation and facilities, and energy consumption. This rigor of cost reduction and productivity enhancement has not only improved the bottom-line, but also facilitated the meeting of compliance requirements. With stringent enforcement of regulations across the world on sustainability reporting and the demand for tangible results, the industry is making conscious efforts to reduce its environmental impact.

The entire concept of environmental sustainability involves maintaining a balance between nature's capacity to regenerate and the effect of industrialisation on earth. The effects are referred to as 'footprint' and classified as carbon and ecological footprints. Carbon footprint pertains to the impact of greenhouse gases emitted by industry operations, while ecological footprint is based on the quantum of resources consumed by industrial operations.

Green supply chains involve reducing carbon and ecological footprints in a structured and consistent manner. The Green Value Chain for the manufacturing industry prioritises maximising good outputs (products and savings) while minimising bad inputs and outputs (air, water, steam, nitrogen, electricity, fuels,

and wastes, packing materials, emissions—solid, liquid, and fuel) to possible extent. There is a delicate balance between ecologically and economically sustainable supply chains—for example, focusing on reducing consumption (energy, fuels and resources) while optimising emissions and wastes, considering new operational and distribution demands. A mature supply chain is a prerequisite for assessing the 'green' dimension to develop an effective game-plan.

The adoption of emerging digital technologies such as social media, big data analytics, mobility, cloud computing, and sensors is helping transform businesses. The future of supply chains is digitally enabled for sure, and technology-driven supply chains hold tremendous potential of providing competitive advantage over traditional ones. The combination of digitisation and environmentally conscious businesses provides competitive and resilient green supply chains. The need is for an effective approach to bring the 'digital' and 'green' dimensions while assessing supply chains. One approach is to leverage the supply chain maturity assessment model as depicted in the opening illustration.

The essential criteria that will differentiate the maturity of green supply chains of the future will be contingent on integration of digital technologies in reducing the carbon and ecological footprints. The following table can help companies assess the maturity of green supply chains and help identify gaps to be plugged for enhanced maturity.

The increasing complexity of supply chains, with the dual agenda of maximising good outputs while minimising bad inputs and outputs, are shepherding businesses to invest in green supply chains. A starting point is the maturity assessment of supply chains and developing an implementation roadmap leveraging new technologies. 

The author is Assistant Vice President—Consulting, Manufacturing, Logistics, Energy and Utilities, Cognizant



Badrinath Setlur

"The future of supply chains is digitally enabled for sure, and technology-driven supply chains hold tremendous potential of providing competitive advantage over traditional ones."

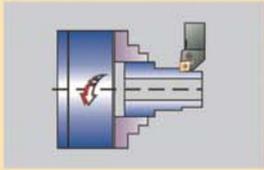
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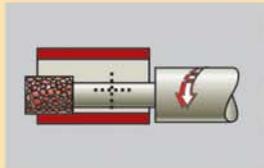


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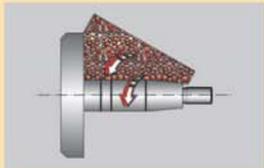


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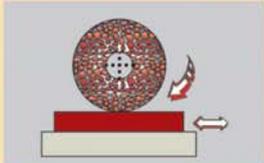


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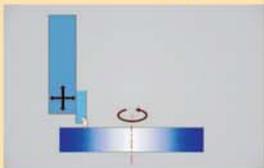


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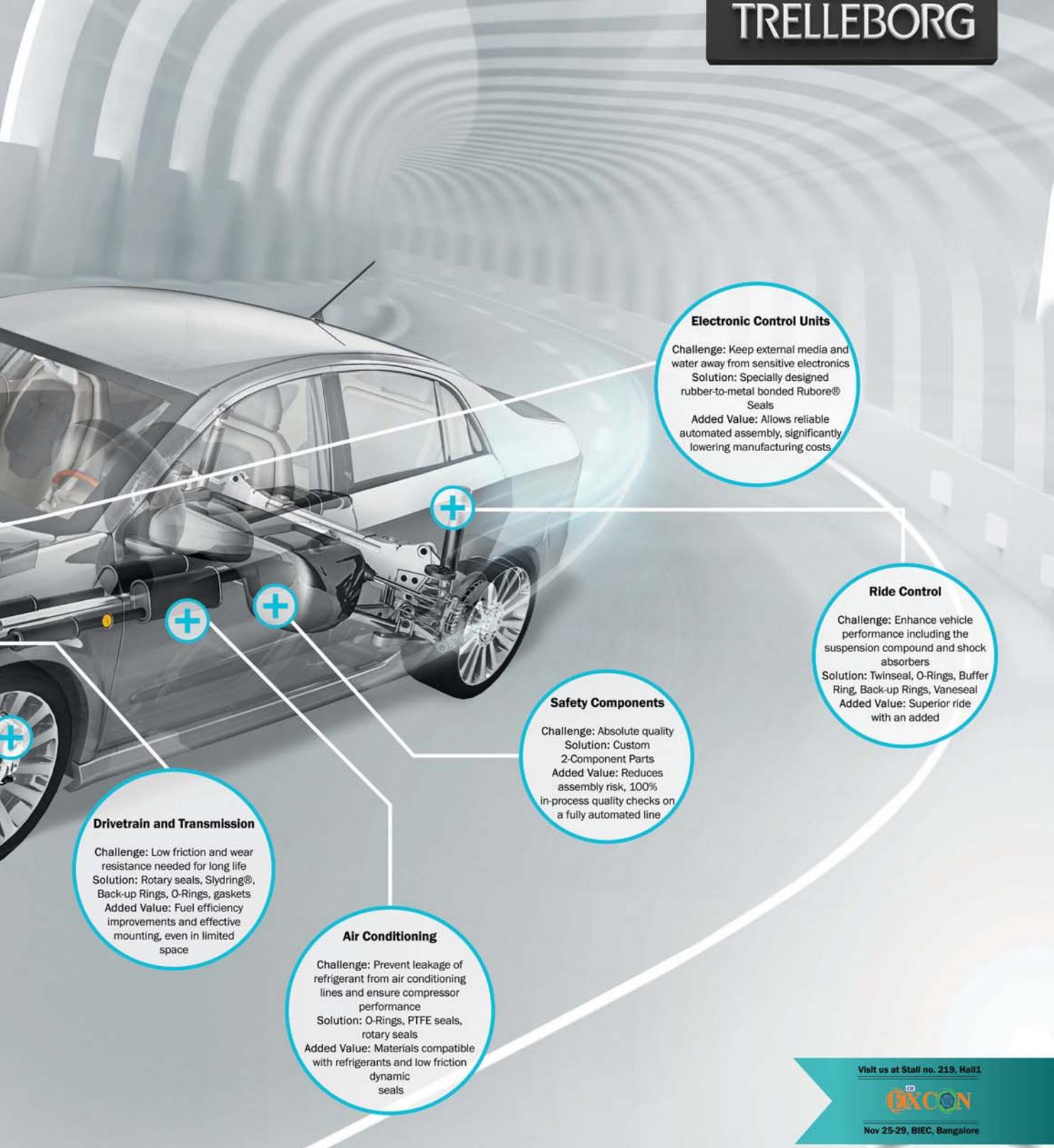
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Multitasking on the shopfloor!

A leading automobile manufacturer used EOT cranes to integrate the material handling requirement in the press shop to efficiently handle different activities, while ensuring optimum space utilisation.

Bajaj Group is among the top 10 business houses in India. Founded in 1926, Bajaj Auto Ltd. is a flagship company of the Bajaj Group and the fourth largest two and three wheeler manufacturer in the world. It is one of the most renowned brands for two and three wheelers across India, Latin America, Africa and the Middle East, with manufacturing plants at Pune, Aurangabad and Pantnagar. Bajaj Auto has plans to venture into the four wheeler market and aims to be a leading player. The R&D facility and the manufacturing unit for its new four wheeler division are located at Waluj in Aurangabad.

The handling challenges

Bajaj Auto approached ElectroMech Material Handling Systems Pvt. Ltd. to design a handling system for the press shop of its new four wheeler division. In this plant, hydraulic presses ranging from 400T to 1200T are arranged in parallel rows, which require large and heavy dies to be loaded and unloaded

very frequently during the shift. Additionally, the bay perpendicular to the rows of presses is used for maintenance and storage of dies as well as for the finishing of moulded parts. This bay has a gantry girder support only on one side, while the other side faces the open press shop bay.

The challenge was to design a handling solution that allowed optimum space utilisation by covering the maximum possible shopfloor area of both bays. Another critical requirement of the solution to be offered was one that is common across almost every heavy duty press shop – die tilting. This

Equipment used	
Cranes 1&2	Crane 3
SWL - 35/10MT (DGEOT)	SWL - 20/10MT (DGEOT)
Span - 21.3m	Span – 8.8 m
Height of lift - 13m above ground + 5m below ground	Height of lift - 7m
Application - Die loading & unloading on press machines	Application - Die handling & maintenance

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is required for ease of loading/unloading and maintenance of dies. Bajaj Auto expected ElectroMech's cranes to be sufficiently equipped to address this requirement as well.

For Bajaj Auto's new four wheeler manufacturing plant in Waluj, ElectroMech's track record in providing competent solutions across the automotive industry made it the obvious choice for Bajaj's press shop cranes. ElectroMech cranes ensure safe and efficient handling of dies, ensuring quicker die changes. Careful planning of the three cranes, along with a unique die tilting arrangement, enable the press shop to meet the desired production volumes with ease.

The solutions

After carefully studying the material flow in the press shop and assessing future requirements, Team ElectroMech recommended the use of three cranes. Two of these would be Double

"The challenge was to design a handling solution that allowed optimum space utilisation by covering the maximum possible shopfloor area of both bays. Another critical requirement of the solution to be offered was one that is common across almost every heavy duty press shop – die tilting."



How Bajaj Auto benefitted

- Safe handling of precious dies.
- Almost every cubic metre of space covered ensuring optimum space utilisation.
- Unique die tilting arrangement allows easy manipulation of dies.
- Easy loading and unloading means faster die changing which reduces idling of presses.
- Higher press shop productivity.
- Uninterrupted production due to fail-safe design of cranes.

Challenges & Solutions	
Challenges	Solutions
<ul style="list-style-type: none"> • Continuous loading & unloading of dies on presses. • Die tilting mechanism was essential. • Cranes were to be installed in perpendicular bays. • Maximum space utilisation was to be ensured. 	<ul style="list-style-type: none"> • SWL - 20/10MT (DGEOT) • Span – 8.8 m • Height of lift - 7m • Application - Die handling & maintenance

Girder EOT cranes and one would be a Double Girder Semi-Gantry crane. They were planned and designed to cover the entire space in two perpendicularly adjacent bays of the press shop.

Each of the bays where the press machines operate has a 35/10MT, 21.3m span, 18m (13 m above ground + 5 m below ground) height of lift, Double Girder crane installed. These cranes are primarily used for loading and unloading of dies and are operated continuously and rigorously for die handling as well as tilting. The 35MT main hoist is used to handle the die whereas the 10MT auxiliary hoist assists in tilting the die through 1800.

These cranes will also be used for press maintenance and hence have an additional 5m height of lift below ground to access the foundation of the presses. The cranes in these two bays have an overlapping long traverse path and there was a danger of them colliding with each other during operations. This hazard was completely eliminated by fitting anti-collision devices for both the cranes. Thus, a high level of inherent safety is ensured. The solution designed for die tilting and maintenance operation in the bay perpendicular to the main press shop is a 20/10MT, 8.8m span Semi-gantry crane. This crane is used for storage and maintenance of dies and for handling of finished products. To ensure maximum space utilisation and coverage of the shop floor, one end of the crane is mounted on the existing overhead gantry girder and the legs on the other side run on floor mounted rails.

Source: ElectroMech

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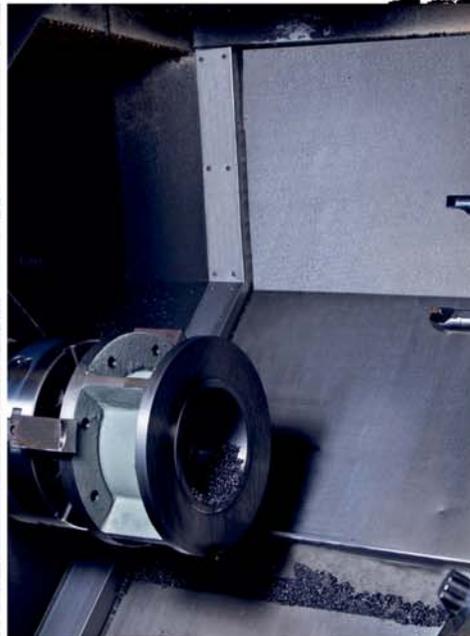
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Hero MotoCorp Ltd. starts manufacturing facility in Colombia



Hero MotoCorp Ltd. has started operations at its first global manufacturing facility at Villa Rica in Colombia. Juan Manuel Santos, President of Colombia and Pawan Munjal, CMD and CEO of Hero MotoCorp Ltd. inaugurated the plant on September 9, 2015. Completed in a little over nine months since construction began, the Colombia plant is Hero's fifth manufacturing facility in addition to four assembly plants in India. This Plant will act as a hub for selling to the Andean countries. It can also be a strategic base for shipping to North American markets such as Mexico and the US. Spread over 17 acres of land at the Parque Sur free trade zone at Villa Rica in the state of Cauca about 500 km south west of Bogota, the plant will have an initial production capacity of 80,000 units per annum. This capacity will be expanded to produce 150,000 units per annum, in the next phase. The plant has been built at a project cost of US\$ 70 million of which US\$ 38 million has been utilized in CAPEX and rest will be used as working capital over the next few years.

General Motors India announces Mexico as major export market

General Motors India has announced the rollout of the first Chevrolet Beat for export to Mexico. Vehicle shipments to its second major export market will commence next month from GM India's state-of-the-art manufacturing facility in Talegaon, Maharashtra. Sales of the mini-car in Mexico are scheduled to begin in December 2015. "In keeping with our commitment to the Make in India program, we are proud to produce exciting Chevrolet vehicles for the



Mexican market," said Arvind Saxena, president and managing director of GM India. "Exports will be an important and ever-growing part of our business. This is part of GM's strategy to make India a global export hub." The Chevrolet Beat is available in more than 70 markets around the world, primarily as the Chevrolet Spark. Chevrolet has sold more than 1 million Sparks and Beats worldwide. GM India began vehicle exports to Chile from its Talegaon facility in September 2014. It exported approximately 1,000 vehicles last year and is targeting exports of 19,000 vehicles this year. "We are looking to identify additional export markets," said Saxena. "This will help drive capacity utilization at our Talegaon facility."

India's first Smart Hybrid Diesel Car launched by Maruti Suzuki

Maruti Suzuki India (MSIL) has launched Ciaz SHVS, India's first Smart Hybrid Diesel Car. Equipped with smart hybrid features including Idle Engine Start/Stop, Power Assist and Brake Energy Regeneration, Ciaz SHVS is able to create a new benchmark in fuel efficiency, making it friendly for the customer as well as the environment. Ciaz Smart Hybrid participates in Government of India's FAME* program which aims to promote Hybrid and Electric vehicles in the country. Ciaz Smart Hybrid was unveiled in the presence of Ambuj Sharma, Additional Secretary, Ministry of Heavy Industries and Public Enterprises, Government of India. On the occasion of the launch, Kenichi Ayukawa, Managing Director and CEO, MSIL, said, "Through Ciaz Smart Hybrid, we are deploying technology to benefit the customer and the environment, both at the



same time. Brand Ciaz has been one of the major success stories for Maruti Suzuki in the past one year. It has won nearly 60,000 customers in India and overseas and established itself as a leading brand in the premium sedan segment. Ciaz Smart Hybrid will further strengthen its position."



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Mahindra Auto Steel opens its Rs110 crore service centre at Chakan

Mahindra Auto Steel, a subsidiary of Mahindra Intertrade, part of the US\$ 16.9 billion Mahindra Group, has announced the opening of its automotive steel processing facility in the auto belt of Chakan, near Pune, Maharashtra. This state-of-the-art facility is a joint venture with China Steel Global Trading Corporation, Taiwan and Mitsui & Co. (Asia Pacific) Pte. Ltd., Singapore. While Mahindra Intertrade holds 51 percent in the JV, the other partners hold 24.5 percent each.

The facility has been set up at a cost of Rs110 crore (US\$ 17 million) in Phase I, over 10 acres of land, with an annual processing capacity of 100,000 tonnes. This plant is the 7th steel service centre in the Mahindra Intertrade family, its 3rd in the Pune region, and its third automotive steel processing facility.

Equipped with a state-of-the-art Blanking Line from Fagor Arrasate of Spain, India's first servo line, this facility will



offer automotive customers in the Pune region the entire bouquet of services such as sourcing, warehousing, yield optimization, forex risk management and SKU-wise JIT delivery, and products such as blanks, trapezoids and profiles.

Tata Motors partners with BITS Pilani



Tata Motors has entered into long-term partnership with Birla Institute of Technology & Science, Pilani (BITS, Pilani) to create a platform for a series of technical education programs to build world-class technical skills to not only bridge present skill gaps that prevail in the automotive industry but also to prepare a future-ready organization. This is a first Industry-Academia partnership for Tata Motors with a leading Institution like BITS, Pilani to develop technical talent at multiple levels in the Organisation. Gajendra Chandel, Chief Human Resource Officer, Tata Motors Ltd., and Professor G. Sundar, BITS Director (Off Campus Programs & Industry Engagement), signed a five year MOU, with an objective to ensure the engineering programs are aimed at meeting the requirements of automotive industry. The first set of programmes to roll-out of this association will be a customised Masters as well Bachelor's Degree in Technology for Automotive Engineering, which will run across various locations in India.

Scania rolls out 1000th truck from Narasapura plant

Scania Commercial Vehicles India Pvt. Ltd. has rolled out its 1000th truck from the Narasapura plant. Anders Grundströmer, Managing Director, Scania India and Senior Vice President Scania Group, along with Richard Wardemark, Director Production and Service Operations, Scania India, flagged-off the 1000th truck from the assembly line in the presence of senior Scania executives and employees. Grundströmer said: "We inaugurated our truck facility in October 2013 and in less than three years we have achieved



this commendable feat. I congratulate all our staff members, who have worked selflessly towards the common goal of making Scania a successful premium commercial vehicle manufacturer in India. All our products are premium, robust and offer unmatched Total Operating Economy (TOE), signifying our commitment to providing a strong base in India for sustainable transport system. Our success also drives the effort of making India a strong manufacturing hub, complementing the "Make in India" campaign."

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Tata Motors, Tata Technologies announce new engagement model



Tata Motors and Tata Technologies today signed a five-year agreement to announce a redefined engagement model, ENGAGENEXT iSourcing, to leverage mutual strengths and capabilities for their strategic priorities, while offering significant career benefits to employees of both the organizations. The new agreement marks a shift from a staff-augmentation model to a delivery-based model for Tata Technologies engineers, designers and consultants working on Tata Motors programs across all locations in India. This model recognizes Tata Motors' ambitious plans under HorizoNext as well the deep expertise developed by Tata Technologies in the automotive engineering space across leading global OEMs to handle major execution programs, including whole vehicle development. It will build on two decades of a seamless working environment to optimize mutual capabilities and realize cost efficiencies, streamlined workflows and accelerated development cycles for Tata Motors' R&D Division.

Toyota C-HR Concept gets a step closer to production



The Toyota C-HR concept, a stylish and compact hybrid crossover, has been updated with the intention of launching a mass-market version in the not-so-distant future. The new five-door model was on display at the 2015 IAA Frankfurt Motor Show. The Toyota C-HR Concept was created to explore new directions for compact crossovers in an increasingly homogenous marketplace, and made its first appearance at the 2014 Paris Motor Show as a design study. The concept is visually distinctive, thanks to its expressive diamond-inspired styling, packed full of eye-catching details that have been sculpted and chamfered to represent the faceted surfaces of a precision-cut gemstone. The Toyota C-HR Concept makes use of the Toyota New Global Architecture (TNGA), an integrated development program for vehicle platforms and powertrain components. TNGA will enable Toyota to create vehicles with improved chassis rigidity, handling stability, and comfort. Additionally, Toyota aims to give the concept an engine with thermal efficiency of over 40 percent, as well as further improving fuel efficiency by making the hybrid system—including the motor and battery—smaller and more lightweight. Toyota hopes to show a production-ready model at the Geneva International Motor Show in March 2016.

JK Tyre to acquire Haridwar unit of Kesoram Industries for Rs2,200 crore

JK Tyre & Industries Limited (JK Tyre) and JK Asia Pacific Singapore Pte Limited, a wholly owned subsidiary of JK Tyre, have signed a binding term sheet with Kesoram Industries Limited (KIL) to acquire one hundred percent equity in Cavendish Industries Limited (CIL). CIL houses a Tyre Business Undertaking located at Haridwar (Laksar) which manufactures a range of tyres, tubes and flaps. JK Group has agreed for this acquisition at an enterprise value not exceeding Rs2,200 crore, subject to conditions, wherein JK Tyre will hold the largest shareholding block and shall have substantial management control of CIL with an option

to place up to 55 percent with its Associates/Group Companies. The acquisition is proposed to be funded, by combination of debt and internal accruals raised by JK Tyre and other JK Group entities. The financial exposure of JK Tyre in the acquisition is expected to be of the order of Rs450 crore. The acquisition will provide JK Tyre with further impetus towards ready expansion in the Truck & Bus Radials segment where it is a market leader as well as entry into the fast growing 2 / 3 Wheeler tyre market. Accordingly, JK Tyre estimates the transaction to be strategic, revenue accretive and synergistic with its existing tyre business.

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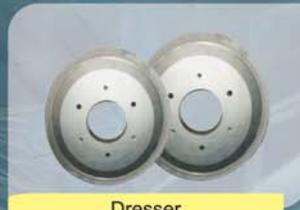
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Daimler & Renault-Nissan break ground for new JV plant in Mexico

Daimler and the Renault-Nissan Alliance have broken ground for their joint-venture manufacturing complex, COMPAS (Cooperation Manufacturing Plant Aguascalientes), in Aguascalientes in central Mexico, which will build next-generation premium compact vehicles for the brands Mercedes-Benz and Infiniti. “Today marks an important milestone for the partnership between Daimler and the Renault-Nissan Alliance. This new joint plant will help both partners to serve their respective customers faster and with more flexibility. As Mercedes-Benz’ first production location for compact cars in the NAFTA region, it will also significantly enlarge our footprint here,” said Markus



Schäfer, Member of the Divisional Board of Mercedes-Benz Cars, Production and Supply Chain Management. “On our end, while sharing high efficiency and flexibility in the joint venture, we will add Mercedes-Benz specific technology as well as further training and assistance by our global lead plant for compact cars in Rastatt, Germany. This proven approach will guarantee that our quality here in Aguascalientes will be the same as at the other locations of our global compact car production network in Europe and China.” COMPAS is 50:50 owned by Daimler and Nissan. The partners will invest a total of US\$1 billion in the joint venture which will oversee the construction and operation of the state-of-the-art manufacturing plant.

proach will guarantee that our quality here in Aguascalientes will be the same as at the other locations of our global compact car production network in Europe and China.” COMPAS is 50:50 owned by Daimler and Nissan. The partners will invest a total of US\$1 billion in the joint venture which will oversee the construction and operation of the state-of-the-art manufacturing plant.

Ford, Alcoa collaborate on next-gen aluminium alloys



Ford Motor Company and Alcoa Inc. are collaborating to produce next-generation automotive aluminium alloys that are more formable and design-friendly. Ford will use Alcoa’s Micromill material in multiple components on the 2016 F-150 – becoming the first automaker to use the advanced automotive aluminium commercially. The companies entered into a joint development agreement to collaborate on next-generation aluminium alloys for automotive parts using Micromill technology. “Light-weighting enables us to design vehicles with great customer attributes – like the F-150, which can tow more, haul more, accelerate quicker and stop faster than the previous F-150, and is more fuel-efficient than ever,” said Raj Nair, Ford Group VP & CTO, Global Product Development. “This collaboration supports our continued drive for innovation, as we research automotive applications for even greater light-weighting.” Alcoa’s Micromill technology, announced in December 2014, produces an aluminium alloy that is 40 percent more formable than today’s automotive aluminium.

Mercedes-Benz to expand SUV production at US plant



Mercedes-Benz is expanding the SUV production in the US. “In the next years we invest \$1.3 billion into the expansion of our SUV production and turn the Mercedes-Benz plant Tuscaloosa into a high-tech location,” says Markus Schäfer, Member of the Divisional Board Mercedes-Benz Cars, Manufacturing and Supply Chain Management. “In this way we can produce the next SUV generations even more flexibly, efficiently and in proven top quality.”

The Mercedes-Benz plant Tuscaloosa will also assemble the next SUV generations including the hybrid versions. The plant expansion in this context includes a new Body Shop, major enhancements to the SUV Assembly Shop as well as upgraded logistics and IT systems.

State-of-the-art technologies and an end-to-end digitization of production processes enable a highly flexible production. As part of the global production network, Tuscaloosa is connected to all Mercedes-Benz Cars locations around the world, allowing a location-independent access to data and process management.

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With acquisition of Seeo Inc., Bosch to push EV batteries



Bosch is debuting a new battery technology for electric cars that could be production-ready in as little as five years. “Bosch is using its knowledge and considerable financial resources to achieve a breakthrough for electromobility,” said Dr. Volkmar Denner, the chairman of the board of management of Robert Bosch GmbH. The acquisition of the U.S. start-up Seeo Inc. (Hayward, CA near the Silicon Valley) will help make this possible. In addition to its own development in the area of battery technology, Bosch now has crucial know-how in innovative solid-state cells for lithium batteries as well as exclusive patents. “Solid-state cells could be a breakthrough technology,” Denner said. “Disruptive start-up technology is meeting the broad systems knowledge and financial resources of a multinational company.” Up to now, the declared industry target has been to double batteries’ energy density and halve their costs by the end of this decade. With the new solid-state cells, Bosch sees the potential to more than double energy density by 2020, and at the same time reduce the costs considerably further. A comparable electric car that has a driving range today of 150 kilometres would be able to travel more than 300 kilometres without recharging – and at a lower cost.

General Motors and Navistar reach commercial vehicle agreement

General Motors Co. and Navistar have reached a long-term agreement to develop and assemble future medium-duty, conventional cab Class 4/5 commercial vehicles, allowing Navistar to strengthen its product lineup and GM to expand its Chevrolet commercial truck portfolio. “Bringing medium-duty conventional cab trucks back into the portfolio strengthens Chevrolet’s commitment to providing commercial customers with more choices and one-stop shopping for a versatile lineup of trucks, vans and crossovers,” said Ed Peper, U.S. VP, GM Fleet and Commercial sales. The future trucks will be jointly developed using Navistar’s expertise in rolling chassis configurations and manufacturing capabilities, and GM’s commercial components and engines. The vehicles are slated for production in 2018 and will be manufactured at Navistar’s facility in Springfield, Ohio.

Volvo Cars breaks ground on first American factory in South Carolina

Volvo Cars of North America President and CEO Lex Kerssemakers and key public officials officially broke ground on Volvo Cars’ first American factory in Berkeley County, South Carolina recently. Construction has now begun on the factory site, which will be capable of producing up to 100,000 cars per year. “Today’s groundbreaking proves that Volvo Cars follows promises with action,” said Lex Kerssemakers, “Volvo is moving quickly to expand its presence in the United States with new cars, new engines and now, a new factory.” Upon opening, the Berkeley County, South Carolina factory will be the global production home of the all new S60 Sedan, which is currently under development at Volvo Car Group headquarters in Gothenburg, Sweden.

Toyota to collaborate with MIT and Stanford; will invest US\$50 million

The R&D of intelligent vehicle and mobility technologies will get a major boost in an ambitious new collaboration between Toyota, MIT and Stanford. At a press conference, Toyota Motor Corporation (TMC) announced that it will be investing approximately US\$50 million over the next five years to establish joint research centers at each university. Additionally Dr. Gill Pratt, former Program Manager at DARPA (the Defense Advanced Research Projects Agency) and leader of its recent Robotics Challenge,



has joined Toyota to direct and accelerate these research activities and their application to intelligent vehicles and robotics. Kiyotaka Ise, TMC Senior Managing Officer and Chief Officer, R&D Group, said: “We’re here to mark the beginning of an unprecedented commitment. We will initially focus on the acceleration of intelligent vehicle technology, with the immediate goal of helping eliminate traffic casualties and the ultimate goal of helping improve quality of life through enhanced mobility and robotics.”

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To champion the cause of productivity in the metal working industry, Indian Machine Tool Manufacturers' Association (IMTMA) is organizing the National Productivity Summit (9th in the series) on 20 – 21 November 2015 at Gurgaon. The event showcases best productivity practices in metalworking through live case study presentations, Plant visits and Keynote sessions.

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- Mr. Pete Baxter, Vice President, Delcam Worldwide, UK *
- Mr. Rajesh Magoo, Chief Operating Officer, Transmission & Engine Component Business, Hitech Gears
- Mr. Rajeev Wasan, Senior Vice President - Manufacturing, Honda Cars India

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Key Take Aways

- Listen to keynote presentations from industry leaders
- Live case study presentations on best productivity improvement projects
- Learn innovative approaches to address productivity challenges
- Cross learning from best productivity practices
- Exchange new ideas & concepts – Knowledge networking
- Ideal platform to interact with several manufacturing professionals



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Managing complexities

One of the biggest challenges faced by cutting tools players is meeting expectations of on time deliveries with shorter lead time.

By Krishnan Naganathan

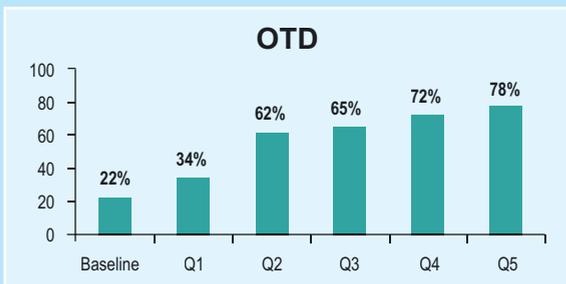
Indian manufacturing has lacked the ability to compete with Chinese companies due to a lot of structural limitations, chiefly among them, is the lack of size. Being smaller, the sector has struggled to compete on price, their larger size providing the Chinese competitors a distinct advantage in manufacturing and delivering high volume standardised products. However, when it comes to small volume non-standardised products, Indian engineering companies have managed to compete with Chinese competitors. However, maintaining competitiveness requires multiple challenges to be overcome. These include: 1. Flexibility in manufacturing to handle many different SKUs., 2. Optimise manufacturing and supply chain costs., 3. Ensure on time delivery performance., 4. Manage quality despite the complexity of the business.

Cutting tool industry has also not remained untouched with this and the growth has come through acquiring capability to manufacture the entire product range. Over the years customers expectation has evolved and now when organisations are trying to compete in markets beyond limited boundaries, one of the biggest challenge they face is 'meeting expectations of on time deliveries with shorter lead time'. With



Applying lean philosophy thus becomes critical factor to compete and succeed."

A leading abrasive products manufacturer started facing similar challenge of providing customers an experience of On Time delivery with a lead time reduction of 25 percent, when it started to cater to overseas markets. It took almost one year for the organisation to sustainably improve its performance on these two parameters. The lean based improvement exercise led to a significant improvement in delivery performance. The throughput improved by 25 percent leading to reduction in inventory and overhead costs by 20 percent and 15 percent respectively.



The above performance measurement is based on reduced lead times, giving the organisation a competitive advantage.

number of players operating in cutting tool industry quality is given and low cost is no more a choice.

The traditional cellular manufacturing concept adds to further complexity of adding cost in developing underutilised dedicated cells. While ERP may help in better planning it does not really have an impact on lead times. A high mix of products that share same line / cell makes it much harder to schedule due to availability constraints of machinery and capacity. Applying lean philosophy thus becomes critical factor to compete and succeed. Lean implementation in discrete manufacturing is focused on establishing continuous flow. The key to establishing flow in a high mix and low volume scenario is through creating mixed model value streams and the following principles help in overcoming the challenge.

- Creating value streams for product families,
- Developing standard work for the product families,
- Balancing the resources to ensure flow pre pacemaker
- Bringing flexibility and redesigning the equipment capacities and few layout changes
- Sharing resources in a dynamic manner
- Using principles of Quick changeovers

The first three help in ensuring flow and last three helps to crash the lead times. This helps the organisation to gain a competitive advantage as the customers can experience an "Improved On Time Delivery with Reduced Lead times". This journey also requires other enablers to be firmly in place which help in ensuring there is a culture of continuous improvement is established in the organisation and steady state of improvement on the key parameters.

The author is the CEO of Valcon, a management consulting company with Scandinavian roots and a global reach.



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Innovative product development by tool manufacturers will be a constant in order to keep up with the challenges thrown by rapidly evolving product design, material and coating technologies."

We will continue to work towards strengthening our position as a preferred partner and supplier to our customers and a total solutions provider in the country, says **L. Krishnan, MD, TaeguTec India Pvt. Ltd.**, in this interaction with **Niranjan Mudholkar**

have always endeavoured to offer the best value proposition for our customers by innovating ingenious products and solutions with maximum cost efficiency.

Q Having the right tool is one thing and using it in the right way is another. How is your company educating and helping its customers for this issue? Do you conduct training programmes for your clients' operators?

We conduct regular training workshops and seminars for our customers wherein latest machining trends and techniques are discussed and demonstrated by industry experts. To keep our customers updated works as a mutually beneficial proposition considering we are committed to working with customers around the world to bring down their machining cost by offering efficient and state-of-the-art machining solutions.

We also attempt to make all relevant resources like catalogues and user guides more and more accessible, now particularly over the ubiquitous digital platforms.

Q What do you think will be the key trends in the metal cutting industry?

In the cutting tool industry, the customer is looking for ways to optimise existing resources concurrently with cutting costs. Over the last 18-24 months, there hasn't been consistent growth in the manufacturing sector, but customers continue to look out for options to improve process and cut down manufacturing cost. Innovative product development by tool manufacturers will be a constant in order to keep up with the challenges thrown by rapidly evolving product design, material and coating technologies.

Q How can a cutting tools company like yours help manufacturing companies in this scenario?

We are constantly evaluating the changing and emerging needs of the customer; in many cases, we assist customers throughout the development stage of a new product. This allows our R&D to provide new, unconventional solutions to reduce costs before production actually begins.

We will continue to work towards strengthening our position as a preferred partner and supplier to our customers. We

Q Today's manufacturing scenario requires cutting tools players to constantly innovate and enhance their offerings. What are you doing on this front?

As our customers are evolving – new products and components, new materials and coating technologies – newer challenges arise for cutting tool players.

The challenge for us thus, as for any cutting tool company, would be to be able to offer a bouquet of solutions and services across the board. Our strategies revolve around the introduction of new products towards increasing productivity and reducing cost. We will continue to work towards strengthening our position as a preferred partner and supplier to our customers and a total solutions provider in the country.

Q Any highlight from the Delhi Machine Tool show and the Ahmedabad (Gandhinagar) Machine Tools Show?

Delhi Machine Tool and Ahmedabad machine Tools Show are two important regional machine tool shows organized by IMTMA. Such shows will help manufacturers to reach out to regional customers, in particular SMEs. Both the shows were well received by local customers. 

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'Your Global Craftsman Studio'

Gone are the days when there used to be a cutting tool supplier. We strongly believe in playing role of a "Friend, Philosopher & Guide", says Prashant Sardeshmukh, Director, MMC Hardmetal India Pvt Ltd., in this interaction with Niranjana Mudholkar

Q Did you participate at the Delhi Machine Tool show? Any highlight from the show?

MMCI participated in Delhi Machine Tool Show and got very good response from customers in Northern part of India. We showcased newly launched products like WSX445 revolutionary facemill, MVX indexable drill series, New PVD coated grades for Difficult-To-Cut Materials together with a new concept – "Your Global Craftsman Studio".

Q While the market sentiments are surely looking positive, the industry is still far from a probable turnaround. Under these circumstances, what do you think will be the key trends in the metal cutting industry?

Currently Indian manufacturing industry is going through a tough phase, while upcoming projects are looking for high-tech ultramodern tooling solutions, existing customers who are facing sluggish demands are requesting us to provide low cost solutions. Hence, cutting tools suppliers needs to have total solutions in their product basket.

In today's world, rapidly changing market demands requires special efforts to implement new technologies at competitive price, stipulated time frame and user friendly ways.

Q How can a cutting tools company like yours help manufacturing companies in this (above) scenario?

Gone are the days when there used to be a cutting tool supplier. We strongly believe in playing role of a "Friend, Philosopher & Guide". Lot of things are on cards and we are working on it. Moreover, in case of service support, we have industry specific product specialists, who are trained in our manufacturing plants in Japan, to boost our support for all the technical needs of customers.

This gives the desired application knowledge together with hands on experience about usage of new generation cutting tools. We have also launched E-Learning Courses for customers on our website.



In today's world, rapidly changing market demands requires special efforts to implement new technologies at competitive price, stipulated time frame and user friendly ways.

Q Having the right tool is one thing and using it in the right way is another. How is your company educating and helping its customers for this issue? Do you conduct training programmes for your clients' operators?

"Knowledge is Power-if applied" is our motto behind educating the customers. Using a right product for the right application is a key to success.

We have designed an appropriate training module for customers in two different levels. In-house training programs are conducted at customer's manufacturing facilities. This gives the desired application knowledge together with hands on experience about usage of cutting tools.

Our technical services department is continually upgrading these modules keeping in view, a shift in technology. We spend significant time and money on "Train the Trainer" concept

to ensure global standards of trainings to our customers.

Q Gone are the days when a cutting tool was considered as a 'product'. Today, it is a solution for addressing specific requirements while considering several other factors related to performance, productivity, cost and time with a focus on continuous improvement. This requires cutting tools players to constantly innovate and enhance their offerings. What are you doing on this front?

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Taking a 'different' approach

We are bringing tools which have more flexibility in terms of size usage, ease of use and sturdy construction to take care of higher parameters, says **Keshav Khurana**, Executive Director, Wohlhaupter India Pvt. Ltd., in this interaction with **Niranjan Mudholkar**

Q Did you participate at the Delhi Machine Tool show? Any highlight from the show?

Yes we did participate in the show through our channel partner who wanted a known scale for promotion of our products. This show gave him a good opportunity. Highlight of the show was the presence of medium and large scale customers as well who were earlier missing in such shows.

Q What do you think will be the key trends in the industry?

It will be products which can be differentiated from the crowd of existing products. Different approach and service differentiation will be the key.

Q How can a company like yours help manufacturing companies in this scenario?

We have the biggest range of boring tools in the world, from diameter 0.4mm to 3255mm. Manufacturing companies in metal working sectors gain advantage from our highly precise, cycle time saving tools.

Q Do you conduct training programmes for your clients' operators?

We provide separate operating manuals along with all precision boring tools in our range which is easy to understand for the user. Seminars and training programs at the customer's shop floors are regularly done for their skills improvement.

Q Today's customer requirements call companies to constantly innovate and enhance their offerings. What are you doing on this front?

We are bringing tools which have more flexibility in terms of size usage, ease of use and sturdy construction to take care of higher parameters. Productivity thus gets automatically improved. Also Wohlhaupter presents Tool Architect, the web-based tool configurator - A small step towards Industry 4.0 – a large step for everyday production.

Get the appropriate tool with a few clicks: a promise by Wohlhaupter's new web program. As a contribution to the increasing digitisation of production, and as a real, virtual instrument, the precision tool manufacturer's innovative tool

configurator, Tool Architect, is now online. At www.tool-architect.de, suitable tool configurations can be assembled 24/7 – including 2D and 3D representations for preparatory work and for simulating and checking NC programs.

Catalogs are a thing of the past – people now look for user-friendly and virtual solutions. In order to enable existing customers and interested parties to configure complete tooling systems online, Wohlhaupter has developed an efficient online program, which will be available free of charge. Every user should be able to assemble the right tool as quickly and intuitively as possible, from the master shank to the precision turning head, including replaceable inserts. The Tool Architect's selection options display only the components that actually fit together and can be added. Its highlights are:

Easy to understand and highly convenient:

At www.tool-architect.de, all components from the extensive MultiBore modular boring range can be selected and visually assembled according to one's own requirements. "It was important to us to provide users with the simplest possible instrument, so that they can visualize just the right tool for their application, quickly and in 3D," underlines Frank Wohlhaupter, Technical General Manager of Wohlhaupter GmbH.

Early and efficient planning of production processes:

"Whether for existing Wohlhaupter tools already in use or for new applications and machining tasks – the user can assemble the required tool with just a few clicks and immediately has the operating instructions and specifications at hand," Frank Wohlhaupter explains further. Not only can a quote be requested for the configuration, advice over the telephone on unanswered questions is also readily available. And when the package arrives, how the tool is assembled becomes clear from the created configuration.

Advice to the point: "Our goal was for our customers to be able to select their tool configuration, quickly and without expert knowledge, from our extensive MultiBore range – and in easily understandable form. Our web-based tool offers flexibility and, above all, safety in the tool design. For our customers, Tool Architect is most certainly an important step toward greater productivity in work preparation and in the workshop," says Frank Wohlhaupter. 





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Invest in yourself

Distractions at this time can be dangerous. It is quite possible that the future of the automotive industry in India depends on sticking to the knitting.

By Alagu Balaraman

Last month, in the annual session of the Automotive Component Manufacturers Association of India (ACMA), the Chairman of the Suzuki Motor Corporation, Mr Osamu Suzuki, made a couple of important points. These points, though stated with simplicity (characteristic of the Japanese), have deep ramifications for the consumer market, the automotive industry and the health of individual companies in this sector.

Make (good products) in India

The first was to point out that “Make in India” would necessarily need to be supported by a Quality in India initiative. Mr Suzuki pointed out that the increasing frequency and scale of recalls by the automotive industry was very visible and would affect the perceptions of investor companies in judging India as a manufacturing base.

In India, the concept of recalls is relatively new. Long a producer driver market, people used to be grateful to receive a product and were not going to quibble about “minor” details like quality and aesthetics. When you are dying of thirst, it’s unlikely that you will debate whether the water should be still or sparkling. This was an aeon ago and today, the automotive industry is one of the most competitive industries in India where domestic manufacturing is involved. It might very well be the most competitive. In competitive markets, you cannot

take your eye off the ball.

Indian consumers are getting accustomed to global quality standards, both in terms of products and practices. This is a one-way street and there is no going back. Consumer acceptance of recalls is so far not alarming. When the voluntary policy of recalls was announced by SIAM in 2012, the then SIAM President, Mr Vikram Kirloskar, described the policy as increasing transparency in the industry and one that will boost consumer confidence. This has certainly been borne out. Whether it was recalls of the Suzuki Swift Dzire, the EcoSport or Honda’s City, the car sales did not seem much damaged by the recalls. It is certainly a progressive move by the industry.

Honeymoon? For how long?

This is not the case when viewed from a production perspective though. While Indian consumers might be impressed that manufacturers are willing to admit mistakes and to reach out to rectify them, no engineer is going to be impressed by the number and simplicity of the parts that are at risk. After all we are not talking about hi-tech features, but simple things like fuel tank components and seat belt sensors.

Tom Peters said “Almost all quality improvement comes via simplification of design, manufacturing ... layout, processes and procedures”. But day to day pressures and changes actually cause a gentle and steady build-up of complexity. It takes a

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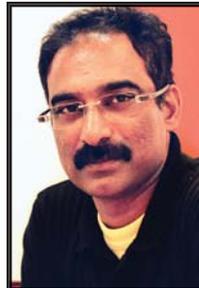
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strong leadership focus on quality to bring back simplicity (in design) as the basis of sustainable quality. This industry is going to see a lot of feature additions and technology changes. It is a time for a strong leadership focus on redesign and re-engineering to bring back a quality focus.

After a honeymoon period, consumers will start tracking recalls and social media based quality reports more closely. Why should they risk their money with an unreliable manufacturer now that they have choice? So, Mr Suzuki is very correct in pointing out that global investors will be concerned about committing to increasing capacity in a market that seems to struggle with producing products of the correct quality.

Stick to the knitting

Mr Suzuki's second comment is much more interesting. He requested companies in the auto component sector to re-invest profits in their existing businesses rather diversify out of them. He specifically named diversification into hotels and leisure. Now, when it comes to over the top returns, real estate has always been a horse to back in emerging markets with fast changing demographics. So, why this concern? Is it just to ensure that there are components available for the OEM factories? Or is there something more behind this to be concerned about?



"So, if existing auto component manufacturers are not in a position to meet market needs, either in terms of capacity or capability (more likely), there is likely to be a surge in imports or new entrants."

A market worth fighting for

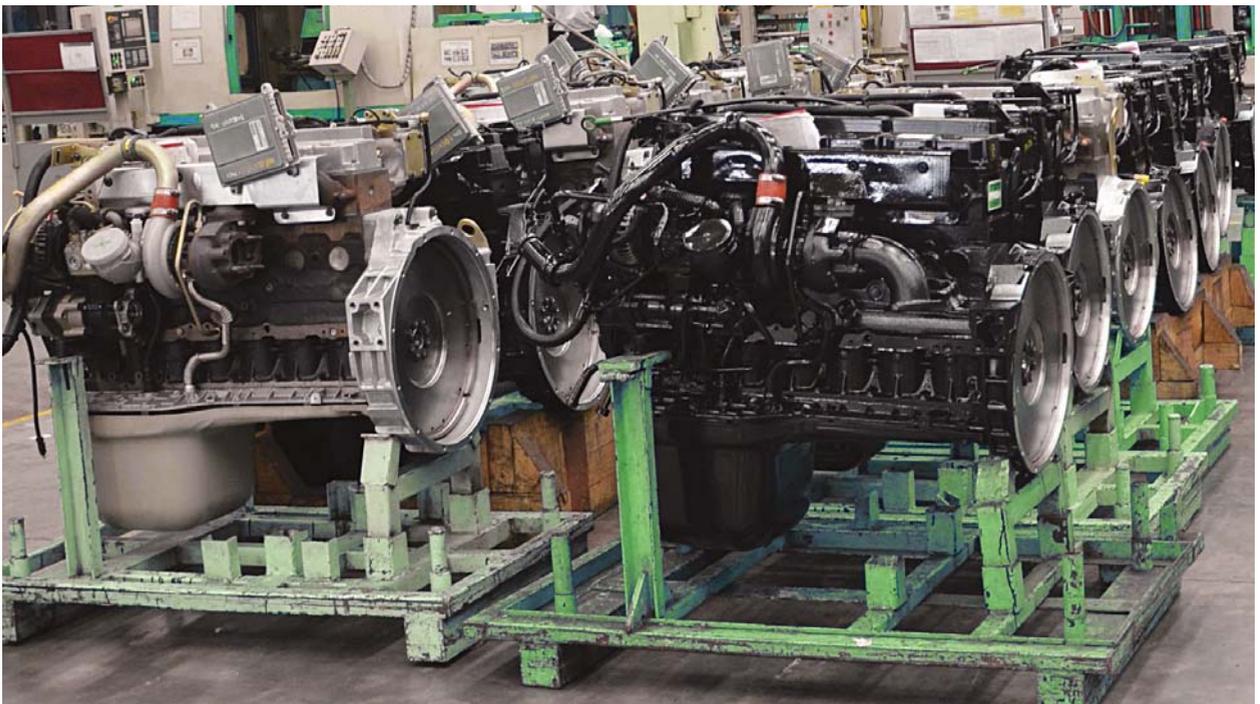
The automotive industry in India is not a small one. The sixth largest manufacturing base in the world, India is currently producing over three million passenger vehicles and over 19 million 2-wheelers. The last 5-year CAGR of sales in the component industry has been 11.1 percent. So profit pressures notwithstanding, this will be an important market in the future. Important for any large global player.

However, vehicles are changing and changing fast. Just as the telecom industry went through a revolution, so is the automotive industry. Through a combination of regulation and more so consumer demand, features that were not seen in Indian cars five years ago are rapidly becoming standard. These are altering the sophistication of components, for example styling and materials, and is also altering the technologies in use. Passenger comfort and infotainment systems are creating a sea change in complexity. At a time like this, it is disturbing that Indian companies in the sector are investing only 0.5 percent of sales in R&D, compared with the

3-4 percent in US, Europe and China.

Diversification is fun

When such changes are afoot, it is hardly the time for auto component leaders to be distracted with diversification. Corpo-



Consumer demands are altering the sophistication of components and are also altering the technologies in use.



rate strategy studies have shown that unrelated diversifications are inherently risky. They are fun and keep people occupied in a project style of working, but they really don't yield substantial shareholder value. This is because, the industry models, the capabilities required and the management bandwidth needed to learn new areas are often underestimated. In a classic HBR article (From Competitive Advantage to Competitive Strategy, HBR May 1987), Michael Porter describes an analysis of unrelated diversification over a period of over 3 decades, done by companies with deep managerial talent, including companies like GE. The story is not encouraging. He shows that 74 percent of unrelated acquisitions end up getting divested. It shows that building capability in one industry, does not easily translate to other industries. If it were that easy to learn a new industry, then it would be easy to enter and grow in auto components as well. In reality, shareholder value is actually reliant on the core, base business and not the diversification itself.

Core business risks

Meanwhile, what happens in the core business that has been fuelling this diversification? If the core business fails to invest and keep up, its product portfolio will age. But markets will not stop evolving. And at the end of the day, the consumer's need will be met. The Indian consumer is definitely not going back to an era where people booked a car and waited 7 years for delivery. So, if existing auto component manufacturers are

not in a position to meet market needs, either in terms of capacity or capability (more likely), there is likely to be a surge in imports or new entrants. Free trade agreements will expand and imports will rise. In the last 5 years, against an 11.1 percent growth in sales, imports have grown at 18.2 percent. This will accelerate.

If not imports, then new entrants can be expected. To capture share, they will enter with higher technological capabilities and establish themselves in this growth market. Since they will offer the higher end components to OEMs, it is likely that they will capture a disproportionate share of the industry profit pool. This will leave companies who have not upgraded their capabilities and focused elsewhere to continue making lower end products that generate revenues without profits.

That's what lies beneath

So, it seems that Mr Suzuki's warning is a timely one and should not be viewed as a simple recommendation. This is an industry that will change rapidly and requires a strong focus on quality standards. It also requires management teams to focus on staying ahead of the curve, if not at least on it. This will require an investment of time and money. Distractions at this time can be dangerous. It is quite possible that the future of the automotive industry in India depends on sticking to the knitting. 

The author is Partner & Managing Director, CGN Global – India



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UNEMPLOYABILITY

Coping with “Unemployability”

Nearly 95 percent of engineering graduates in India remain unemployable and, on top of that, 80 percent of a professional engineer’s time is taken up by essential but non-value-added tasks.

By Samir Yajnik

From scale to skill, FY 2014-15 has seen a significant move as organizations choose to veer away from simple operational scale-ups to in-depth review of skillsets. The National Mission for Skill Development estimates that only 2.3 percent of the workforce in India has undergone formal skills training compared to 68 percent in the UK, 75 percent in Germany, 52 percent in USA, 80 percent in Japan and 96 percent in South Korea. Large sections of the educated workforce have little or no job skills, rendering them unemployable for the most part. Based on the Census 2011 and NSSO (68th Round) data, it is estimated that 104 million fresh entrants to the workforce will require skill training by 2022. Furthermore, 298 million of the existing workforce will require additional skill training over the same period.

A startling insight is that nearly 95 percent of engineering graduates in India remain unemployable and, on top of that, 80 percent of a professional engineer’s time is taken up by essential but non-value-added tasks. Added to this is the fact that engineering research and development is slated to grow to \$30-40 billion by 2020. Well, engineering remains one of the highest in-demand domains and there is redoubled emphasis on core engineering profiles, engineering design, research and development. Even so, what companies need are people with bankable skills; engineering graduates-on-paper just won’t do.

Estimates suggest that India has more engineering graduates than the US and China put together. And yet, graduates in India find it harder than ever to either find a job

or to find one that is commensurate with their qualifications or experience. With such an abundance of graduates, what is really short-circuiting their employability chances?



They must also show a willingness to unlearn, in line with cyclical changes in technology and relearn to meet the demands of the job.”



An imminent need to move up the engineering ladder

Much of the slowdown in the hiring of engineering talent in India has to do with the changing nature of the job itself. There is a huge demand for skilled employees in advanced engineering roles such as aerospace, not just in India, but even in the developed world. With changing business models, even the so-called ‘regular’ engineering profiles require people not just with textbook knowledge but who are grounded in creativity and can apply the same in challenging and diverse scenarios. Such roles demand, apart from a higher degree of skillsets, some kind of actual field experience.

Apart from experience and depth and breadth of expertise, aspirants for advanced engineering services need to be lifelong learners. They must also show a willingness to unlearn, in line with cyclical changes in technology and relearn to meet the demands of the job. Essentially, the ability to get closer to core design initiatives will also form a crucial part of their persona. The existing workforce has also realized that they must stay in step with global counterparts or be left out in the long run.

Where is the skill deficit coming in?

According to most estimates, India is churning out nearly 1.5 million graduates every year from 3,500 odd engineering institutes. Government and education sector initiatives are encouraging students to take up STEM subjects. And yet most reports continue to predict an increasing gap between

supply and demand, with global demand expected to reach proportions of nearly 74 percent by 2020. So there is more than adequate supply of and increasing demand for engineers. Where then is the problem?

The solution of ‘make more engineers’ preached by all and sundry hardly seems to be working as actual employability of young engineering graduates hovers around a measly 4-7 percent. The fact is apparent in the paradox that India produces as many engineers as technical graduates, while in most developed countries the ratio stands at something close to 1:10. That ratio is informed by the understanding that engineering is much higher up in the intellectual rung than basic technical profiles since it necessitates critical analysis, evaluation and creativity.

Part of the problem could lie with the outmoded learning culture in institutes that results in insufficient practical experience or industry exposure, little or no encouragement in terms of innovation, rampant lack of soft skills, and poor understanding of the overall industrial landscape. But, in reality, the problem is not that of a shortage of graduates but that of ‘industry-ready’ graduates. Most take years after graduation to develop the essential skillsets necessary for an engineering career.

The problem is not only limited to fresh graduates but also to the existing workforce. The gaps between an ever-evolving job profile and basic skillsets have become such that even

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Today's jobs demand some kind of actual field experience. Pic for representation only

experienced professionals in the field need to upgrade skills to keep up with industry standards. Take for example the construction and heavy equipment sector, while engineering is the core to the development of the industry there is an inevitable need for the end to end skill development. The operators in construction & heavy machinery sector have to control the vehicles and perform various construction duties so these operators require proper training to work on these machines. Even the experienced operators of heavy machinery need to keep improving their proficiency due to new technologies while following strict safety guidelines and regulations.

Where do we go from here?

Currently, India has the once-in-a-lifetime advantage, namely, the demographic dividend – the youngest work force to total population ratio anywhere in the world – with the average age of workers remaining way below that of other countries. The impact of the demographic dividend is such that it could automatically result in renewed growth for the economy. The dire shortage of skilled resources is throwing a wet blanket on our hopes to capitalize on the demographic edge before even that window of opportunity closes up.

While the demands for engineering profiles have gone up, private sector companies have been trying very hard to combat the situation. Currently, it takes an engineering graduate around 2-3 years after graduation to acquire the skills for employability in high-end engineering. NASSCOM has come up with multiple solutions, so students can be fine-tuned for industry scenarios even as they pursue their degrees. This is done through finishing school programs, training programs for both professionals and educators, joint workshops conducted by the industry and academia, and many more initiatives.

“The gaps between an ever-evolving job profile and basic skillsets have become such that even experienced professionals in the field need to upgrade skills to keep up with industry standards.”

Special industry initiatives to bridge industry-academia gap

The talent initiatives proposed by the NASSCOM Engineering Council will help smooth the transition of an engineering graduate from a student to a professional. Since the need for employable graduates is common across the industry, whether it is a BPO solutions provider or an analytics or design provider - there needs to be a common solution to the employability problem. To that end, the council plans to roll out a general template to be used in institutions across India to prepare graduates for fulfilling and rewarding roles in the industry.

A major highlight of the industry initiatives has been the 'Ready Engineer' program designed by Tata Technologies that enables engineers to design and build better and be future-ready. As part of this program, industry experts meet up with students on a regular basis and provide them with much-needed mentoring. Students get opportunities to work on engineering designs for international clients as well as work on dissertations or live projects at global delivery centers in offshore locations. Most often, this is followed by a graduate role in the company.

NASSCOM has also come up with several training solutions and programs for end-to-end skill development of people in engineering or operational roles. To this end, NASSCOM has tied up with both government and non-government agencies to offer skill development initiatives designed for students as well as people in engineering or technical roles. A significant initiative has been the setting up of the IT-ITeS Sector Skill Council that offers qualification packs to IT services aspirants. Apart from this, most initiatives taken up by NASSCOM - like the Centre of Excellence for Internet of Things (IoT), 10,000 start-ups, National Skills Registry for IT/ITES Professional (NSR-ITP) - include major components for skill development and talent nurturing.

With the government announcing ambitious initiatives such as 'Make in India', it is implicit that we cannot progress much without some serious upscale of our engineering capabilities. The need of the moment is for the government and the academic community at large to take cognizance of such remarkable industry-academia collaborations to bring engineering students in India up to scratch with their peers worldwide. 

The author is President Sales & COO APAC, Tata Technologies.



Practicing change management is a transition approach that helps an organisation to accomplish the missing piece in the business and to attain its desired goals.

By A. Sharma

Change is essentially required in every life cycle phase of any business, whether it's in the establishment stage, expansion stage or maturity stage. Practicing change management is a transition approach that helps an organisation to accomplish the missing piece in the business and to attain its desired future state or goals. And with the goal to keep the organisation stable in this heightened global competition, almost all companies have to bring modest modifications to their strategic and operational planning. Corporate culture is a phenomenon that just keeps changing and brings in challenging situations all the time.

Change initiatives start out with acknowledgement of the current state of the business. To have a clear picture, comparing rationales will be the second step. It is followed by examination of complexities.



A. Sharma

"Change management is a multi-dimensional approach to the business and it transcends the traditional concepts. It brings 'change readiness' in the organisation."

Finally, comes the time to compel zealous launches.

Change management is a multi-dimensional approach to the business and it transcends the traditional concepts. It brings 'change readiness' in the organisation. And proper change management ensures that employees commit to a more efficient way of working and modify long-established habits and behaviours.

Operational planning is a crucial primary step for change, which is coherent into the overall project plans. The other key challenge is to make change management involved in the business plan rather than considering it as an annex that is managed independently. So, change management needs to be implemented in a parallel way with the overall business plan.

Everyone relates to the fact that change management is important. But making it happen effectively needs internal acumen as



well as external intervention. Moreover, it also calls attention to certain key areas.

Leadership: Overwhelmingly, the greatest contributor to the success of any goal and project is an effective and strong executive leader. Change management requires a leader with an eagle's eye (clear vision) and a clear set of strategies and operational inputs. As the vision is the picture of the destination, it needs to be coordinated with implementation of the following few set of actions:

- The leader or the management team should show active and visible support.
- Should ensure that change should remain a priority.
- Should demonstrate commitment as a role model of change.
- Should involve the team in the process and should share the whole reason of applying change management approach along with the plans and strategy for change management while guiding the team to implement the same.
- Should communicate a clear conception of the goals and objectives of the change.

Quality Management & Change Management go together



For representation only

A business can only shine with collaborative results of change management and quality management. Quality is the aspect which needs to be maintained or surged each time as it majorly affects the life-cycle of a product and business. Quality is actually a dashboard element for the change management process. Quality management not only helps in managing the process delivery, but also standardises benchmarks at each step of the change management cycle. The key is to use strategic approach which starts with primary steps like Quality measure and Quality evaluation followed by comparison and review checks. This would help in creating a competitive edge in the market. It will bring stability to the managing the quality of the process and in-turn to the overall change management process or methodology being deployed.

Teamwork makes the Dream work: An exceptional change management team under an effective leader and motivator is a key to success. Effective change management requires skills, expertise, experience and commitment of every team member in coherence. The key is to put the right people, at the right time, for the right job.

Stick to change mechanics: Success depends upon the execution and implementation of strategies and demands concentration along with proper coordination. Generally organisations tend to replace their change management approach after a small single failure. But change management requires long term implementation to attain the goals. It is vital that tactics and operational focus go together.

Look for long term goals: Organisations under pressure generally look for short term goals, but leaders are not made overnight. As change management requires long term implementation to attain goals, organisations should look for a longer goal (which brings stability) with constant changes. Change management is more about focusing on the source and not the signs; on the cause and not the contest. Immediate goals are important but dark horses need their own time to shine.

Execution is the key: Putting some skin in the game with visible demonstrations is the true test of commitment. And all the planning and preparations are just for getting ready to execute constantly with perfection. A robust change management and productivity driven model can make execution more promising.

Overcoming internal resistance to change: This is one of the areas that seems to be neglected in almost all change management programs taken up across the globe. During a change management intervention, budgets, resources, their allocation and the domain take precedence. However, all the integral areas mentioned will get optimised only when linked to the quantum of resistance that could be expected before the start of the engagement.

A designated leader could very well be leading under compulsion and could very possibly not penetrate the right values that the change initiative should or could bring-in and is rather leading just for the program purpose. This is an example of a resistance scenario. We need to remember that any change management program does not bring in immediate results; rather it brings things to life and improves productivity with optimisation of the bottom-line contributions.

Internal resistance could be very well be dealt with by deploying an external body/external change management team as this helps bring in an unbiased environment which is vital for success of the program and for bringing in sustainable results both operationally and strategically. One must understand that Long term Strategic Vision + Operational Competence + Effective Implementation Driven Change management approach = Positive & Sustainable Change. 

The author is Director, Ccebrate Business Consulting



CELOS® with 5 new APPs in 2015

DMG MORI presented CELOS® at the EMO with a total of 16 APPs and as a PC version. With CELOS®, DMG MORI has produced a common user interface with a unique multi-touch screen for all new high-tech machines. Structuring by means of APPs makes CELOS® as easy to operate as a smart phone. As a result, users benefit from a 30% saving in setup time and 50% less effort for calculating technical values and searching for important information. The latest CELOS® version will be available from April 2016 and presented for the first time at the EMO trade fair in Milan. Also on display, here will be a PC version of CELOS® for continuous production planning in production engineering with direct connection to the machines.

As an APP-based control and operating software package, CELOS® from DMG MORI enables consistent management, documentation and visualization of order, process and machine data. It also simplifies, standardizes and automates operation of the machine.



CELOS® from DMG MORI provides simplified machine operability and effortless connection to higher-level network structures

The version of CELOS® to be presented in Milan now offers 16 APPs. It includes five new APPs.

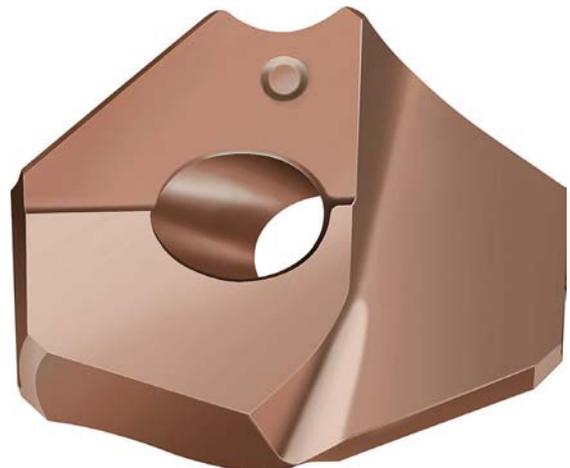
The 5 new CELOS® APPs: Similar to a smart phone, users have direct access to all available applications via the “CELOS® APP MENU”. The CELOS® APPs are divided into five groups for production, utilities, support, configuration and machine views. The five new CELOS® APPs specifically target a further improvement in production engineering and company organization, and provide optimized applications and service planning of DMG MORI machines. These Apps are PALLET CHANGER, SERVICE AGENT, TOOL HANDLING, JOB SCHEDULER and MESSENGER.

For more details, contact:
<http://in.dmgmori.com/>

Top performance you can see from the colour

Xtra•tec® B401x point drills are high-performance tools for drilling applications. They are equipped with Color Select P600x indexable inserts, which are suitable for use with a variety of materials. The unique range of colours used for their coatings was developed by Walter experts and are based on the colours used to designate ISO material groups. They immediately show users which cutting material grade for which application they have in their hands. The colour also acts as a wear indicator.

The red Color Select grade WKK45C will soon be available for cast iron workpieces. The substrate, its coating and geometry have been developed to suit the typical properties of cast iron: Brittle, irregular structure, inclusions and crusty surfaces. These properties place a great deal of strain on the cutting edges, which means that temperatures also increase very quickly while machining. The new WKK45C cutting tool material has a multilayer PVD coating which counteracts this: It consists of a combination of highly wear-resistant layers and supporting layers that give the material its toughness. The relationship between hardness and toughness is therefore optimal for working on ISO K materials; cracks are prevented from forming and spreading. The structure of the coating is thicker than that of standard single-layer coatings, which gives it exceptional heat shielding characteristics. The result is a con-



The new Color Select P600S-WKK45C indexable insert for Xtra•tec® point drilling and boring tools has been optimised for use with cast iron workpieces. Walter manufactures this insert with a diameter of 12 to 29 mm and 77 mm. The colour of its coating indicates which ISO material group it should be used with. Image: Walter AG

siderably higher level of productivity and process reliability when drilling in ISO K materials.

For more details, visit: www.walter-tools.com



New plastic guide trough keeps energy chains safely and easily on track

The motion plastics specialist igus has launched a new modular guide trough system, which is entirely made of tribo-optimised plastic: guidelite plus. The system is very light, easy to install, cost effective and is also suitable for use in harsh environments.

Guide troughs, usually made from aluminium or steel, ensure correct operation and a long service life for energy chains in gliding applications with long travels. The new guidelite plus from igus is a guide trough that is made entirely of plastic and is easy to assemble. Individual elements made of abrasion-resistant high-performance plastic can be connected together very quickly and without tools by hand due to a locking mechanism specially designed for this system. The low weight of the plastic parts helps with installation, but is also advantageous where lightweight solutions are needed. A special expansion joint, which is provided in every second link of the trough elements, guarantees flexibility and adaptability especially in case of large temperature variations. Thus, the product can also be used without restrictions in outdoor applications.

Plastic for harsh application areas: The plastic guidelite plus guide trough is also suitable for applications where metallic alternatives are very expensive or cannot be used due to aggressive chemicals or risk of corrosion. For these applications, the guidelite plus can be manufactured from a special plastic that is more resistant to chemicals. Thereby new applications are possible in the galvanising sector or fertiliser production, where expensive stainless steel solutions were previously required. But even in other dynamic uses, in which long travels



have to operate reliably without failure or maintenance at a low speed of up to 1 m/s, the guidelite plus is an alternative that saves time and cost. In purchasing alone, double digit percentage savings are possible compared to aluminium or stainless steel troughs.

The plastic guide trough is available for energy chains with outer heights of 35, 50 and 64 millimetres. The use of guidelite plus is economical in both new installations and retrofitting of existing plants. Much cheaper than a comparable stainless steel or aluminium trough, the user saves twice, in the purchase as well as the fast assembly.

For more details contact: Harish Booshan, Product Manager, E-ChainSystems® & ReadyChains®, igus (India) Private Limited; Phone: +91-80-49127880 (Direct); Email: Harish@igus.in; Website: www.igus.in

Seco expands Precimaster Plus™ system for high-precision reaming

Seco has expanded its Precimaster Plus high-precision, indexable-head reaming system to include new shanks featuring built-in floating and adjustability. These new options further strengthen the system's potential benefits by improving hole surface finishes, eliminating runout and correcting for misalignment without the use of special toolholders.

The new PMX-FL and PMX-AD shanks use compact internal systems to providing floating and adjustability. This minimises overhang by allowing the reamers to be positioned closer to the machine spindle noses when compared to the tra-

ditional special toolholders required for these functionalities.

The unique built-in floating system applies to both static and turning-machine reaming applications and is purely mechanical, resulting in higher stability than the rubber or elastomere-type technology found in other toolholders on the market that are intended to provide similar performance. Additionally, the internal adjustment on the PMX-AD for rotating applications is mechanical and uses six screws to provide precise settings, correcting for spindle runout of less than 0.005 mm.

Precimaster Plus is Seco's high precision modular reaming system that maintains high accuracy and reliability while providing economical performance. The system's diverse range of shanks and heads provides the flexibility needed to optimise a wide variety of reaming applications.

The new PMX-FL and PMX-AD shanks are available in diameters ranging from 10 – 60.5 mm.



For more information, please contact a local Seco representative or visit <http://www.secotools.com/precimasterplus>



Tailor-made recipe for success

The composition of the new GENIS 2 grinding wheels from TYROLIT can be adapted to individual requirements, providing valuable potential for the optimisation of grinding processes.

The GENIS grinding wheel product line with vitrified bond and CBN abrasive grains are extremely popular, particularly in the automotive industry. Numerous crankshafts, camshafts, balancer shafts and transmission shafts, as well as fuel injection components, etc. are today produced using these grinding wheels. Depending on the application, the GENIS grinding layer is applied to the cores in a segment or ring shape, enabling adaptation of the grinding layer to numerous geometries.

Moreover, GENIS grinding wheels are available with a variety of core materials. Steel is seen as an inexpensive option where the wheel is subject to heavier loading. Lightweight versions are available in aluminium, or in carbon fibre (CF) as an ultra lightweight option, which significantly reduces the overall grinding wheel weight and is suitable for very high speeds. In addition to the material variations, a high-precision package can be ordered, which receives special treatment throughout the production process and is precision-balanced before leaving the factory. This additional package is ideal for machines without an integrated balancing device as here, tool changing times are reduced significantly.

GENIS 2 expanded fields of application: Despite the versatility and high grinding power of GENIS grinding wheels, there still remain applications which have not been optimally catered for to date. The consistent further development of the bond system and the expertise gained during the implementation of customised specifications has culminated in the GENIS 2 product line, which covers an even broader range of grinding applications than was previously possible, while also improving cutting performance, cycle times and wheel life. Gunter Steckel, Product Development Manager Ceramic Abrasives at TYROLIT, explains the development approach: “The objective with this new product was to develop a bond system that achieves good mechanical properties, combined with manufacturing stability, with an extremely low bond content. A further task was to further

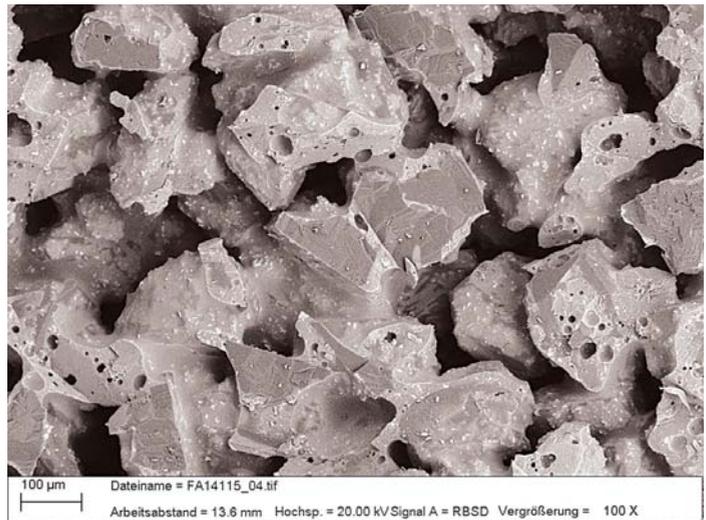


Frontal Genis 2 (source: TYROLIT)

improve on the existing tolerance limits.”

The results of this lengthy development work are truly remarkable. “The bond strength has been increased by a further 25 percent compared to the already successful GENIS bond,” says a delighted Gunter Steckel regarding the successful development. “This increase in bond strength can be utilised to meet the required trend towards increase wheel porosity and thus produce a freer cutting tool specifications. Furthermore, the fact is that greater grain fracturing is generated, which is a reflection of the excellent adhesion of the new GENES 2 bond with regard to the CBN abrasive grain.”

The application-specific design of the grinding wheel is further improved by the low shrinkage factor of the GENIS 2 bond system.



Optimum moistening of the GENIS 2 grain/bond matrix (source: TYROLIT)

The secure bonding of the CBN abrasive grains in the grinding layer ensures that the breakage occurs in the grain itself rather than it breaking out from the bond matrix. This results in a self-sharpening effect of the abrasive grain, which in turn ensures a sustained higher cutting ability of the GENIS 2 grinding wheels. Owing to the higher adhesion strength,

See next page



a lower bond volume is also necessary. This means that the new grinding layer can be more porous, offering greater scope for chip transport and coolant supply. The wheel is therefore characterised by particularly cool grinding.

Customer benefit: The adaptability of the GENIS 2 specification to a variety of applications: GENIS 2 opens up a broad range of options for TYROLIT application technology to adapt the specifications of the grinding wheels to the individual requirements of the respective customer: Depending on the material being ground, grinding machine, coolant delivery and process parameters, the TYROLIT application engineer is able to bring together the optimum combination of each of the GENIS 2 components. These can then be manufactured serially as customised grinding wheels for the relevant customer. Tim Lorkowski, Application Engineer CBN Tools at TYROLIT, explains: "Adaptation of the design in subtle ways allows us to increase the accuracy of the specification. This, in turn, enhances the optimisation potential for existing grinding processes."

In addition to the previously mentioned options for individual adaptation, it is also possible to select a high-precision grinding wheel version with the GENIS 2 grinding wheels. These grinding wheels are configured for minimum unbalance values throughout the entire manufacturing process. Moreover their true-running characteristics during use are further improved through additional features such as a gauge collar, ground contact surfaces etc. Here again, these narrow production tolerances of the GENIS 2 wheels reduce the set up times at the machine.

As the high-quality GENIS 2 cores can also be reused several times, GENIS 2 grinding wheels can upon request be designed with a blue neutral zone, which separates the active CBN grinding layer from the core. Thanks to this clear visual

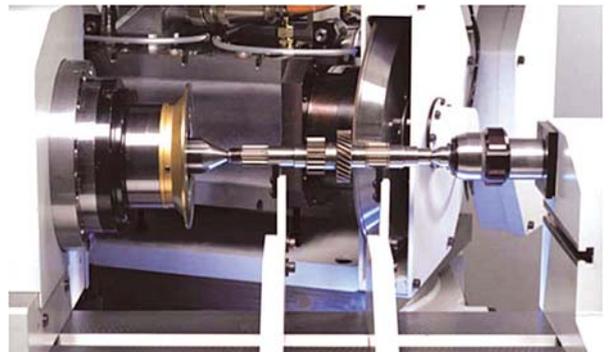
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Gunter Steckel,
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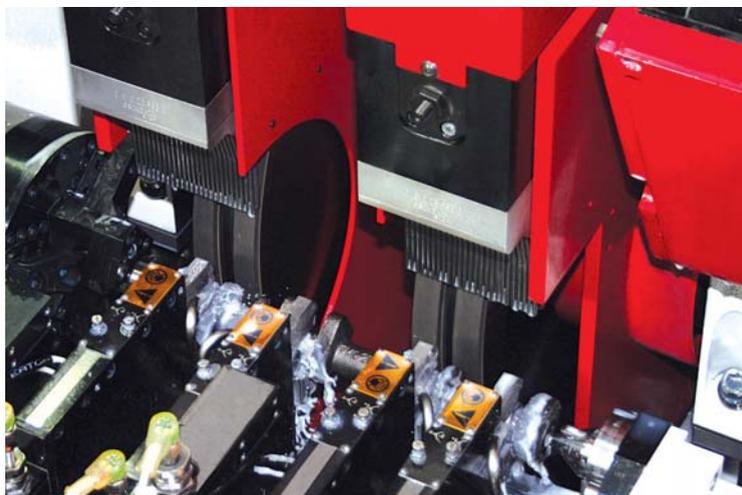
separation, the GENIS 2 wheels can be removed from the machine in time after optimum utilisation of the CBN layer, before the neutral zone has been spent and the cores become damaged. This ensures a significant reduction in capital expenditure when grinding wheels are used in series production.

GENIS 2 pushes performance limits even higher: GENIS 2 grinding wheels not only extend the field of vitrified bonded grinding wheels with CBN abrasive grain, but also significantly push the performance limits higher in terms of surface finish, cycle times and tool life. During the grinding of passenger car camshafts, for example, the cycle time was reduced by 20percent and the dressing cycle lengthened by 30percent, which was the main focus of the customer due to the high unit volumes involved. In another application, the grinding time was shortened to such an extent with GENIS 2 that eight plunge cuts could be achieved in the

same time period as previously only four had been ground. Tim Lorkowski also has many success stories to tell regarding GENIS 2: "Depending on the application, wheel life, part



Peel grinding operation with GENIS 2 (source: TYROLIT)



GENIS 2 during camshaft grinding (source: TYROLIT)

quality and processing times have been massively improved thanks to the increased cutting ability. During the processing of crankshafts for trucks made from a difficult-to-grind C38 material on Junker machines under emulsion, for example, the dressing cycle was improved from 16 to 28 shafts. Today, the customer has fully converted to GENIS 2 and significantly improved his capacity."

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Website: www.tyrolit.com; facebook.com/TYROLIT



Horizontal & Vertical Honing machines

Wendt India with the technical collaboration from Delapena, UK offers competitively priced fully programmable, computer controlled Horizontal & Vertical Honing machines.

Horizontal Spindle Honing Machine

1. E Series - E 1000S & E 2000S

Some of the exclusive features

- Variable spindle rpm
- Adjustable stroke speed & expansion through servo drive
- Siemens NC controller with user friendly touch pad
- Precise, efficient, repeatable honing on through and blind bores
- Safe interlocking door with electric sensor for operator safety
- Storage capacity for 100 pre-programmed processes



E Series E1000S & E2000S

Vertical Spindle Honing Machine

1. E Series - E 3500

Some of the exclusive features

- Adjustable expansion and stroking speeds through servo drive
- Variable spindle rpm
- Siemens NC controller with user friendly touch pad
- Precise, efficient, repeatable honing on through and blind bores
- Accurate and repeatable stroking movement
- Programmable length and frequency of short stroking



E Series E1000S & E3500S

Application areas:

Fuel injection parts, Rocker arm, Con-rod, Gears, Fork shift-er, Dies, Aerospace components, & various Sleeves / Bushes.

Key Specifications

Parameters		E 1000S	E 2000S
Dia. Range of job	mm	1.14 – 25	1.14 – 120
Max. Stroke length	mm	300	320
Spindle motor power	kW	1.5	3
Spindle speed	rpm	200 – 2500	150 – 3500
Stroking motor power	Nm	3	4
Stroking speed	m/min	1 -25	1 - 25

Key Specifications

Parameters		E 3500
Dia. Range of job	mm	3 – 25
Stroke length	mm	2 – 500 with 0.1mm increments
Stroking speed Fully adjustable	m/min	1 -25
Short stroking		Fully adjustable length and frequency
Spindle speed Fully adjustable	rpm	150 – 3500

Application areas

Gears, Valve spool, Sleeves & Bushes, Aerospace Components, Fuel injection parts, Gun Barrels wherein precision & weight are the deciding factors.

RSP3-6 scanning probe for the REVO® multi-sensor system

Renishaw presents the RSP3-6 extended reach scanning probe for use with the REVO 5-axis measurement system on co-ordinate measuring machines (CMMs). The RSP3-6 probe provides enhanced capability for accessing and inspecting features deep within bores by combining long extensions of up to 800 mm with REVO's 5-axis movements. RSP3-6 is ideal for inspecting large parts, such as engine blocks and components for heavy machinery used in the construction, mining, automotive and defence industries.

The RSP3-6 system consists of a probe and a range of stylus holders, for applications requir-



ing straight and cranked extensions. The RSP3-6 probe is automatically interchangeable with all other probe options available for REVO. This flexibility means that the optimum tool can be selected to inspect a wide range of features, all on one CMM platform. The RSP3-6's straight stylus holders offer extensions up to 800 mm from REVO's A-axis centre of rotation, and its cranked stylus holders offer extensions up to 600 mm from the same reference point. The probe can be used for both 3D touch-trigger and 2D scanning applications.

For more details, www.renishaw.com



Over 1000 new tools for successful machining

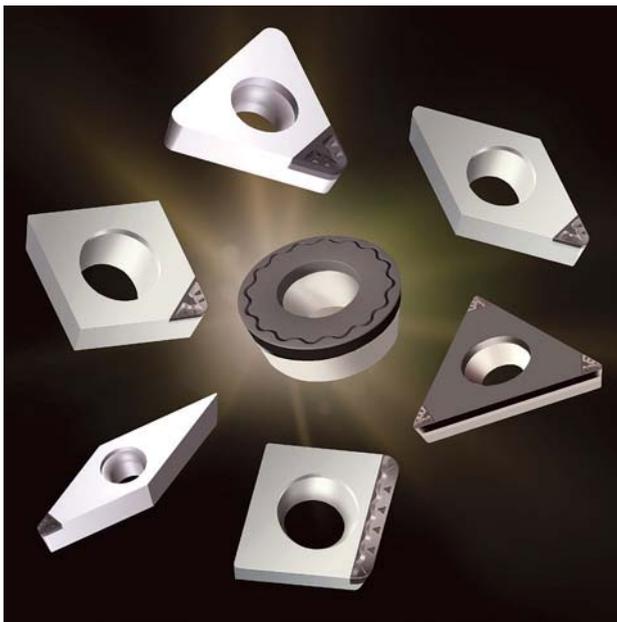
The KOMET GROUP showcased a wide range of innovations under the slogan 'THE CUTTING EDGE – Solutions for the best performance' at EMO Milano 2015.



P01_KOMET_milling_new tools

With its new full range of indexable insert milling cutters, which now comprises several hundred variants, KOMET® is a leading technology provider.

Picture: KOMET GROUP



P02_KOMET_ISO-PKD-indexable inserts_collage

By using laser machining, the KOMET GROUP has increased the performance capability of its ISO PCD indexable inserts and has extended its range to now encompass 900 variants. Picture: KOMET GROUP

The highlight of the show for the KOMET GROUP was the extended range of indexable insert milling cutters, accompanied by many new diamond indexable inserts and new tools from the fields of drilling, reaming and threading. Over 1000 additional precision tools have been added to the KOMET® product range. In addition to its well-known innovative tools for high-precision drilling, reaming and threading, the KOMET GROUP now boasts a wide range of high-performance milling cutters. Alongside the well-established KOMET® Quatron hi.feed, KOMET® hi.aeQ and KOMET® hi.apQ milling cutter lines, six more indexable insert milling cutter systems (four single-sided and two double-sided indexable inserts) are now available ex stock.

Some examples: The new KOMET® milling cutters include the KOMET® Q55-KCM (KOMET® copy-milling) copy miller that is particularly suitable for machining turbine blades, but can also be used very universally. The 45° KOMET® Q63-KFM (KOMET® face-milling) face milling cutter is also part of the new product range. It is designed for face-milling operations with a cutting depth of up to 6.5 mm and a tooth feed of up to 0.5 mm. The KOMET® Q56-KHF (KOMET® high-feed) face-milling cutter is a particularly efficient tool. It was designed for high-feed applications and achieves a very high chip volume per unit of time. Its angled cutting edge also achieves optimum surface quality. The KOMET® Q43-KSM

(KOMET® shoulder-milling) shoulder milling cutter produces shoulders that are step-free and are exactly 90° as a result of its soft-cutting geometry.

With over 70 indexable inserts featuring different topographies, substrates and coatings, which can be combined with 60 different basic body designs, KOMET® now has a full and varied product range, ideal for handling all milling tasks, from face, shoulder and chamfer milling to straight, 45° and T-slot milling, circular and plunge milling, angled plunge milling and free-form milling.

The range of ISO indexable inserts with diamond cutting edges has also experienced huge growth and has been extended to more than 900 items. In addition to KOMET® PCD products, CVD thick film diamond-tipped inserts can now also be supplied. All variants are manufactured using the latest production technology, such as laser machining and high-vacuum soldering, which results in high-quality cutting edges and variable geometries as well as improved cutting results and longer tool life.

Indexable insert reaming for small diameters

Indexable insert technology has revolutionised reaming with multi-blade reamers and has set new standards for precision and functionality. KOMET® therefore introduced the KOMET REAMAX® TS Duo to extend the range of these tools to



be compatible with smaller diameters of down to 42 mm. The range of solid carbide reaming tools has also been extended: The KOMET® Fullmax ‘Champions’ with the ISO designations P, S, M, K, N and H are adapted to specific materials and offer a significant increase in performance compared to the universal reamer.

New lightweight bridges made from aluminium were developed to extend the KOMET MicroKom® hi.flex precision drilling system. They are characterised by their low weight and high rigidity and, with four variants, cover a range of diameters from 210 to 365 mm. This means that they are an ideal extension of the previous 6 to 215 mm diameter range of the KOMET MicroKom® hi.flex. The KOMET® MicroKom BluFlex® precision adjustment head, equipped with state-of-the-art wireless networking, has an identical interface and can therefore also accommodate the new aluminium bridges.

HSS taps with carbide strips were only available as special tools until now. The KOMET JEL® GG HML tools are now available ex stock and in the sizes M6 to M12 as standard in the catalogue. These taps combine the benefits of a flexible HSS shank with the advantages of a hard carbide cutting edge. They can thus compensate for slight alignment faults and, at the same time, achieve long tool life. The



B03_KOMET_JEL GG HML
Flexible shank and hard cutting edges: The KOMET JEL® GG HML is recommended as a threading tool for GJV and GG cast materials.
Picture: KOMET GROUP

KOMET JEL® GG HML taps are achieving particularly good results in machining grey cast iron (GG) and vermicular cast iron (GJV).

Service brand marks a milestone

In addition to its new tools, the KOMET GROUP, a single-source supplier of precision tools, also offers numerous additional services, for example through its service brand KOMET® BRINKHAUS. The subsidiary develops, produces and markets monitoring and control systems for machine tools. The highlight of the range is the KOMET® BRINKHAUS ToolScope system, which provides high-end technology in process and machine monitoring. Firmware version 10 marks a milestone in relation to the Industry 4.0 concept. This is because it has turned ToolScope into a comprehensive KOMET® assistance system for production machining. It includes a large number of applications, known as apps, which make it easy for users to access and utilise the machine and process data recorded.

An important addition to the customer-oriented range of tools is provided by the second service brand: KOMET SERVICE®. A network of highly-qualified KOMET SERVICE® partners, linked together in a franchise system, provides a professional regrinding service, reliably and at short notice, and is also responsible for the sale of solid carbide, carbide-tipped and HSS standard tools from the KOMET GROUP. Even special tools can be procured through these partners. The network now extends over the whole of Germany and is undergoing significant expansion in Europe and abroad. There are already KOMET SERVICE® partners in Austria, France, Sweden, the Czech Republic as well as the USA and Canada.

-  Automatisches Werkzeugwechsellog
-  Automatisches Schichtenbuch
-  Cloud Datenbank Funktion
-  Qualitätsüberwachung / Dokumentation
-  Prozessoptimierung als Service
-  Zustandsüberwachung / Machine-Health
-  Kollisionsüberwachung
-  Werkzeugüberwachung
-  Adaptive Vorschubregelung
-  Verschleißüberwachung

P04_KOMET_assistance system_TS-Apps-Compositing
 With the introduction of firmware version 10, the ToolScope monitoring system developed by KOMET® BRINKHAUS has become a comprehensive KOMET® assistance system for production machining. It includes a large number of applications, known as apps, which make it easy for users to access and utilise the machine and process data recorded. *Picture: KOMET GROUP*

*For more details, contact:
www.kometgroup.com*

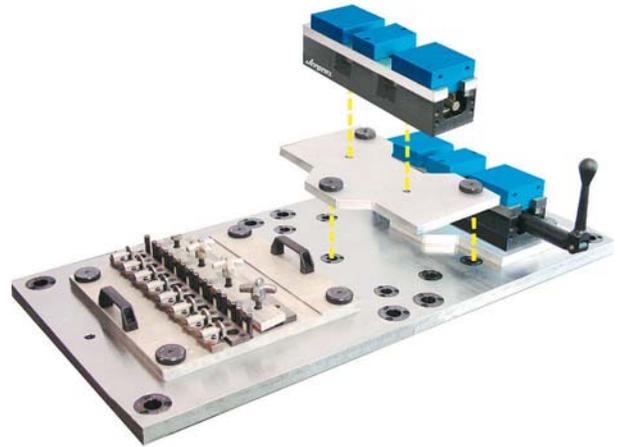


Quick Change Ball Lock Mounting System

The Ball Lock Mounting System provides a method of quickly and accurately locating fixtures on to machine tables. The Ball Lock Mounting System has done for machining centres what the Japanese SMED concept did for presses. Ball Lock system makes possible SINGLE MINUTE EXCHANGE OF FIXTURES, with position repeatability of +/-0.013 mm from changeover to changeover. Fixtures can be exchanged between different machines as well.

The system comprises of three parts: a Locating Shank, a Liner Bushing and a Receiver Bushing,

Install a subplate with receiver bushings on your machine table; add your fixture plate with two locating liner bushings; then insert two locating shanks through the liners and into the receiver bushings to provide accurate location. 2.5 turns of the set screw provides positive holding force. Additional Ball Lock Shanks are inserted through clearance holes in to the fixture plate and set screws tightened for additional holding force distributed across the holding force. Available in sizes ranging from 13mm to 50 mm with a holding force from 2.7 KN to 67KN per shank.



Result: Dramatic reduction in set up times.

For more information, contact: Joseph P Killukan, Jergens India Private Limited; Phone: +91-22-27572998 / +91 9867560133; Email: jpk@jergensinc.com; Website: www.jergensindia.com

The new jaw module generation - a multitasking modular system



Hainbuch presents a jaw module that is small, flexible, that can be quickly changed, and covers a large clamping range. And best of all: Together the two partners, Spanntop chuck and jaw module, do not just result in a jaw chuck, they become a quick change clamping solution for all situations. Mandrels and clamping heads can also be used in the basic unit. The new jaw module completes the circle and gives a new clamping dimension that opens up even more possibilities for users. All this with less weight and a smaller interference contour and the usual Hainbuch accuracy. In short: The perfect 3 in 1 combination - I.D. clamping, O.D. clamping, and jaw clamping.

Small, but still powerful with no compromises: The Hainbuch solution, consisting of a chuck and a jaw module, has nothing in common with the large, heavy, energy sapping big jaws that can be found in many machine shops; where their size is more of an obstacle than an advantage. These heavy chucks put load on the machine spindle and are slow to accelerate and decelerate losing time and using energy. This takes longer for the part to be produced and hence makes it more expensive and also wears the machine bearings out quicker.

Let's assume that someone purchases a lathe/milling machine with spindle taper DIN A2-6 65mm bar capacity, here the workpiece range is usually diameter of 10 to 200 mm. To cover that range a machine with a 215 jaw chuck is purchased. However 80% of the components are in a clamping range of 100 mm and smaller. And here the dilemma arises that in practice you have to cope daily with: Large clamping device - small workpiece. It is difficult to get all of the tools in place, often the tools will not reach center line and often special tools are required with longer reach increasing vibration and losing accuracy, also there is a high risk of collision.

Multitasking hero? We think so! Hainbuch modular solutions make sense and they are just as capable of multitasking as are today's machine tools. The formula is simple: Small workpiece = small clamping solution. Using the new small jaw module, about 80% of usual components are covered, and for larger components it can be easily changed over to a large jaw module within 30 seconds.

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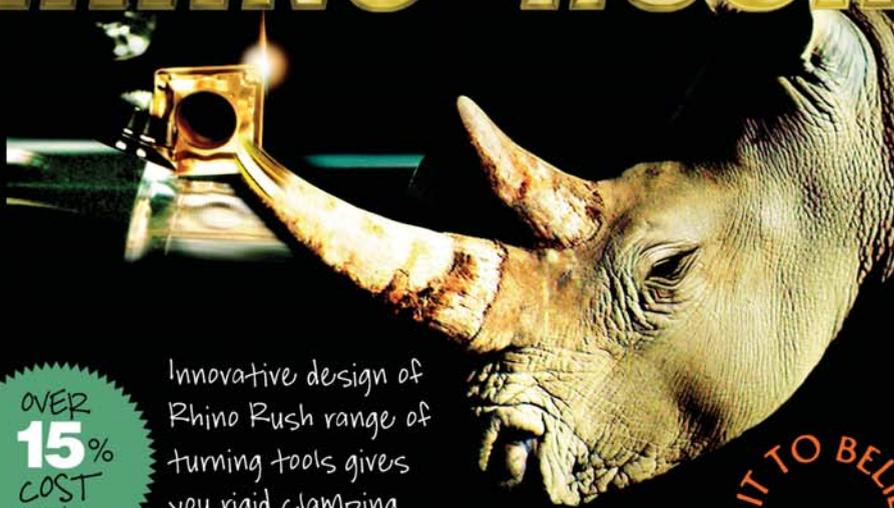
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