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Standardisation Is Must

Our small and tiny industries play a significant role in the national economy. Literally, they offer the breeding ground to innovative product ideas. But often they fail to win in the market – mainly because of lack of holistic vision. Not only the innovative product idea, but also the modern production process (starting from design) and innovative supply chain strategy altogether bring business success.

Undoubtedly, in this era of fierce global competition these Indian manufacturing companies have to reengineer their entire operating procedure to counter the challenges arising out of quality management, lead time reduction, plant flexibility and efficiency of supply chain.

Whether in B2B or B2C space, huge pressure is mounting on these small and tiny manufacturing industries from their consumers. Renewability of relationship depends on the combination of reliability and competitiveness. A perfect balance of these two aspects helps in maintaining consistency and keeping commitment. However, many such manufacturers often slip here – simply because there is no standardisation. They are still not paying enough attention on standardisation in raw material planning and purchase; product and

process design; distribution and exploring new business territories.

There is an ongoing thought that automation and IT will help in addressing most of the challenges that the small manufacturers face. Well, that is very true. However, for many such companies, the processes (conception to delivery or distribution of goods) are so varied and based on thumb rules, suddenly automation and IT cannot work there without standardisation. Secondly, there is hardly any awareness of utilisation of modern techniques and technologies. Also, as the production is focused towards somehow catering to a handful of companies (or users), the target fulfillment is the priority there, and hardly there is any aim for improvement, expansion and diversification.

The time has come when large companies are pushing their suppliers to follow the standard procedures. In B2B space, all B2B customers wish their vendors to follow standard procedures, so that they can ensure high quality, consistency in their products. In B2C space it is the pressure directly from the conscious consumers.

So, standardisation in all areas of operation is inevitable for these manufacturers. That will make them future-ready, in the sense to adopt automation and absorb best advantages of IT, which will definitely push them towards business success. ■



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Cover Design: Raj Verma

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L&T, AVEVA sign teaming agreement

Larsen & Toubro Integrated Engineering Services (L&T IES) and AVEVA have entered into an agreement that will enable Owner Operators and EPCs to take advantage of their highly complementary skills in the delivery of integrated information management solutions and associated asset data cleansing services.

They will work together on a number of joint opportunities - where the combination of L&T IES' asset data collection, cleansing and validation service complements AVEVA's suite of



Dr. Keshab Panda, Chief Executive, L&T IES

proven enterprise solutions. The combined service will enable clients to fully exploit their information assets and achieve business benefits by mitigating operational risk, improving project schedules and reducing maintenance and operational costs.

This agreement reflects the growing awareness in engineering, design and operations - that a successful Information Management solution must combine (innovative technology) with high integrity of asset data delivered through information engineering services.

Commenting on this partnership, Dr. Keshab Panda, Chief Executive, L&T IES, said, "We are delighted to announce this agreement with AVEVA. Our aim is to develop relationships that drive business growth for all parties and we are highly confident that together we can deliver maximum value to our partners and clients through this alliance." ■



ITC becomes first PTC's ATP in India

ITC Infotech, a global IT services and solutions company, has been the first Authorised Training Partner (ATP) for the technology solutions company PTC, in India. Under this agreement, ITC Infotech will provide to customers, training services on PTC Windchill PLM software and curriculum related to other products - through in-centre and onsite training classes.

As part of the ATP programme, ITC Infotech has set up a state-of-the-art training centre at its ITC Infotech park campus in Bangalore. As the exclusive ATP of PTC in India, ITC Infotech will

(LtoR) Eduarda Camacho, VP, PTC Global Services; V. V. Rajasekhar, Sr. VP, ITC Infotech, Jeffrey Wilmot, India Country Manager, PTC Global Services; and Ashwani Maheshwari, CEO, India Business, ITC Infotech at the launch of ATP programme

provide the full range of training services on all PTC Windchill modules, which will help professionals enhance their careers - and lead to a highly skilled pool of resources for the entire PLM industry.

Through this ATP programme, the target customer base will have access to PTC's training material and methodology and course completion certification. Training will be delivered using experienced instructors approved by PTC.

Certification requirements will vary from course to course, and will be established by PTC University, based in Needham in USA. The learning solutions under the ATP programme are completely scalable, and can focus not only just on the training needs of a single user - but can also address diverse requirements of an enterprise. ■

AIA organises automation show in Mumbai

Automation Industry Association (AIA) and Messe München International India (MMI India) will jointly organise the first ever, world class automation show, IATF 2013 - International Exhibition & Conference on India's premier platform, with several global majors launching new products and solutions.

The event is scheduled to take place between 1-3 February 2013 at Bombay Exhibition Centre, Mumbai. It will witness participation from over 50 companies and a visitor prospect of over 7,000 business professionals. Some of the key exhibitors showcasing latest technologies include Siemens, Larsen & Toubro, Emerson, Rockwell, B & R Automation, Hitachi, Kuka, Turck, Chemtrols, Forbes Marshall, Baumer and Mitsubishi.

Concurrent activities at the event will include a novel 'Innovation Exchange' and a Technical Workshop that will

be conducted by Foundation Fieldbus India Committee, Profibus & Profinet Association, India Smart Grid Forum and high powered CEO Round Tables, covering various industry verticals.

In the words of Nandakumar, President, AIA, "Through IATF, we intend to ignite the passion for continuous innovation amongst the various stakeholders of the Automation sector. The event will showcase state-of-the-art Automation technologies in Process, Factory, Electrical, Robotics, Machine Vision, Material Handling Systems, Sensors and many more fields. IATF will provide a net-working platform for visitors - especially SMEs to experience world-class Automation Solutions, acting like a catalyst to encourage innovation, boost productivity and enhance global competitiveness." ■

Honda opens new technical centre

Honda has reinforced its commitment for India as a priority market for the world. In a first ever across all operations globally, the new Technical Center combines integrated system of DEBQ (Design, Engineering, BOP/Purchasing and Quality) under one roof to create a globally optimal operating system, which advances local development of higher quality product at low cost.

Spread over 10,000 square metres, in HMSI Manesar facility, the new technical centre engages 200 engineers from Honda Research & Development India (HRDI) and HMSI associates.

In another first for the Indian motorcycle industry, Honda's new Technical Center houses the advanced 'Wind Tunnel' facility, which simulates real world air flow situation to monitor

aerodynamics and its effect on models to develop truly fuel efficient two-wheelers. The facility's engineering and styling design also incorporates benchmark equipment like chassis dynamo, bench dynamo, layout machines, SEM microscope etc.

Traditionally, Honda R&D is operating as a separate entity across all motorcycle, automobile and power product divisions globally. Undertaking a major paradigm shift, the new technical centre is the first step by Honda towards a new form of global operations.

Reinforcing its commitment of spearheading innovation in two-



In a first ever across all operations globally, Honda's new Indian Technical Centre combines integrated system of DEBQ (Design, Engineering, BOP/Purchasing and Quality) under one roof.

wheeler industry, Honda Motorcycle & Scooter India (HMSI) - the only motorcycle company of Honda in India - has now forayed in the field of cutting-edge R&D & technology for realising the dreams of Indian customers for mobility. ■

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New centre to serve process utilities



(LtoR) Dr. BVR Mohan Reddy, CMD and Ashok Reddy, President Global HR and Corporate Affairs, Infotech Enterprises

Infotech Enterprises has recently inaugurated its seventh Indian Development Centre at Kakinada in Andhra Pradesh. Chief Minister of Andhra

Pradesh, N. Kiran Kumar Reddy, and Union Human Resources Development (HRD) Minister M. M. Palam Raju were present in the inaugural function at the new development centre in Sarpavaram SEZ.

The five acre sprawling campus houses the development centre building with a built up area of 52,000 square feet. The centre will deliver cutting-edge solutions to customers primarily in the Oil & Gas, Energy and Utilities industry. It currently has 650 seats and employs 850 professionals. The company has plans to ramp up

this facility to 1500 seats and employ 2000 professionals by 2014. The center will constitute over 95 per cent local and 30 per cent women employees.

Commenting on the occasion, Dr. BVR. Mohan Reddy, Founder and Chairman, Infotech Enterprises, said, "It is an extension of the strategy to grow inclusively by expanding operations in Tier-II cities. The centre will add a new perspective to Infotech's Indian operations and will help deliver high-value services competitively. It will also help boost the local economy by generating employment opportunities."

Contextually, Infotech Enterprises provides engineering solutions, including product development and life-cycle support, process, network and content engineering to major organisations worldwide. ■

CG acquires Karma's lighting division

Crompton Greaves (CG) has entered into a definitive agreement with Himachal Pradesh-based Karma Industries to buy the latter's Compact Fluorescent Lamp (CFL) manufacturing business. The operations, located in Baddi, Himachal Pradesh, are dedicated to manufacturing CFL products. This business, which will double CG's capacity in the fast-growing CFL segment, will be integrated with the CG's Consumer Business unit.

Laurent Demortier, CEO & MD, CG, said, "I am pleased to welcome the Karma family to CG. This acquisition reinforces our presence in the rapidly growing Indian consumer market. The state-of-the-art facility can manufacture two million lamps per month, not only providing us with immediate capacities but also allowing us to offer a complete range of CFL lamps."

Ash Gupta, President Consumer Business, CG, said, "I am pleased to acquire an advanced manufacturing set-up employing 51 people. Spread across 4,500 sq m, the facility will enable us to better serve our customers and channel partners with high quality products." ■

substantial 10 gigawatts (GW) is expected to come online by the end of the decade.

CCS refers to the technology of capturing carbon dioxide (CO₂) before or after the combustion of fossil fuels (gas or coal), transporting it and pumping it into underground geological formations. This process prevents large quantities of CO₂ from being released into the atmosphere by securely storing it between impermeable rock or similar material.

China, the US, Australia, Japan, Norway, the Netherlands and the UK have all invested heavily in CCS Research and Development (R&D) activities and are the global leaders in the industry; however, there are currently no large-scale CCS demonstration projects active for coal-fired plants.

Governments around the world are showing a lack of commitment in significantly reducing fossil fuel consumption, and so CCS could prove the most realistic answer to one of the greatest predicaments of our time. However, Global Data's report states that this technology must be employed much more widely in order for CCS to make the level of impact its potential suggests. ■

Potential pollution mitigator lacks attention

Although currently negligible in prominence, Carbon Capture and Storage (CCS) could be the technology that makes the world's carbon emission reduction targets achievable, say research and consulting firm GlobalData in their latest report.

As the report explains, carbon storage techniques, such as enhanced oil recovery, have been used in the energy

sector for decades, but only recently has the concept of long term carbon storage been viewed as a viable means of reducing the amount of carbon released into the atmosphere from power plants.

Correspondingly, a modest 238 megawatts (MW) of CCS capacity was installed globally as of the end of 2011, but according to current government plans and other initiatives, a far more

Thermax's CEO receives award

M. S. Unnikrishnan, MD and CEO of Thermax has been honoured with the Asia Innovator Award at the 2012 Asia Business Leaders Awards (ABLA) instituted by CNBC to acknowledge exceptional CEOs across the region.

The award has been given to Unnikrishnan in recognition of his 'inventive thinking in business and his leadership in an organisation that has innovation at its core.'

The winners under various categories were selected from a list of 1000, narrowed down to a handful of Asia's best, after analysing company performances and conducting face-to-face interviews.

The eminent panel of judges was drawn from management strategists, academics, company leaders and executives from the CNBC. ■

WEL supports development in solar energy sector

Welspun Energy Ltd. (WEL) is partnering with Gandhinagar-based Gujarat Energy Research & Management Institute (GERMI) for the advancement of solar technology in India. The organisation will be setting up a lab at GERMI where different solar technologies will be studied for their performance in Indian terrain and climatic conditions.

The MoU was signed with Pandit Deendayal Petroleum University (PDPU), during the recently held Vibrant Gujarat's International Conference for Academic Institutions (ICAI) 2013. WEL has been stressing the need to develop indigenous solar energy research and study facilities. Results of these studies can greatly help IPPs like Welspun Energy in improving performance of their solar power projects.

The organisation will also be working closely with students. Welspun Energy will be designing and offering

internship programs to students of PDPU's Solar Program. With WEL's large solar and wind projects under development, it is expected that students participating in this internship programme will be able to witness the entire project development cycle of a clean energy power plant. Skilled manpower in this field is scarce and through such initiatives the organisation will be able to help students transform into specialised resources.

Vineet Mittal, Co-Founder & MD, WEL, said, "Solar energy industry in India is still young, with some amount of research carried out here for standardisation and technology selection. However, we need to be ready for the next phase of growth and that calls for a greater focus on research and building relevant skill sets in our young. As an extension to society, we want to support leading institutions in India and foster indigenous capability." ■



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Expanding into New Markets

Product lifecycle management (PLM) solution market leaders are entering new industries.

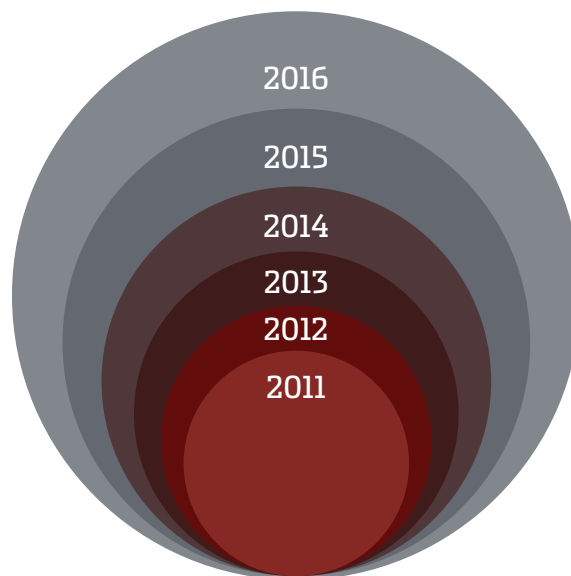
The primary influence on the Product Lifecycle Management (PLM) market in Asia for this reporting period (base year 2011) continues to be the emerging economies of Asia such as China and India. According to a new ARC Advisory Group study, overall, the PLM market is growing led by strong growth in the automotive and aerospace & defense industries, as well as penetration into new industries, such as shipbuilding, consumer goods and electric power.

PLM solution providers have experienced a robust rebound beginning in 2010, and extending through 2011, with 2011 marking record growth for some companies, and the overall Asia PLM market breaking through the \$2.2 billion boundary for revenues. The ratio – of new PLM software licenses to service (implementation, consulting and maintenance) for PLM – mirrors the traditional enterprise software to services ratio of 40:60 per cent. ARC expects this trend of more services to software to continue at the current levels through this forecast period.

Product lifecycle management solution providers will continue to aggressively penetrate into new industries. The traditional market share and highest adoption of PLM technology historically has been the discrete industries, such as automotive, aerospace & defence, heavy equipment, industrial fabrication & assembly, machine tools, and high-tech & electronics. These mainstay discrete industries that retreated during the economic downturn of '08 and '09 gave more impetus to PLM suppliers to look to non-traditional industries.

Solutions are now being readily adopted by a set of industrial verticals, such as medical devices, consumer goods, retail, ship building, energy genera-

Product Lifecycle Management Business for Asia



tion & utilities and AEC; and the adoption growth rates in these sectors reflect this trend. PLM suppliers are looking for growth in these sectors to fuel revenues as their business growth in the discrete industries matures.

According to G. Ganapathiraman, Country Manager, ARC Advisory Group India, and co-author of ARC's 'Product Lifecycle Management for Asia Market Research Study,' "Clearly, the market leaders in PLM, as well as many of the smaller suppliers are focusing well beyond their historical industry strengths and into the process and hybrid industries." He further says that these

PLM suppliers are leveraging advanced 3D modeling and simulation technologies to penetrate industries – such as ship building, energy & power, oil & gas, life sciences, construction & architecture, retail and even the fashion industry. ■

The mainstay discrete industries that retreated during the economic downturn of '08 and '09 gave more impetus to PLM suppliers to look to non-traditional industries.

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Growing Demand to Reshape BI Market



Scaling up of Business Intelligence (BI) and Analytics is must to support the robust growth in data sources.

Business intelligence leaders must embrace a broadening range of information assets to help their organisations. D. Yuen, Research Director, Gartner, says, “New business insights and improved decision making with greater finesse are the key benefits achievable from turning more data into actionable insights, whether that data is from an increasing array of data sources from within or outside of the organisation. Different technology vendors, especially niche vendors, are rushing into the market, providing organisations with the ability to tap into this wider information base in order to make sounder strategic and prompter operational decisions.”

▲ Vendors are rushing to provide organisations with the ability to tap into wider information base in order to make sounder strategic and prompter operational decisions.

By 2015, 65 per cent of packaged analytic applications with advanced analytics will come embedded with Hadoop: Organisations realise the strength that Hadoop-powered analysis brings to big data programs, particularly for analysing poorly structured data, text, behaviour analysis and time-based queries. While IT organisations conduct trials over the next few years, especially with Hadoop-enabled

Credit: www.photos.com

Database Management System (DBMS) products and appliances, application providers will go one step further and embed purpose-built, Hadoop-based analysis functions within packaged applications. The trend is most noticeable so far with cloud-based packaged application offerings, and this will continue.

“Organisations with the people and processes to benefit from new insights – will gain a competitive advantage as having the technology packaged reduces operational costs and IT skills requirements, and speeds up the time to value. Technology providers will benefit by offering a more competitive product that delivers task-specific analytics directly to the intended role, and avoids a competitive situation with internally developed resources.” says Bill Gassman, Research Director, Gartner.

By 2016, 70 per cent of leading BI vendors will have incorporated natural-language and spoken-word capabilities: BI or Analytics vendors continue to be slow in providing language- and voice-enabled applications. In their rush to port their applications to mobile and tablet devices, BI vendors have tended to focus only on adapting

their traditional BI point-and-click and drag-and-drop user interfaces to touch-based interfaces. Over the next few years, BI vendors are expected to start playing a quick game of catch-up with the virtual personal assistant market. Initially, BI vendors will enable basic voice commands for their standard interfaces, followed by natural language processing of spoken or text input into SQL queries. Ultimately, ‘personal analytic assistants’ will emerge that understand user context, offer two-way dialogue, and (ideally) maintain a conversational thread.

“Many of these technologies can and will underpin these voice-enabled analytic capabilities, rather than Business Intelligence vendors or enterprises themselves developing them outright,” says D. Laney, Research Vice President, Gartner.

By 2015, more than 30 per cent of analytics projects will deliver insights based on structured and unstructured data: Business Analytics have largely been focused on tools, technologies and approaches for accessing, managing, storing, modeling and optimising for analysis of structured data. This is changing as organisa-

tions strive to gain insights from new and diverse data sources. The potential business value of harnessing and acting upon insights from these new and previously untapped sources of data, coupled with the significant market hype around big data, has fueled new product development to deal with a data variety across existing information management stack vendors and has spurred the entry of a flood of new approaches for relating, correlating, managing, storing and finding insights in varied data.

“Organisations are exploring and combining insights from their vast internal repositories of content — such as text and emails and (increasingly) video and audio — in addition to externally generated content such as the exploding volume of social media, video feeds, and others, into existing and new analytic processes and use cases. Correlating, analysing, presenting and embedding insights from structured and unstructured information together enables organisations to better personalise the customer experience and exploit new opportunities for growth, efficiencies, differentiation, innovation and even new business models,” says Rita Sallam, Research Vice President, Gartner. ■

Pick Your Shades for Manufacturing Excellence

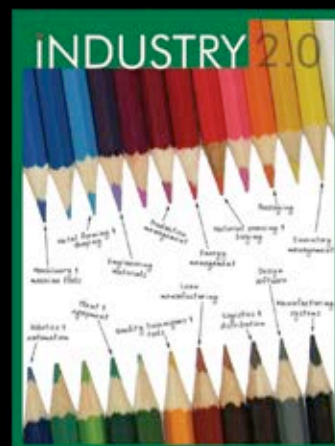


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Light-weight innovation

The recently developed shock-absorbing nickel lattice is in fact the world's lightest solid material, with a density of only 0.9 mg per cubic centimetre, which is not including the air in or between its tubes. All in all, the lattice is about 100 times lighter than Styrofoam. It can easily sit atop a dandelion seed head without harming it.

The material was developed by a team of researchers from the California Institute of Technology, HRL Laboratories, LLC, and the University of California, Irvine. The so called 'micro-lattice' was designed chiefly to absorb sound, vibration and shock, though HRL's research team is quick to point out other possible uses. These include applications involving lithium-ion batteries, air-cooling devices for computers, and the manufacture of cars, airplanes and spacecraft that require lightweight metals.

Amazingly, the structure consists entirely of hollow tubes of nickel. The assembly process involves fabricating a lattice of interconnected hollow tubes made of nickel-phosphorus with a wall thickness of 100 nanometres, or 1,000 times thinner than a human hair, explains Tobias Schaedler, a Research Staff Scientist at HRL Labs.

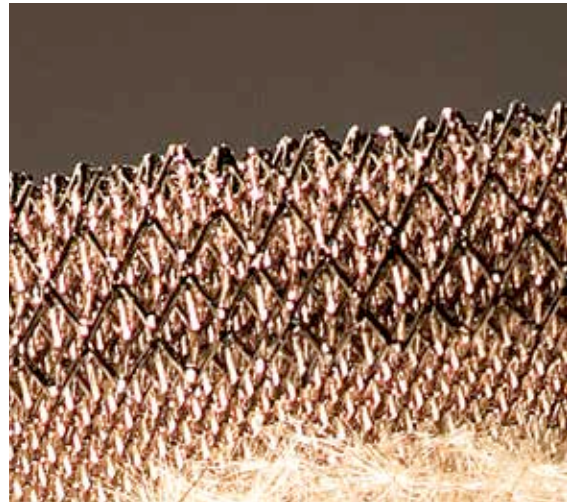
The design suggests a small-scale version of the Eiffel Tower, i.e., strong but consisting mostly of air. The lattice's hierarchical architecture allows it to recover almost completely from loads that compress it by as much as 50 per cent, translating into an exceptional ability to absorb energy. In this respect, the material is similar to elastomers, which are valued for their ability to withstand shock.

To make the micro-lattice, researchers use resin to create multiple, interconnected polymer fibres. The resin is then washed away and the fibres are coated with a layer of nickel. The fibres are then in turn dissolved, with only the lattice remaining. Nickel or nickel-phosphorus can be used in the construction process - because they

can be deposited conformally onto the polymer template using electro- or electroless deposition.

"As well, nickel has very high stiffness and, with appropriate conditions, can exhibit high strength," says Bill Carter, Bio and Nanomaterials Technologies Manager for HRL Labs. "Both properties are important - because of the post-process that enables the polymer to be removed without significantly damaging the deposited nickel or nickel-phosphorus."

The United States Defence Advanced Research Projects Agency (DARPA) commissioned the micro-lattice research project. The research team now has two to three years to develop



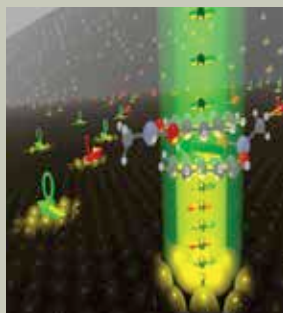
The density of the nickel 'micro-lattice' is so extremely low that it can easily perch on top of a dandelion seed head.

Credit: Dan Little © HRL Laboratories, LLC

and improve the material. The office of naval research has already asked them to devise variations that could withstand vibrations from blasts. ■

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New method of producing nanomagnets for IT



The layer system of cobalt (bottom) and organic molecules can serve to store magnetic information that is indicated in the image by ones and zeros. The green and red arrows show the orientation of the spin.

Researchers have found a new method of producing molecular magnets. Their thin layer systems made of cobalt and an organic material could pave the way for more powerful storage media as well as faster and more energy-efficient processors for information processing.

In order to boost the performance of computers and reduce their energy requirements, processors and storage media have become smaller and smaller over the years. But components that are too small are unstable, making them unsuitable for secure data storage and processing. One reason is that even one atom more or less can change the physical properties of electronic device components significantly. But, the exact number and arrangement of atoms can hardly be controlled in metals and semiconductors.

The team of researchers from Forschungszentrum Jülich, the University of Göttingen, Massachusetts Institute of Technology in the USA, Ruder Bošković Institute in Croatia and IISER Kolkata in India pursued a new strategy exploiting the unavoidable interactions between the molecules and their substrate in a targeted manner to produce a hybrid layer that exhibits molecular magnetism and has the desired properties. ■

Credit: Forschungszentrum Jülich

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Product development following ants' behaviour

How much time do you spend by watching ants around you? Have you noticed their ever-busy yet orderly march forward with little halts in between in a circular pattern?

Using computer simulations derived from the characteristics of ants seeking food, Dr. Kai Yang, Professor of Industrial and Systems Engineering in the College of Engineering, Wayne State University, has developed a mathematical model-based methodology to estimate the optimal amount of time spent to develop a product, as well as the cost, in overlapped product development. It is the latest in a series of projects he has worked on for Siemens North America.

"Non-discrete Ant Colony Optimisation (NdACO) to Optimise the Development Cycle Time and Cost in Overlapped Product Development," utilises the concept of Concurrent Engineering (CE), a systematic approach to product development based on parallel execution of tasks. The approach integrates several functions to reduce the development time and cost of a product while



Dr. Kai Yang, Professor of Industrial & Systems Engineering, College of Engineering, Wayne State University

maintaining its quality. Co-authors include Satish Tyagi, Wayne State Research Assistant, and Dr. Anoop Verma of the University of Iowa.

In CE, cross-functional teams communicate through several meetings, some before the beginning of project, categorised as precommunication, and some during execution of the project, called communication policy.

Because significant cost is incurred through those meetings, Yang said, it is necessary to investigate the cost-time trade-offs involved in the concurrent product development process to enhance work performance. Otherwise, applying the process can result in a larger number of iterations, or rework, adding to both time and cost.

"Currently, there is a lack of communication flow within organisations due to their large size, time differences etc. Therefore, the amount of precommunication and communication policy and the extent of overlapping stages should be meticulously determined to achieve the desired goals," Yang said.

As product development moves forward, lack of communication from upstream decision-makers to downstream workers can leave the latter to operate without the latest available information to complete their task efficiently, he added.

Researchers studying ants' food-foraging behaviour have noticed that changes in the pheromone trails left behind by the insects communicate the best ways for those that come after them to proceed. That led to the development of Ant Colony Optimisation (ACO) models, which Yang and his team are using.

The team believes their simulation model could reduce product definition time by as much as 50 per cent, and lead to best practices that improve critical thinking and remove communication barriers. Such practices can be applied to large-sector manufacturing, health care and service companies, Yang communicated. ■

New light on transparent contact electrodes



Dr. Klaus Ellmer

Today transparent electrodes are found almost everywhere – for example in flat screens, solar modules and

organic Light Emitting Diodes (LEDs). Mostly they are made of metal oxides like In_2O_3 , SnO_2 , ZnO and TiO_2 . As raw materials like indium are becoming more and more costly, researchers have begun to look for alternatives.

Metallic (Ag or Cu) or carbon based nanostructures exhibit many interesting properties that could potentially be exploited pending further research. Even graphene, a modified form of carbon, could turn out to be a suitable transparent electrode, since it is both transparent and highly conductive. These properties depend, to a large extent, on the material's composition: graphene, which consists of a single layer of carbon atoms arranged into a hexagonal 'honeycomb' grid, is two-dimensional, and, within these dimensions, electrons can freely move about.

Dr. Klaus Ellmer, the HZB scientist, says, "These new kinds of materials could be combined with more conventional solutions or find their way into entirely new areas of application." For this to become a reality, researchers have yet to come up with solutions to nanostructure problems like short circuits and continue to illuminate the relevant transport mechanisms. It would also be interesting to determine whether these two-dimensional 'electron gases' also form in materials other than graphene. Success ultimately depends on whether or not the new materials prove stable in the long run in their practical application and whether or not they can be produced relatively inexpensively. ■



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H.264 High Profile	Yes	Yes	NO	NO	NO
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▼ Environmental protection is a top priority at the plant operated by EvoBus in Neu-Ulm. For years, the facility has been carrying out numerous projects with the aim of developing environmentally friendly products and production processes. Such efforts not only help the environment but also reduce costs, as evidenced by the fact that the Neu-Ulm plant boasts the lowest energy costs per square metre of all Daimler commercial vehicle plants in Germany. This makes the plant a benchmark in the Group.



Sustainable Manufacturing in Indian Industries

Depletion of basic materials is currently a challenge for many manufacturing industries. Forward looking CXOs are realising that sustainable manufacturing is the need of the hour. **By Nitin Kalothia**

Sustainable Development (SD) is catching up quickly not only just across the globe - but also in India - not because it helps companies garner public and government support; it also strategically helps companies improve their performance. A few companies in India have stated that adopting sustainability has helped them improve their competitiveness. It is all about understanding sustainability issues across the value chain and identifying projects that will

bring business benefits along with reducing sustainability risks.

Many forward looking CXOs from manufacturing companies realise that this is the need of the hour, and the money spent on sustainability projects is not an expense but truly a long-term investment.

Understanding sustainability

Let us first understand, what Sustainable Development (SD) is all about. The most commonly accepted definition of sustainable

development is - development that meets the current generation's requirements without compromising the ability of future generations to meet theirs.

Economic development over the past few decades is already having a significant impact. Depletion of natural resources has impacted current economic development, human beings, flora and fauna and so on. Non-availability of drinking water is a big challenge across geographies today. Depletion of basic materials like coal, fuels, ores etc., is

Credit: (L) Mercedes-Benz Blog & (R) www.Photos.com



Renewable energy brings in power security for companies in the country that faces power shortage.

currently a challenge for many manufacturing industries in India. Core sustainability issues, which need to be addressed by manufacturing industries are - long-term raw materials and availability of other essential resources, energy, water and waste management, mitigating impact on ecosystem, supply chain sustainability and employee and society welfare.

Changing scenario

A look at some of the recent policies - towards improving sustainability adoption, notifications and trends - clearly indicates that we are moving in the right direction. The Securities and Exchange Board of India (SEBI) has already directed top hundred companies (by market capitalisation) to report their performance on Environment, Social and Governance factors as parts of their

annual performance reporting.

The Bombay Stock Exchange (BSE) has joined the UN's Sustainable Stock Exchange's global initiative. BSE along with five other exchanges globally has publicly committed to promote sustainable investment practices. The Ministry of Corporate Affairs has developed National Voluntary Guidelines (NVG) on social, environmental and economic responsibilities of business.

It is expected that all businesses in India, including multinational companies that operate in the country, would consciously work towards following the guidelines.

The Bureau of Energy Efficiency (BEE) has launched the Perform, Achieve and Trade (PAT) scheme with an idea of improving energy efficiency of our industries.

A clear focus from government bodies, investor community and other stakeholders towards

implementation of SD initiatives is seen from the above mentioned initiatives.

There are a handful of companies in our country that have been front runners in adoption of sustainability and have reaped its benefits. The sad news is that these numbers are very small to have an effect at the national level: they have not as yet touched the three-digit mark.

While the focus towards SD is changing for a few industries, many companies are still waiting for these notifications to become mandatory. There is a perception that we can still wait to look at SD since there are so many other priorities. Companies that have started their journey on SD are the ones that either see a clear benefit from the process or that face stakeholder, especially, customer or financial institution, need to go down this path.

Reason constraining implementation

There is a positive trend towards sustainable development initiatives implementation in our country driven by a handful of large organisations. Many medium and small enterprises are yet to start thinking in this direction.

There are many reasons for non-adoption of sustainable development initiatives by organisations; however, lack of awareness tops the list.

Educating corporates as to how these initiatives can bring business benefits to their organisations through cost cutting, eliminating potential future risks, reducing environmental and social impacts, developing eco-friendly and energy efficient products and services, will promote adoption by companies.

Additionally, initial high investments and long duration of Return on Investments (ROI) do constraint implementation of these initiatives in emerging and medium enterprises. Also, there has not been requirement in the

past from most of the stakeholders (shareholders, regulatory bodies, investor community etc.) for reporting performance on sustainability, and hence there has not been adequate focus from organisations in this field.

Changing expectations of stakeholders

Stakeholders are no longer interested in looking at only the financial indicators of the organisation, but would also like to know whether their respective businesses are doing well on other indicators of sustainability.

The investment community understands that an organisation may be doing well financially – but the impact it has on society and environment could also pose a risk to business sustenance. Hence, they are now keen to look at performance on these parameters – in addition to economic indicators before investing into an organisation.

The consumer are willing to spend on products that are eco-friendly and have a lower

A look at some of the recent policies towards improving sustainability adoption, notifications and trends indicates that we are moving in the right direction.

life cycle cost. Companies have identified opportunity for cost reduction by driving sustainability projects in supply chain and have started working with few key suppliers for adoption of sustainable development initiatives, though these initiatives are in their nascent stages.

The new generation employees are keen on working with organisations that are more environment-friendly and focused towards employees' safety.

Focus areas for Indian companies

It is not that Indian companies are not working on sustainability initiatives at all. It is just that efforts are very fragmented and not well aligned to future needs. Very few companies have looked at the long- and short-term sustainability challenges in the entire value chain, and identified areas that have maximum impact and risks.

The general trend is, 'let us start in a small way and then we will try to make the initiative holistic.' While these kinds of initiatives do bring benefits – their impact is relatively insignificant.

Companies in India are normally working towards sustainability elements that have signifi-

▼ A view of a gasifier plant and fuel from Bihar...



Credit: Saran Renewable Energy (India) and Ashden

cant impact on cost, regulatory requirements or public visibility. Say for example, energy efficiency and conservation, CSR activities, material yield improvement and so on.

Learning from the leaders

Companies that have mapped their environmental footprint and implemented projects towards its reduction have not only reduced adverse impact on the environment on account of their operations – but also have gained financially. Reduction in waste, emissions, resource consumption etc., have resulted in improving efficiencies and reduced manufacturing cost.

Many projects do not provide short-term cost benefit – but they help eliminate a long-term sustainability risk. For example, investment into renewable energy will normally have a return on investment period of 8-10 years, but it brings in power security for companies in the country that faces power shortage. Also, it helps where non-availability of fossil fuels poses a greater threat to power generation for the future.

Projects that have been taken up towards development of society after understanding the need of society and organisation – have resulted in bringing business benefits for the organisation. For example, a manufacturing plant in the western part of India would require an additional 2000 technical staff as part of its expansion plans in the next 5 to 7 years. Availability of technical staff is a challenge in this part of the country. Seeing this as a future risk, the company has tied up with the government to set up industrial training institutes in villages in close proximity to their factory. This has helped villagers as they have access to good technical education, and at

the same time the organisation has mitigated a potential long-term risk of non-availability of technical staff. Selection of projects to be taken up – under the umbrella of sustainable development – has to be logical to get the required business benefit.

The other important aspect is that target for improving sustainability indicators is driving innovations resulting in new efficient products and processes. For example, one FMCG company wanted to reduce use of water across the supply chain (suppliers, manufacturing and consum-

The initiative should be an integral part of the business instead of a standalone initiative. It'll be critical to identify issues that'll constraint long-term sustainability of the organisation. Challenges could be internal, external, or both. They could be related to resources, energy, waste management, manpower availability, supply chain sustainability, regulatory requirements, stakeholder demands or any other issues. Once these risks have been identified, goals should be defined and projects should be deployed for achievement of these targets.



ers) while manufacturing and using its products. This resulted in the creation of a product that consumes lesser water during clothes washing since the detergent leaves the cloth much faster compared to the existing product (its own and competitors, too). This also became a selling point for the organisation in water scarce geographies.

Way ahead

The way ahead for companies is to look at sustainability as a core part of the way they do business.

It would be ideal to link target achievement to employee performance. A reporting and review structure should be deployed for tracking and reviewing performance. SD initiatives have seen good acceptability amongst Indian manufacturing companies and are expected to remain a key focus area for future. ■

▲ Demand for eco-friendly packaging materials is increasing.



The author is the Associate Director, Manufacturing and Process Consulting Practice, Frost & Sullivan. Contact: caroline.lewis@frost.com

MAKING TIME MANAGEMENT THE ORGANISATION'S PRIORITY

To stop wasting a finite resource, companies should tackle time problems systematically rather than leave them to individuals.

By Frankki Bevins, Aaron De Smet

When a critical strategic initiative at a major multinational stalled recently, company leaders targeted a talented, up-and-coming executive to take over the project. There was just one problem: she was already working 18-hour days, five days a week. When the leaders put this to the CEO, he matter-of-factly remarked that by his count she still had "30 more hours Monday to Friday, plus 48 more on the weekend."

Extreme as this case may seem, the perennial time-scarcity problem that underlies it has become more acute in recent years. The impact of always-on communications, the growing complexity of global organisations, and the pressures imposed by profound economic uncertainty have all added

Imaging: Raj Verma



to a feeling among executives that there are simply not enough hours in the day to get things done.

Our research and experience suggest that leaders who are serious about addressing this challenge must stop thinking about time management as primarily an individual problem and start addressing it institutionally. Time management is not just a personal-productivity issue over which companies have no control; it has increasingly become an organisational issue whose root causes are deeply embedded in corporate structures and cultures.

Fortunately, this also means that the problem can be tackled systematically. Senior teams can create time budgets and formal processes for allocating their time. Leaders can pay more attention to time when they address organisational-design matters such as spans of control, roles, and decision rights. Companies can ensure that individual leaders have the tools and incentives to man-

age their time effectively. And they can provide institutional support, including best-in-class administrative assistance — a frequent casualty of recent cost-cutting efforts.

Approaches like these are not just valuable in their own right. They also represent powerful levers for executives faced with talent shortages, particularly if companies find their most skilled people so overloaded that they lack the capacity to lead crucial new programs. In this article, we will explore institutional solutions — after first reviewing in more detail the nature of today's time-management challenge, including the results of a recent survey.

Time: The 'infinite' resource

When we asked nearly 1,500 executives across the globe to tell us how they spent their time, we found that only nine per cent of the respondents deemed themselves 'very satisfied' with their current allocation. Less than half were 'somewhat satisfied,' and about one-third were 'actively dissatisfied.' What is more, only 52 per cent said that the way they spent their time largely matched their organisations' strategic priorities. Nearly half admitted that they were not concentrating sufficiently on guiding the strategic direction of the business. These last two data points suggest that time challenges are influencing the well-being of companies, not just individuals.

The survey results, while disquieting, are arguably a natural consequence of the fact that few organisations treat executive time as the finite and measurable resource it is. Consider the contrast with capital. Say that a company has \$2 billion of good capital-investment opportunities, all with positive net present value and reasonably quick payback, but just \$1 billion of capital readily available for investment. The only options are either to prioritise the most important possibilities and figure out which should be deferred or to find ways of raising more capital.

Leadership time, by contrast, too often gets treated as though it were limitless, with all good opportunities receiving high priority regardless of the leadership capacity to drive them forward. No wonder that so few leaders feel they are using their time well or that a segmentation analysis of the survey data (Exhibit 1) revealed the existence not only of dissatisfied executives but of four distinct groups of dissatisfied executives — 'online junkies,' 'schmoozers,' 'cheerleaders,' and 'frefighters' — whose pain points, as we will see, reflect the ways organisations ignore time.



Initiative overload

The myth of infinite time is most painfully experienced through the proliferation of big strategic initiatives and special projects common to so many modern organisations. The result is initiative overload: projects get heaped on top of 'day jobs,' with a variety of unintended consequences, including failed initiatives, missed opportunities, and leaders who do not have time to engage the people whose cooperation and commitment they need. Organisations often get 'change fatigue' and eventually lack energy for even the most basic and rewarding initiatives.

Many dissatisfied executives, particularly firefighters and online junkies, struggle to devote time and energy to the personal conversations and team interactions that drive successful initiatives. The online junkies spend the least time motivating employees or being with their direct reports, either one on one or in a group; face-to-face encounters take up less than 20 per cent of their working day.

The communication channels they most favour are e-mail, other forms of asynchronous messaging, and the telephone — all useful tools, but often inadequate substitutes for real conversations.

Muddling through

Another unintended consequence of our cavalier attitude toward this supposedly infinite resource is a lack of organisational time-management guidance for individual managers.

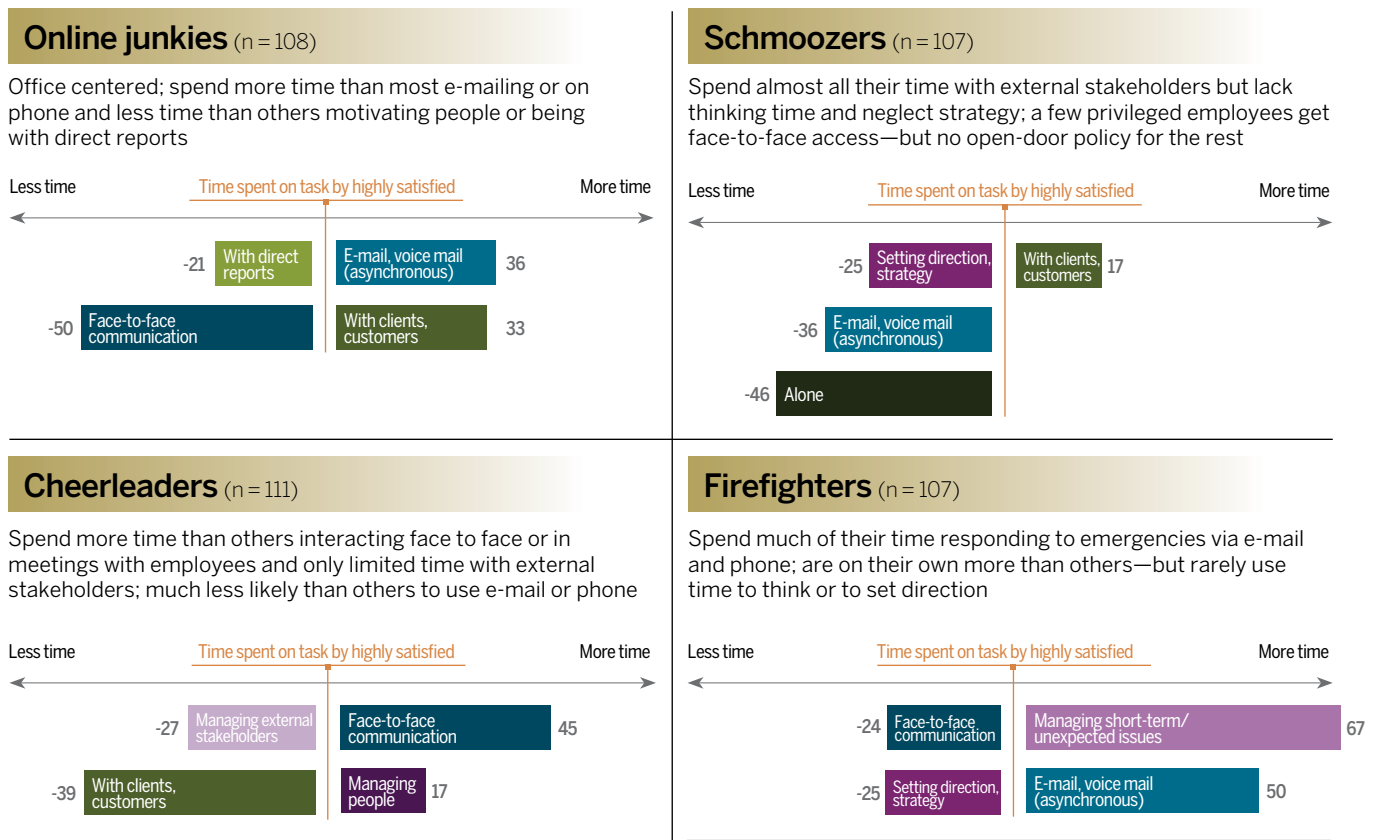
Imagine someone on day one of a new job: she has been through the training and onboarding, arrives at the office, sits down at her desk, and then . . . ?

What determines the things she does, her schedule, the decisions she gets involved with, where she goes, whom she talks with, the information she reviews (and for how long), and the meetings she attends? Nine out of ten times, we find, the top two drivers are e-mails that appear in

Exhibit 1

Executives who are dissatisfied with their use of time fall into four distinct groups.

Gap in time spent by dissatisfied vs satisfied executives,¹ %



¹Gap calculated as % of time spent by satisfied executives in a given activity, situation, or communication mode. For dissatisfied executives, n = 433, for satisfied executives, n = 124.

Source: Nov 2011 McKinsey survey of 1,374 executives at the level of general manager or above, representing all regions, industries, company sizes, forms of ownership, and functional specialties

the inbox and meeting invites, albeit sometimes in reverse order.

Diary analyses of how different people spend their time in the same role — sales rep, trader, store manager, regional vice president — often provoke astonishment at the sharply contrasting ways different individuals perform the same job. The not-so-good performers are often highly fragmented, spending time on the wrong things in the wrong places while ignoring tasks core to their strategic objectives.

We find that a laissez-faire approach to time management is a challenge for all four types of dissatisfied executives, but particularly for the schmoozers (CEOs are well represented) and cheerleaders (often C-suite executives' one level down). These individuals seem to be doing valuable things: schmoozers spend most of their time meeting face to face with important (often external) stakeholders, while cheerleaders spend over 20 per cent of theirs (more than any other dissatisfied group) interacting with, encouraging, and motivating employees.

But consider the things these people are not doing. Cheerleaders spend less time than other executives with a company's external stakeholders. For schmoozers, more than 80 per cent of interaction time takes place face to face or on the phone. They say they have difficulty connecting with a broad cross-section of the workforce or spending enough time thinking and strategizing. The same challenge confronts cheerleaders, who spend less than 10 per cent of their time focused on long-term strategy. The bottom line: muddling through and devoting time to activities that seem important does not always cut it, even for a company's most senior leaders.

Troublesome trade-offs

When new initiatives proliferate without explicit attention to the allocation of time and roles, organisations inadvertently make trade-offs that render their leaders less effective. Companies often exacerbate time problems through the blunt application of 'delaying' principles. One organisation we know applied 'the rule of 7' (no more than 7 direct reports for managers) to all parts of the organisation. It forgot that different types of managerial work require varying amounts of time to oversee, manage, and apprentice people. In some cases (such as jobs involving highly complicated international tax work in finance organisations), a leader has the bandwidth for only two or three direct reports. In others (such as very simple call-centre

Cautions to be taken in approach

- Beware of becoming so lean that you overwhelm managers; do not stint on high-quality assistants to help manage executive time.
- Measure the time executives spend on strategic priorities and set explicit time-based metrics.
- Use a master calendar to root out time-wasting meetings.

operations, where employees are well trained and largely self-managing), it is fine to have 20 or more.

While the average span of control might still work out at seven, applying simple rules in an overly simplistic way can be costly: managers with too few direct reports often micromanage them or initiate unnecessary meetings, reports, or projects that make the organisation more complex. Conversely, when managers do not have enough time to supervise their people, they tend to manage by exception (acting only where there is a significant deviation from what is planned) and often end up constantly firefighting.

We saw these dynamics most at work among our survey's firefighters. General Managers accounted for the largest number of people in this category, which is characterised by the amount of time those in it spend alone in their offices, micromanaging and responding to supposed emergencies via e-mail and telephone (40 per cent, as opposed to 13 per cent for the schmoozers). Such executives also complained about focusing largely on short-term issues and near-term operational decisions and having little time to set strategy and organisational direction.

Respecting time

The deep organisational roots of these time challenges help explain their persistence despite several decades of research, training, and popular self-help books, all building on Peter Drucker's famous dictum: "Time is the scarcest resource, and unless it is managed nothing else can be managed."

So where should leaders hoping to make real progress for their organisations — and themselves—start the journey? We do not believe there is one particular breakdown of time that works for all executives. But the responses of the relatively small group of satisfied executives in our survey (fewer than one in ten) provide some useful clues to what works.

Overall, the key seems to be balance (Exhibit 2). On average, executives in the satisfied group spend 34 per cent of their time interacting with external stakeholders (including boards, customers, and

investors), 39 per cent in internal meetings (evenly split between one on ones with direct reports, leadership-team gatherings, and other meetings with employees), and 24 per cent working alone.

Of the time executives in the satisfied group spend interacting with others (externally and internally), 40 per cent involves face-to-face meetings, 25 per cent video- or teleconferences, and around 10 per cent some other form of real-time communication. Less than a third involves e-mail or other asynchronous communications, such as voice mail.

The satisfied executives identified four key activities that take up (in roughly equal proportions) two-thirds of their time: making key business or operational decisions, managing and motivating people, setting direction and strategy, and managing external stakeholders. None of these, interestingly, is the sort of transactional and administrative activity their dissatisfied counterparts cited as a major time sink.

In our experience, all of those dissatisfied leaders stand to benefit from the remedies described here-

after. That said, just as the principles of a good diet plan are suitable for all unhealthy eaters but the application of those principles may vary, depending on individual vices (desserts for some, between-meal snacks for others), so too these remedies will play out differently, depending on which time problems are most prevalent in a given organisation.

• **Have a ‘time leadership’ budget—and a proper process for allocating it:** Rather than add haphazardly to projects and initiatives, companies should routinely analyse how much leadership attention, guidance, and intervention each of them will need. What is the oversight required? What level of focus should the top team or the steering committee provide? In other words, how much leadership capacity does the company really have to ‘finance’ its great ideas?

Establishing a time budget for priority initiatives might sound radical, but it is the best way to move toward the goal of treating leadership capacity as companies treat financial capital and to stop financing new initiatives when the human capital

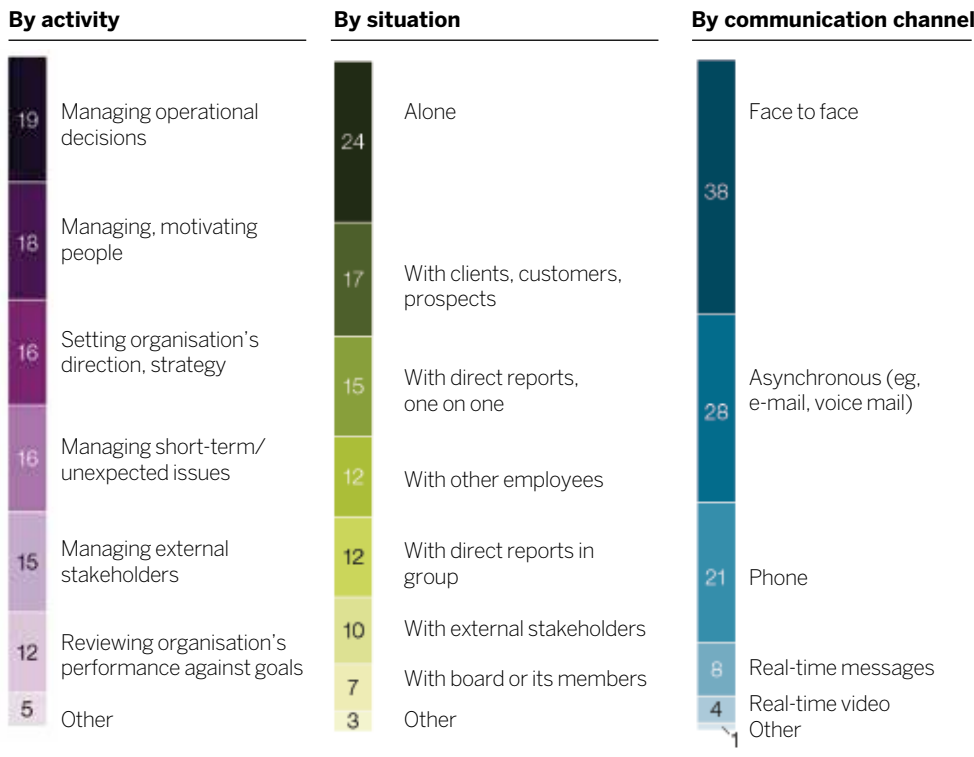
runs out. One large health system we know has established a formal governance committee, with a remit to oversee the time budget, for enterprise-wide initiatives. The committee approves and monitors all of them, including demands on the system’s leadership capacity. Initial proposals must include time commitments required from the leadership and an explicit demonstration that each leader has the required capacity. If not, the system takes deliberate steps to lighten that leader’s other responsibilities.

• **Think about time when you introduce organisational change:** Companies typically look at managerial spans of control from a structural point of view: the broader they are, the fewer managers and the lower the overhead they need. Augmenting that structural frame of reference with the time required to achieve goals is critical to the long-term success of any organisational change. The hours needed to

Exhibit 2

How satisfied executives spend their time.

Time allocation by highly satisfied group¹ (n = 124 executives), %



¹Survey data are weighted by contribution of each respondent’s nation to global GDP to adjust for differences in response rates.

Source: Nov 2011 McKinsey survey of 1,374 executives at the level of general manager or above, representing all regions, industries, company sizes, forms of ownership, and functional specialties

Drowning in managerial minutiae

When we arrived early one morning for a leadership meeting with the Director of Operations at a large manufacturing company, we found her staring in frustration at her laptop. “What are you working on?” we asked.

“I wouldn’t say I am working on anything,” she said grumpily. “I am

approving things. Like this \$26 requisition for a set of business cards. I have got all these approvals that I need to approve backed up in the system. I swear I must spend 15 or 20 hours per month on this kind of nonsense. Approving this, managing that, signing off on time sheets, on sick leave, and on budget items in excruciating detail.

Every time there is one of these efforts to cut costs in a function, work that had previously been done by a

small group of clerks and administrators gets pushed out to executives and managers to do themselves, reducing the clerical department by five or six FTEs.

If we could measure the time costs for senior managers, we would see that they are much bigger than the cost savings — but it is easier to just shove the work onto someone else and declare victory than to do the really hard work of finding out how to get more efficient.”

manage, lead or supervise an employee represent a real constraint that, if unmanaged, can make structures unstable or ineffective.

Getting this right is a delicate balancing act. Excessively lean organisations leave managers overwhelmed with more direct reports than they can manage productively. Yet delayering can be a time saver because it strips out redundant managerial roles that add complexity and unnecessary tasks. One major health-products company we know recently made dramatic progress toward eliminating unnecessary work and taming a notorious ‘meeting culture’ just by restructuring its finance organisation, which had twice as many managers as its peers did.

Likewise, when another company — this one in the technology sector — reset its internal governance structures, it saved more than 4,000 person-hours of executive time annually while enhancing its strategic focus, increasing its accountability, and speeding up decision making. In particular, the company revamped complex decision-making structures involving multiple boards and committees that typically included the same people and had similar agendas and unnecessarily detailed discussions.

• **Ensure that individuals routinely measure and manage their time:** At one leading professional-services firm, a recent analysis revealed that the senior partners were spending a disproportionate amount of time on current engagements, to the exclusion of equally important strategic priorities, such as external networking, internal coaching, and building expertise. Today, individual partners have a data-backed baseline as a starting point to measure how well their time allocation meets their individual strategic objectives.

Executives are usually surprised to see the output from time-analysis exercises, for it generally

reveals how little of their activity is aligned with the company’s stated priorities. If intimacy with customers is a goal, for example, how much time are the organisation’s leaders devoting to activities that encourage it?

Most cannot answer this question: they can tell you the portion of the budget that is dedicated to the organisation’s priorities but usually not how much time the leadership devotes to them. Once leaders start tracking the hours, even informally, they often find that they devote a shockingly low percentage of their overall time to these priorities.

Time scarcity is getting worse: always-on communications, organizational complexity, and unrelenting economic pressures are compounding an age-old challenge.

Of course, if you measure and manage something, it becomes a priority regardless of its importance. At one industrial company, a frontline supervisor spent almost all his time firefighting and doing unproductive administrative work, though his real value was managing, coaching, and developing people on the shop floor. The reason for the misallocation was that shop floor time was neither structured nor measured — no one minded if he did not show up — but he got into trouble by not attending meetings and producing reports. The same issue exists for senior executives: if their formal and informal incentives do not map closely to strategic priorities, their time will naturally be misallocated.

The inclusion in performance reviews of explicit, time-related metrics or targets, such as time spent with frontline employees (for a plant manager) or

networking (for senior partners at a professional services firm), is a powerful means of changing behaviour. So is friendly competition among team members and verbal recognition of people who spend their time wisely. And consider borrowing a page from lean manufacturing, which emphasises 'standard work' as a way to reduce variability. We have seen companies define, measure, and reward leader-standard work, including easy-to-overlook priorities from 'walking the halls' to spending time with critical stakeholders.

- **Refine the master calendar:** To create time and space for critical priorities, business leaders must first of all be clear about what they and their teams will stop doing. Organisationally, that might mean reviewing calendars and meeting schedules to make an honest assessment of which meet-

ings support strategic goals, as opposed to update meetings slotted into the agenda out of habit or in deference to corporate tradition.

While many large companies create a master calendar for key meetings involving members of the senior team, few take the next step and use that calendar as a tool to root out corporate time wasting. There are exceptions, though: one global manufacturer, for example, avoids the duplication of travel time by always arranging key visits with foreign customers to coincide with quarterly business meetings held overseas.

In our experience, companies can make even more progress by identifying which meetings are

for information only (reporting), for cross-unit collaboration (problem solving and coordination at the interfaces), for managing performance (course-correcting actions must be adopted at such meetings, or they are really just for reporting), or for making decisions (meetings where everything is approved 99 per cent of the time do not count, since they too are really for reporting). Executives at the highest-performing organisations we have seen typically spend at least 50 per cent of their time in decision meetings and less than 10 per cent in reporting or information meetings. But most companies allocate their leadership time in exactly the reverse order, often without knowing it: the way people spend their time can be taken for granted, like furniture that nobody notices anymore.

- **Provide high-quality administrative support:** One of the biggest differences we saw in the

survey involved the quality of support. Of those who deemed themselves effective time managers, 85 per cent reported that they received strong support in scheduling and allocating time. Only seven per cent of ineffective time allocators said the same.

The most effective support we have seen is provided by a global chemical company, where the CEO's administrative assistant takes it upon herself to ensure that the organisation's strategic objectives are reflected in the way she allocates the time of the CEO and the top team to specific issues and stakeholders. She regularly checks to ensure that calendared time matches the stated priorities. If it does not, during priority-setting meetings (every two weeks) she will highlight gaps by asking questions such as, "We have not been to Latin America yet this year—is that an issue? Do you need to schedule a visit before the end of the year?" Or, "Are these the right things to focus on? Since you are already going to Eastern Europe, what else should we schedule while you are out there? Do we need to clear the decks to make more time for strategic priorities?"

In addition, the CEO's administrative assistant 'owns' the master calendar for corporate officers and uses it to ensure that the executive team meets on important topics, avoids redundant meetings, and capitalises on occasions when key leaders are in the same place. Finally, to give senior leaders time to reflect on the big picture, she creates 'quiet zones' of minimal activity two or three days ahead of significant events, such as quarterly earnings reports, strategy reviews with business units, and board meetings. Such approaches, which make the executives' allocation of time dramatically more effective, underscore the importance of not being 'penny-wise and pound-foolish' in providing administrative support.

The time pressures on senior leaders are intensifying, and the vast majority of them are frustrated by the difficulty of responding effectively. While executives cannot easily combat the external forces at work, they can treat time as a precious and increasingly scarce resource — and tackle the institutional barriers to managing it well. The starting point is to get clear on organisational priorities — and to approach the challenge of aligning them with the way executives spend their time as a systemic organisational problem, not merely a personal one. ■

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With almost 50% of executives saying that they are not spending enough time on strategic priorities, time challenges are a concern for companies, not just individuals.

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▲ Fig. 1: Cooling bed for sheet metal



Onsite applications of SKF extreme temperature bearings:

- ◀ Fig. 2: DryLube bearing for a cooling bed on bar mill
- ▼ Fig. 7: Rolls in annealing ovens



Lubricate with Graphite

Many bearings operate in very high temperature environments – but few lubricants can withstand the heat. SKF has developed bearing solutions that incorporate dry lubrication for extreme temperature applications, providing benefits for customers, amongst others in the metal processing, building materials and food and beverage industries. **By Hugo Carlén**

Dry lubrication is particularly suitable for applications that run at slow speeds at extremely high temperatures. In such applications, where bearings are typically subjected to very high temperatures (in the range of 200–350 °C), normal lubricants such as grease and oil deteriorate rapidly, leading to poorly lubricated bearings that fail prematurely. Dry

lubrication does not deteriorate at these high temperatures, can work under heavy loads, has high thermal stability and can offer a virtually maintenance-free application.

This is why dry lubricated bearings have large potential, particularly within the metals industry. In cooling beds for sheet metal, a typical installation may contain around 5,000 bearings (Fig. 1). These bearings often run intermittently at very high temperatures, and due to the nature of the equipment they are very difficult to relubricate. SKF has long experience in manufacturing dry lubricated deep groove ball bearings and Y-bearings with a graphite cage (VA208 and VA228

variants). These ball bearings are often used in kiln trucks (Fig. 3), cooling beds (Figs. 1 and 2) and continuous ovens (Fig. 8).

With the introduction of SKF DryLube bearings, a broad range of dry lubricated bearings, the benefits of dry lubrication can now be applied to virtually any SKF bearing – including roller bearings and plain bearings.

Dry lubricated bearings

SKF DryLube bearings incorporate graphite and molybdenum disulphide as the dry lubricants. In these materials, the lubricating properties are the consequence of a lamella layer structure that is created under load, when the lubricant adheres to the contact surfaces in the bearing. The layered structure enables sliding movement of the parallel plates (Fig. 5).

Weak bonding between the plates provides low shear strength in the direction of the sliding movement but high compression strength in the direction perpendicular to the sliding movement. Also, a solid lubricant having high compression strength is capable of withstanding heavy loads without creating

metal-to-metal contact. Finally, the dry lubricant has good adhesion to the substrate surface. This property provides a presence of solid lubricant on the bearing surfaces even at high shear stresses.

For graphite, the lubricating properties are further enhanced when vapour is present in the graphite layers, as this reduces shear forces and friction.

Graphite can function as a lubricant at temperatures well above 500 °C. To further enhance the performance or increase service life of the SKF DryLube bearings, there are variants – where the dry lubrication is combined with additional lubricating high-temperature oil additives and lubricating nanoparticles.

To create an SKF DryLube bearing, the dry lubricant and a resin binder are injected into the free space in the bearing around the rolling elements and raceways. A curing process ensures that the lubricant solidifies.

The process makes it possible to turn virtually any SKF bearing into an SKF DryLube bearing, as long as the bearing is equipped with a metal cage and has sufficient free space for the dry lubricant (Fig. 6). This makes the SKF range of bearings extremely dynamic and able to meet virtually any kind of high-temperature application requirement.

In operation, the dry lubricant maintains a very thin film on the raceways and rolling elements that helps in avoiding metal-to-metal contact.

Benefits of dry lubrication

In the targeted applications, the dry lubrication not only enables the bearings to perform well but also offers particular benefits in extreme temperature applications. Dry lubricants also offer low start-up torque at any temperature and low fric-

tional moment during operation. Moreover, no minimum speed is needed for the bearing. A bearing lubricated with grease or oil relies on the ‘aquaplaning’ effect of the lubricant, and therefore requires a certain speed to be properly lubricated. Dry lubricated bearings also work well at extremely slow speeds.

From an environment perspective, the use of dry lubricant rather than grease avoids leakage problems. At elevated temperatures, grease viscosity decreases, increasing the chance of leakage. At high temperatures, liquid lubricants can even evaporate. In addition, there are the costs of disposal of used grease to consider alongside those of any relubrication process.

From a safety perspective, relubrication in hot environments can be hazardous. The use of dry lubricants eliminates both these environmental and safety issues – as the bearing can be lubricated for the life of the bearing with minimal lubricant loss.

As for any type of lubrication, there are certain conditions that need to be met in order to optimise the bearing performance in operation. When using dry lubricants, it is important that the bearings be kept dry to avoid potential corrosion problems, as the dry lubricant offers limited corrosion protection. In operation, it may be observed that bearings incorporating dry lubrication may experience a temporary increase in noise and vibration as small fragments of solid lubricant break free. This has no effect on the performance or service life of the bearing.

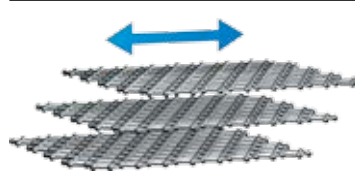
Conclusions

In those applications where dry lubrication can be used, it solves the difficult problems presented by the combination of high temperatures and, frequently,

▼ Fig. 3: Wheel bearings in a kiln truck



▲ Fig. 8: Carrier wheels and top rollers in continuous wafer ovens



▲ Fig. 5: The lubricating properties are the consequence of a lamella layer structure that is created under load; this enables sliding movements of the parallel plates.



▲ Fig. 6: Dry lubricant and resin binder are injected into the free space between the cage; the rolling elements and inner ring raceways.

slow speeds. Indeed, in applications that might fail weekly with conventional lubrication, bearings with dry lubrication can run for years as long as they are kept dry and operate at slow speeds, even if the temperatures are as high as 350 °C.

Dry lubricated bearings can dramatically reduce the complexity of bearings systems by eliminating the need for cooling and relubrication systems, and reduce the overall maintenance requirements. At the same time the SKF DryLube bearing assortment is designed to offer a high degree of operational reliability even at a very high temperature, contributing to reduced equipment operating costs. ■

The author is the Marketing Manager, Self-aligning Bearings and Speciality Products, SKF Sverige AB, Gothenburg, Sweden. Source: Evolution - the business and technology magazine from SKF

Pelletizing Plant within Steelworks

World's first Circular Pelletizing Technology (CPT) based plant will come up in Orissa. Siemens Metals Technologies has developed the solution, which is a less space consuming and low cost technology.

The world's first CPT plant is currently under construction in Orissa. Total space requirements for the complete facility, which extends from raw material dosing and balling to process gas cleaning, and which also includes a coal-gasification plant to generate burner fuel, is less than two hectares. Start-up is scheduled for the second half of this year, after that the plant will be capable of producing 1.2 million tons of pellets per year for the Indian iron and steel industry.

A new generation of pellet plants featuring a circular induration furnace as its core element has been developed by Siemens Metals Technologies. Referred to as Circular Pelletizing Technology (CPT), this iron ore agglomeration facility is char-

acterised by its highly compact layout and light-weight construction design. This is the basis for efficient and cost-effective installation at a mining site or within an iron and steel complex. Pellet production capacities range from 800,000 to three million t/a, and the quality of the pellets can be flexibly adjusted according to production requirements.

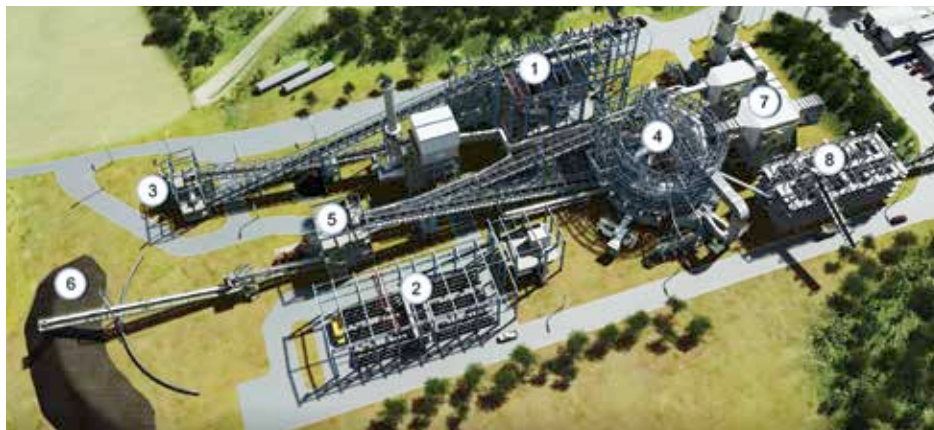
The ever-higher portion of fine and ultrafine iron ore from mining sites means that the pelletizing process is becoming more important for ore agglomeration. This has led to an increased interest by steel producers to invest in their own pellet plants to become independent of escalating prices for pellets on the global market. Up till now, however, space requirements and high investment costs for a conventional plant generally precluded its installation within an existing steelworks.

With a view to addressing this situation and simultaneously reducing the capital expenditures for new facilities, Siemens Metals Technologies has recently developed CPT.

This solution is based on the travelling-grate pelletizing process, however, the circularly designed induration furnace greatly reduces the footprint of the pelletizing plant. Overall space requirements for CPT are approximately one half of those needed for a conventional pellet plant.

With CPT, costs for civil works, equipment and steel structure are reduced, and plant installation can be completed far more quickly. The circular induration furnace also results in a more efficient utilisation of installed equipment - because nearly twice the number of pallet cars are always inside of the induration furnace compared to a straight-type induration furnace of the same capacity.

CPT's intelligent and maximised reuse of hot gases minimises the energy consumption for pelletising, and in combination with total recycling loops for waste materials and even steel mill reverts, a low environmental impact is ensured by the process. The installation of Circular Pelletizing Technology within a steelworks not only allows producers to become independent of erratic prices for commercially available pellets, the chemistry and quality of the pellets can also be flexibly adjusted with this - to meet the requirements of blast furnaces or direct-reduction plants. ■



3-D schematic view of the Circular Pelletizing Plant currently under construction in Orissa

- ① Raw material dosing and balling
- ② Additive storage and grinding
- ③ Mixing station
- ④ Induration furnace
- ⑤ Product screening
- ⑥ Product storage pile
- ⑦ Process gas cleaning
- ⑧ Coal gasification plant



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Eco-friendly Coal Mining

Indian government has framed stringent policies for air, water and noise pollution control in and around the mining projects. Let us see what Coal India Limited (CIL) has been doing in this front.

By N. C. Joshi

The government has evolved a very cautious procedure for mining projects in view of apprehensions expressed time to time about the coal mining impact on forestry, environment and social life of locals residing around mining areas. Before commencement of production from coal mines, the impact on existing society, forestry and environment due to the project is assessed by an Environment Impact Assessment (EIA) study for each case, and accordingly Environmental Management Plans (EMPs) are prepared.

EMPs deal with the various pollution mitigation measures to be undertaken to mitigate the impact of pollution, in order to reduce any adverse effect on health of people in and around the mining area, as per requirement of the project. The EMPs are submitted to Ministry of Environment and Forests (MoEF) for obtaining Environmental Clearance (EC).

The measures are taken for each coal project as per EMPs, and a strict monitoring mechanism has been provided to ensure all norms are followed. Air, Water and Noise pollution control have been taken up seriously.

Air pollution control

Air pollution is being controlled by regular spraying of water on haul and coal transportation roads by fixed as well as portable water sprinklers and also on coal-handling-plants, all coal transfer points, Coal & Overburden (OB) faces, coal stockpiles etc.

Other steps include - fitting drills with dust collection systems, wet drilling, black topping, concreting of coal transportation roads. Efforts're on way for use of more and more belt conveyors, rails etc., for coal transport and minimising road transportation to lower pollution. Massive trees plantation in and around mines also minimises the impact of air pollution on neighbouring areas.

Water pollution control

Mine water is passed through sedimentation pond to arrest sediments, and clean runoff is being used for beneficial use - such as domestic, industrial and agricultural purposes (after treatment to the extent possible), before discharging into natural water courses. Effluents from workshops are passed through Oil & Grease Traps and recycled for dust suppression and for cleaning. In major mines, domestic effluents are treated in domestic ET plants and in other mines in septic tanks.

Noise pollution control

Noise pollution is controlled through the careful selection of equipment, proper maintenance and insulation. Persons exposed to high noise level are given ear muffs. This is besides tree plantation between work places and residential areas.

Ecological damage control

Damage to ecology is being controlled by plantation on physically and biologically reclaimed mined out areas, on the OB dump areas, in and around mines, road sides, township or residential areas, available vacant spaces – and implementation of conservation plan for protection of flora and fauna as per EC. This is apart from the payment made for compensatory afforestation to forest departments.

In addition, the environmental protection measures are taken in compliance to condition of consent to operate from respective State Pollution Control Boards. Regular monitoring of various environmental attributes are carried out as per Environment (Protection) Act, 1986 – to assess the efficacy of environmental protection measures taken, and if required additional measures are taken to keep the various environmental attributes within the prescribed limits of the Regulatory Agencies.

Health protection

Coal India Limited (CIL) has specific schemes to protect the health of the people living in and around the coal mining areas. As per the Corporate Social Responsibility (CSR) Scheme of CIL, there is a separate fund allocated at the rate of Rs. five per tonne of coal production of the previous year – and the entire fund is year-marked for expenses towards well being of the people living in and around the coal mining areas or belts and in the state in which the projects are situated.

As per the CSR Policy of CIL, from the fund, a lump sum provision is made for schemes for the benefit of tribal population. As per the policy, out of the total CSR budget, eight per cent is allocated separately and exclusively to the Annual Plan for undertaking welfare activities for the development of Scheduled tribes (STs) population.

Rehabilitation of tribals

Displacement of tribals is avoided by exploring alternative plans for the projects. But in unavoidable circumstances due to geological reasons, locals and/or tribal people have to be displaced and resettled in some of the areas of the subsidiary companies. The same has been done in conformity with the various extant laws of the land.

Since inception in Eastern Coalfields Limited (ECL), tribal people have been displaced in Rajmahal, SP Mines, Mugma, Sonapur Bazari, Pandaveswar and Kajora. Also, for South Eastern Coalfields Limited (SECL) people have been shifted to Gevra OCP Expansion. In case of Central Coalfields Limited (CCL), the same practice has been repeated in areas like Piparwar, NK Dakra, Argada,

Barkasayal, Rajrappa, Dhori, B&K, Kathara, Kujju, Hazaribagh (Charhi), Rajhara.

Mahanadi Coalfields Limited (MCL) has acquired land belonging to tribals in Sundargarh, Jharsuguda and Angul districts of Orissa. In coal projects of Western Coalfields Limited (WCL) people residing in Gaonthan areas, Betul Tahsil, Tamla and Jamal Tribal Blocks, Seergaon Khurd, Kirwani of Patwari Circle, Chhindwara, Rajura Tahasil tribals are resettled after providing compensation of lands or houses and other Rehabilitation & Resettlement (R&R) benefits as per provisions of R&R Policy of CIL.



▲ Efforts are being made for use of more and more rails for coal transportation.

Better rehabilitation package

The compensation package for the project affected persons and others has been revised recently, in 2012, to make it more rewarding.

Now, in the case of displacement of tribal people, in addition to land compensation as per State notified rate, interest, escalation, solatium at the rate of 30 per cent of the land compensation is paid. Besides these, one employment for each two acres of land is also provided to the affected family.

There are additional special provisions for tribes, who are dependent on forest produce. Also, there are provisions in the rehabilitation policy to ensure cultural and economical sustainability of the displaced tribal community.

In addition to these, at the rehabilitation site, all amenities like school, road, street light, concreted (pacca) drain, pond, dug well, tube well for drinking water supply, community centre, place of worship, dispensaries, grazing land for cattle and play ground etc., are provided to have a better life.

Monitory compensation in lieu of house plots and shifting & resettlement allowance at the rate of Rs. three lacs per family as per heir choice is given according to CIL R&R Policy, 2012.

There is a special training scheme for scheduled caste and scheduled tribe project affected persons – in which they are being given training in the technical trade and statutory jobs to make them employable during outside recruitment – to fill up the vacancies of the subsidiary companies. During the training period there is provision of stipend and accommodation. ■

The author is the Deputy Director (Media & Communications), PIB, New Delhi.

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Enabling Trade: Valuing Growth Opportunities

Reduction of supply chain barriers has potential to increase global GDP and world trade much more than reducing all import tariffs.

As per the report of a survey conducted by the World Economic Forum (WEF) in collaboration with Bain & Company and the World Bank – if all countries reduce supply chain barriers halfway to global best practice, global GDP could increase by 4.7 per cent and world trade by 14.5 per cent, far outweighing the benefits from the elimination of all import tariffs. In comparison, completely eliminating tariffs could increase global GDP by 0.7 per cent, and world trade by 10.1 per cent. Even a less ambitious set of reforms that moves countries halfway to regional best

practice could increase global GDP by 2.6 per cent and world trade by 9.4 per cent.

Economic gains from reducing supply chain barriers are also more evenly distributed across

A few findings based on the WEF's Case Studies

- In Brazil, managing customs paperwork for exports of agricultural commodities can take 12 times longer than in the European Union (a full day versus a couple of hours).
- Poor quality infrastructure services can increase the input material costs of consumer goods by up to 200 per cent in certain African countries.
- In Madagascar, supply chain barriers can account for about 4 per cent of total revenues of a textile producer (through higher freight costs and increased inventories), eroding the benefits of duty-free access to export markets.
- Obtaining licenses and lack of coordination among regulatory agencies in the US lead to delays in up to 30 per cent of chemical shipments for one company – each late shipment costs US\$ 60,000 per day.
- In Russia, product testing and licensing in the computer sector can lead to high administrative costs and delay time-to-market anywhere from 10 days to 8 weeks.

countries than the gains associated with tariff elimination. Regions that stand to benefit in particular under these scenarios are sub-Saharan Africa and South East Asia. Such large increases in GDP would be associated with positive effects on unemployment, potentially adding millions of jobs to the global workforce.

According to the report, lowering supply chain barriers is effective because it eliminates resource waste and reduces costs to trading firms and, by extension, lowers prices to consumers and businesses. Supply chain barriers can result from inefficient customs and administrative procedures, complex regulation and weaknesses in infrastructure services, among many others. The supply chain is the network of activities involved

regarding how policies can create unnecessary supply chain costs and inefficiencies based on 18 case examples spanning multiple industries and regions. The

case examples highlight that clusters of policies jointly impact supply chain performance; that a concerted approach is needed to cut across different policy domains; that there may be specific tipping points that need to be achieved for reductions in supply chain barriers to have a significant impact on trade; and that Small and Medium Enterprises (SMEs) tend to face



Bernard Hoekman, Director, International Trade Department, The World Bank



Børge Brende, Managing Director World Economic Forum

analysis of factors affecting supply chain performance; and that governments pursue a more holistic, supply-chain-centred approach towards international trade negotiations to ensure that trade agreements have greater relevance for international business and do more to benefit consumers and households.

“The Forum’s Enabling Trade programme has endeavoured to highlight the fundamental attributes that enable a country to facilitate trade. Through a vivid repository of case studies, which provide an on-the-ground view of everyday barriers that companies face along trade lanes, this report shows that removing barriers to supply chains can enhance economic competitiveness and generate significant welfare benefits and jobs for countries,” said Børge Brende, Managing Director, World Economic Forum.

“Supply chain barriers are more significant impediments to trade than import tariffs. Lowering these barriers will reduce costs for businesses, and help generate more jobs and economic opportunities for people,” said Bernard Hoekman, Director of the World Bank’s International Trade Department, who is also the Chair of the Forum’s Global Agenda Council on Logistics & Supply Chains. ■

Some more findings based on the WEF’s Case Studies

- Local content requirements, rule-of-origin restrictions and pilferage at the border, can increase costs by 6-9 per cent of consumer technology products in the Middle East and North Africa.
- Eliminating supply chain barriers in the South East Asian rubber market could reduce carried inventories by 90 days, representing a 10 per cent reduction in product cost.
- India’s Preferential Market Access regulation, which provides preference for locally produced high-tech products in government procurement, could increase costs by 10 per cent, over the cost of imports.
- Adopting electronic documentation for the air cargo industry could yield US\$ 12 billion in annual savings and prevent 70-80 per cent of paperwork-related delays.
- Easing regulatory compliance of international trade that SMEs face when selling through the Internet could increase cross-border SME sales by 60-80 per cent.

in producing and getting a product to consumers, and spans the manufacturing process as well as transport and distribution services.

The survey was initiated by the Forum’s Global Agenda Councils on Logistics & Supply Chains and Global Trade & FDI. The report provides information

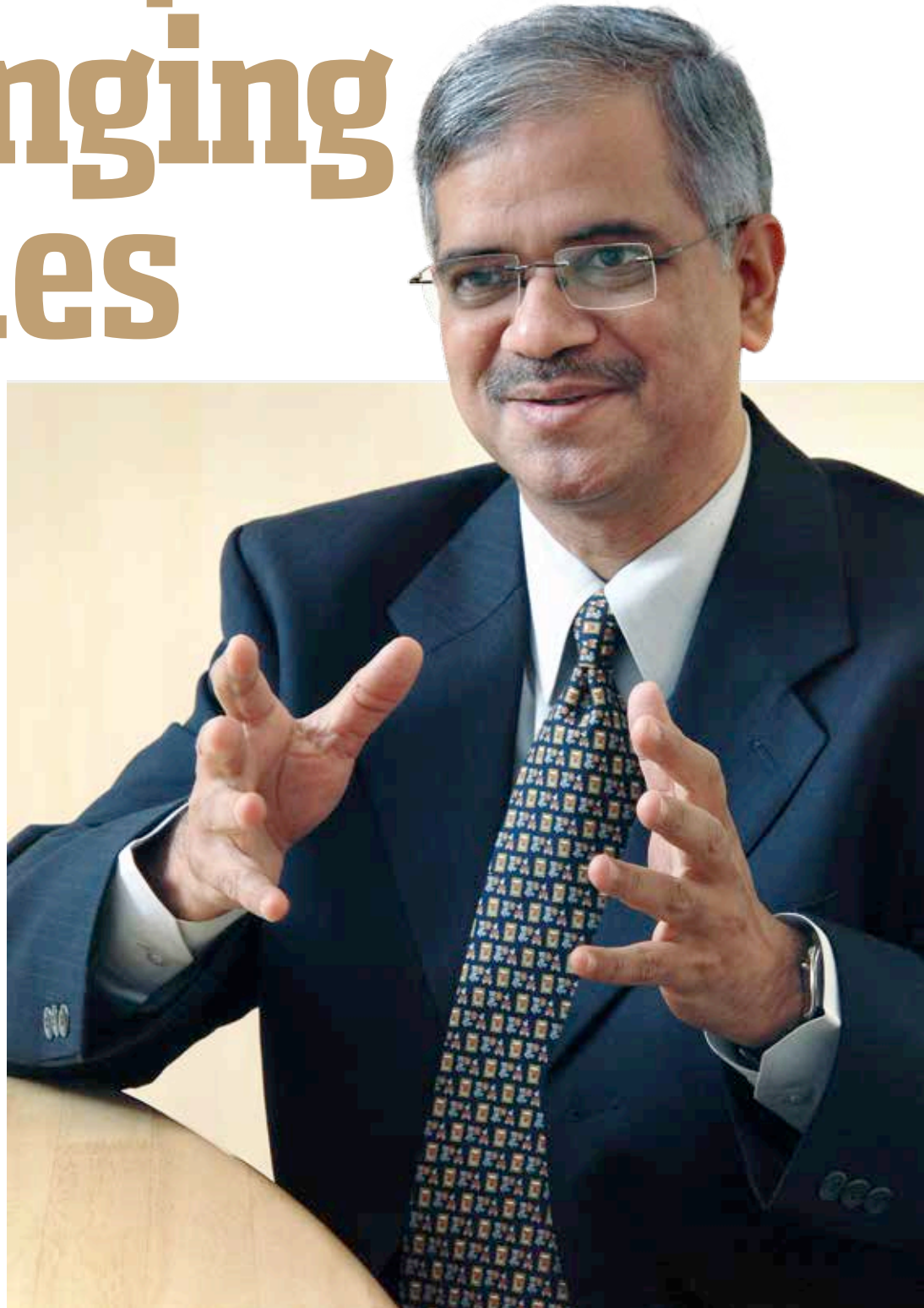
proportionally higher supply chain barriers and costs.

The report recommends that governments create a focal point to coordinate and oversee all regulation that directly impacts supply chains; that public-private partnerships be established to undertake regular data collection, monitoring and

Leadership for Changing Times

Values change from one generation to the next, and obviously every organisation faces its impact. Winners are those who realise the need of the new generation of employees – and accordingly reorient themselves. Thermax is one of the fast growing and innovative Indian manufacturing companies. Let us see how does the HR Chief of the company look at this cultural transition and prepare to cope with it.

By A. M. Roshan



Nearly two months ago, Sharad Gangal opened his Facebook account. Nothing new here, as he was only joining the world's biggest 'club' that boasts of a membership of 500 million plus. But, what made the HR Chief of Thermax take this belated step? As the question is asked, I realise that the late convert is being quizzed by the still reluctant observer.

Sharad doesn't have any personal fears that absence on the Net means vanishing from public view. But he is convinced that to connect with the increasingly young crowd, he and the company have to adopt practices that are in sync with young professionals. He reminds me of the generational shift happening in the company - 56 per cent of employees are less than 35 years of age. "Who are we to prescribe? This generation feels that it is relevant to be on Facebook and other social network sites," he says.

In the course of our conversation, predictably, the ever green question comes up: as Thermax

his Master's course in Personnel Management were declared, he joined as Welfare Officer, only to walk into a fierce inter union strike that lasted for months. "It taught me that employees are our real constituency. If the management doesn't reach out, it is only natural for workers to gravitate towards unions. That's how organisations lose touch with their people." He talks about the quarterly sessions that he and his colleagues in Thermax's Management Council, Rajan Nair and Hemant Mohgaonkar (Executive Vice Presidents), and the SBU Heads have with the Thermax workers. "We are happy that a sustained conversation is happening within Thermax."

From Bennet Coleman, he would eventually move back to Asian Paints where, before he left for his higher studies, he had begun his career in the Materials Department. He would work there for the next five years and another seven years with the German bulk drugs manufacturer, Boehringer Mannheim, as Assistant Personnel Manager. Here he worked in their highly unionised factory of 600

"Compared to the past, the shift in economic cycle is rapid, and therefore today's leadership is all about agility, renewal and consistency." Sharad Gangal, HR Chief, Thermax

grows, how do we retain the warmth and friendliness of the small company? As new faces look at you every day at the work place, and everyone has to step up performance, how do managers manage to spend time with their people? Though there is no substitute for a face-to-face session in real time and space, Sharad feels that it might not be possible every time to have the personal meetings of old days. "We have to try out modern methods to remain approachable," he says. In any case, doesn't the new professional shuttle effortlessly between real and virtual worlds?

Sharad is quick to point out that more than the media we choose, it is the demonstrated behaviour of the top management that determines the culture of a company. "Leaders must take care to remain friendly. The responsibility to preserve our informal ways rests with the senior management."

That management has to be close to people, is a lesson Sharad learnt at his second job at Bennet Coleman in 1984. The day the results of

workers and 250 medical representatives. For the next 10 years, from 1996, Sharad would work with Cadbury India.

At their friendly work place, marked by the company's insistence on humility, he learnt "best in class HR processes." When Cadbury had acquired another company, Sharad gained hands-on experience in integrating cultures. In four years, he rose to the General Manager position.

Before joining Thermax, Sharad also worked with HDFC Life Insurance Co., creating HR processes, practices and competency models for a workforce of 18000."

Sharad has completed two years and a half in Thermax. I ask him about the facets of Thermax life that should not be lost in the flux of change. He immediately points out 'our informal culture' - that he believes is what contributes to the company's reliable performance. "Performance here flows from an employee's sense of responsibility, and not because it is driven by someone. It helps Thermax

deliver to the market what it promises while retaining the softer aspects of its culture.”

Sharad says that the autonomy that a young professional enjoys in Thermax must be nurtured. Thirty seven years running, we have been conducting our Graduate Trainee Programme – where young engineers from colleges are recruited and groomed.

“The market perceives, rightly, that once you work with Thermax, you get a chance to learn and to refine your skills. This is something that should continue.” Learning by doing is the best way, he explains.

But today’s young professionals – do they want to stay for a long innings, here or anywhere? Sharad is frank to admit that employee attrition is a reality we have to learn to live with. Especially, when the next 10-15 years are going to see huge growth and trained professionals are already in short supply to meet the industry demand. However, he says it would be a mistake to confuse commitment with short tenures. “Today’s young generation tell us – don’t measure our loyalty by the short stay; evaluate us on our performance and commitment while we are with you.”

▼ Sharad Gangal is interacting with a group of the young company employees.

“Leaders must take care to remain friendly. The responsibility to preserve our informal ways rests with the senior management.”

Sharad Gangal
HR Chief, Thermax



Currently, a young professional may not think of more than five years in an organisation. Sharad feels, “We should not take the short careers of today’s professional as a fait accompli. We need to try and stretch it to a ten year period.” He elaborates that in engaging with employees, compensation and reward is only one aspect that influences their retention. We also need to provide inspirational leadership and a nurturing environment, which, he feels are what really count.

I sound him out on the internal weather within Thermax. He searches for words before he says, “I ask myself: Are we becoming too clinical? Are we losing sensitivity?” Is it a fall out of difficult times, where there is anxiety about numbers? Sharad says performance is paramount, but then, leadership also demands that we create teams and enablers to chase numbers. The top team also has the big job of putting on the mantle of coaches to develop second and third levels.

At this point, where are we when it comes to such teams? Sharad says we are 65 -70 per cent there in creating the next levels of leadership. “Our processes are in place. But we have to fast forward, strengthen the existing systems to train and make ready our new leaders.”

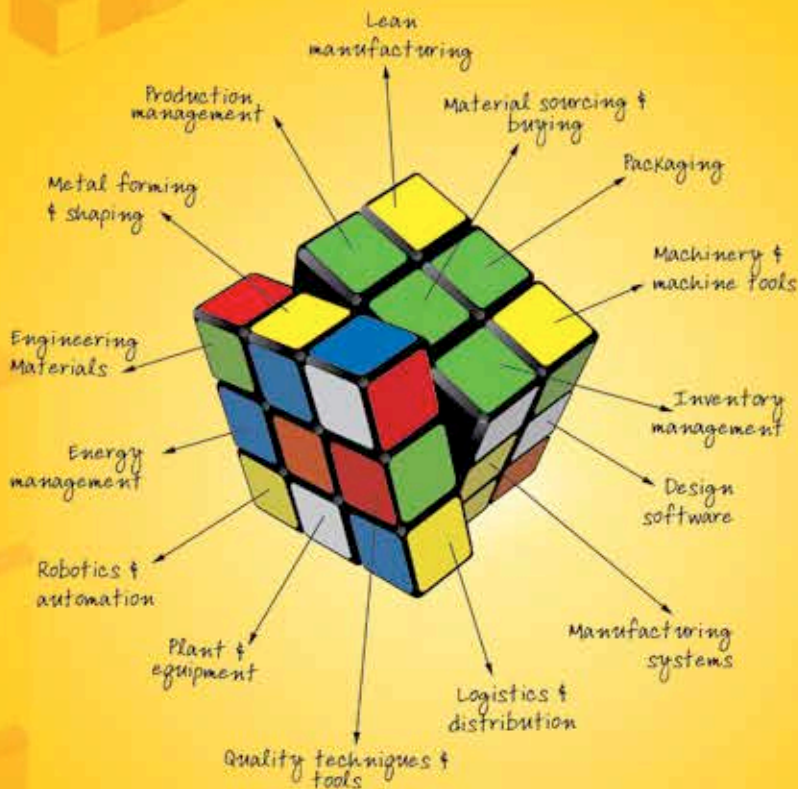
Sharad talks at length about Learning Sessions, a new initiative launched for young managers. A recent programme saw 150 of them getting trained. In the New Learning and Development Programme kickstarted about nine months ago, “We see a very intense participation in this people process, including all our SBU Heads.”

Though he had been talking to me for quite some time, I remember that Sharad is more of a listener. He seems comfortable with this assessment. He says without any flourish, “I have to keep on checking whether the HR Head’s cabin is like a Dentist’s chair. Are my doors open in a real sense?” ■

The author is the Head of Corporate Communications, Thermax. Reprinted with slight modifications from Thermax’s house magazine.



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Manufacturing Summit 2012

F&S's event assembled technocrats from multiple segments of Indian manufacturing sector. Audience applauded versatility of topics that were selected for presentation.

Frost & Sullivan's (F&S's) Manufacturing Summit 2012 was recently concluded in Mumbai. The annual event for the Indian manufacturing industry found presence of manufacturing experts from many segments – such as – automotive, auto parts, cement, metal,

chemical, pharmaceutical, garment, tyre, power equipment, battery and FMCG.

The knowledge-sharing day started with an inaugural address by Raghavendra Rao, Vice President, F&S. He stressed on the importance of developing a culture of sharing knowledge among the industries to accelerate the growth momentum.

“Sustaining Safe Culture” was the presentation headline for Essar Steel India. G. V. R. Sekhar, Head – Essar Manufacturing Excellence, detailed on the multi-dimensional safety culture that is being followed in the steel company.

K. Tarachand, CEO, Granada Software, elaborated on how ‘business analytics’ can help in business planning. He also focused on the usefulness of dashboards, especially, in the Indian scenario.

Hindustan Uniliver's Factory Manager (Haridwar), M. Panchabhai talked on “New Product

Development and Manufacturing Implementation Process.” He focused on different aspects of EPM tools to add more value to innovation decisions.

Rajesh Kumar, Head of Operations, Laguna Clothing, talked on their staff training policy. He described the practice of creating separate budgeted fund for the purpose, and how the company stick to that.

Punit Jagatramka, Sr. VP, Bharat Aluminium, detailed on the usefulness of “Scoreboard for Contractor Performance,” He highlighted the best practices to build skill set among the casual and contract labourers.

How RFID technology is being used for easing manufacturing processes was explained by Pradeep Bendre, Senior Manager – Powertrain Technical Support, Fiat India Automobiles.

There were many other speakers, namely from Lupin Laboratories, Faiveley, Micro Labs, Tata Motors, Autoliv India, Indo Gulf Fertilisers, Subros, Rockman Industries, Spicer India and Hindustan Zinc. ■



Raghavendra Rao, VP, F&S is delivering the inaugural address in the F&S Manufacturing Summit 2012.



Surya Bansal, Program Manager, Mfg. & Process Consulting Practice, F&S, is talking on sustainable manufacturing.



One of the inquisitive attendees is putting questions to the speaker in the F&S Manufacturing Summit 2012.



Continued exchange of ideas through active participation of the audience added high value to the event.

Captains of Logistics

DIESL, recently organised an event in Mumbai to connect with their existing and potential customers.

Drive India Enterprise Limited (DIESL), is all set to cater to the customers in smaller cities too, besides offering their all round services in big cities, informed Milind Sahane, CEO of the company, during his Welcome Address.

DIESL's recent logistics event witnessed an august gathering of supply chain professionals from different industrial sectors. Besides others, there were representatives from Exide Industries, Tata Power, Usha International, Godrej & Boyce Manufacturing Co., Maharashtra State Power Generation Co., and BASF India among delegates.

Through his presentation, titled 'Decoding the Logistics Outsourcing Dilemma,' Vikram Mansukhani, National Operations Head, DIESL, drew attention on the factors that often stand as the cause of hesitation in outsourcing the company's logistics activities.

"Forty two per cent of the Indian warehouse is occupied by non-moving or slow moving stock," pointed out Arif Siddiqui, Founder, Coign Consulting, while making his presentation - titled 'Lean Supply Chain.'

'Technology for Optimised Logistics' was the topic for Vinay Kumar Hampiholi, Director - SCM Solutions, Oracle India. He stressed on the need for visibility in our supply chains. The time has come when we need to think beyond ERP, and how that can be done explained Vinay.

Shaibal Roy, SC Manager, Times Group, through his presentation, titled 'Logistics in Print Media,' explained the importance of smart logistics in distribution of newspapers in today's changing business environment.

Dharmendra Gangrade from Supply Chain Strategy Department (South Asia), BASF, talked on the ways to bridge the gap between the service provider and users in the logistics industry through his presentation titled 'Road to Success.'

Presentations by highly experienced speakers, and a good mix of topics related to contemporary logistics concerns made the event commendable. Also, there was a good interaction opportunity. ■



(LtoR) Arif Siddiqui, Shaibal Roy, Dharmendra Gangrade, Milind Sahane and Vikram Mansukhani are fielding questions from the audience during the panel discussion in the event.



Milind Sahane, CEO, DIESL, is explaining how logistics service can be improved keeping aside issues related to infrastructure.



Vikram Mansukhani, National Operations Head, DIESL, is focusing on the causes that make the user hesitant to outsource logistics operations.



Supply chain professionals from different industries in and around Mumbai are listening to the adroit speakers in the event.

India Industrial Technologies Summit

Ascension of India into the new era of manufacturing hinges on 'adoption of best-in-class automation solutions and practices.'

The Industrial Automation and Process Control Practice of Frost & Sullivan (F&S) recently concluded its summit – focused on the discrete manufacturing segment – at Bengaluru. Niju V. Director, Industrial Automation and Process Control Practice, F&S, set the agenda for the day by sharing F&S's vision for India's manufacturing future and mega trends that could positively impact Indian market players in his opening address.

In the keynote address, Ajay Shankar, Member Secretary, National Manufacturing

Competitiveness Council, highlighted India's manufacturing competitiveness, and its formidable position as compared to other developed and emerging economies.

Sunil Mehta, GM, Technical (Factory Automation and Industrial Division), Mitsubishi Electric India noted, "Today, automation is playing a key role across manufacturing industries. Consider automotive, textile, pharmaceutical, packaging and printing – all these industries are undergoing major reforms. In the manufacturing sector, majorly driven by the automotive industry, technologies such as – ethernet, wireless, human machine interface etc., are the need of the hour."

Vivek Marwaha, Director Marketing, Siemens PLM Software India, stated, "As Indian manufacturers strive for competitive advantage in an increasingly challenging global market, a robust Product Lifecycle Management (PLM) backbone can really help them, irrespective of their size, to make smarter decisions across the product lifecycle. This would result in better products and long-term success."

Pradeep Karnik, MD, OMRON Automation India, shared his insight, "Explosion of applications within the industry continues to challenge the functionality of controllers, fostering further innovation. Indian manufacturers are always pushing for greater accuracy and lower costs, while maintaining world-class levels of quality and safety. These factors are key drivers for technologies that can handle applications requiring high levels of synchronisation and determinism. They enable integration of multiple technologies stretching across the boundaries of motion, vision, logic and interface; all without sacrificing performance." ■



Shankar of NMCC is inaugurating the event lighting the holy lamp.



Niju V of F&S is delivering F&S's vision for India's manufacturing future.



(LtoR) M. Varadaraj, Director – Partner Excellence, Asia Pacific, Siemens; T. V. Varadarajan, Non-exclusive panelist - Bureau Veritas and Sustainability Champion and Business Analyst - DNV; M. N. Prasad, Head-Improvement Initiatives & Sustainability Management, MIPIC, Larsen & Toubro; V. Patil, Sr. Manager, Application Team OEM, Omron Automation and R. S. Munot, GM, Research & Development, Factory Automation and Industrial Division, Mitsubishi Electric India during panel discussion



Field personnel from different industries in and around Bengaluru turned up in the Frost & Sullivan's event. The event turned into a good knowledge sharing platform as the adroit speakers delivered new thoughts on different areas of modern automation solutions, which can improve the processes radically.

Accelerating Your Business Growth

More than 70 people, including heads of companies, manufacturing and IT specialists had the opportunity to view technology solutions in action, and hear from industry experts at an event organised by Industry 2.0 in Chennai.

In association with the Tamil Nadu Small and Tiny Industries Association (TANSTIA) and Hewlett Packard (HP), Industry 2.0 magazine organised an interactive event in Chennai to demonstrate the value of technology solutions to small manufacturers.

In his opening speech, K. R. Gnanasambandan, Vice President of TANSTIA, highlighted the role of small and tiny industries to the Indian economy, and the challenges being faced by them. He cited examples of companies in the tiny sector that are already taking advantage of advanced technology solutions to improve productivity and develop new lines of business. However, he also highlighted the challenges of the tiny industries in recruiting skilled workers capable of exploiting the power of technology solutions—and the severe power problems plaguing the state that make operation of electrically operated equipment problematic.

Mohd. S. Imran, Category Product Manager for Workstations at HP showed how specialised desktop machines could run design and engineering software much faster and more reliably, and could handle complicated models with ease. Drawing on his extensive experience in working with manufacturing companies, Managing Director R. Natarajan of EGS Computers India described how small enterprises were

already leveraging latest design engineering solutions to quickly deliver customer orders.

Panelist, S. Ramesh, DGM (IT), Ashok Leyland, reflected on the tremendous progress made in the use of IT solutions for auto engineering, and recommended that even tiny companies should aim to use such software through shared service centres in industrial estates. G. Brar, Director, SMB and Commercial Channels, HP India, assured the delegates that his team would help by sharing latest knowledge and best practices to facilitate design and innovation. The event came to close with the vote of thanks by John Joseph, Zonal Manager, HP India. ■



R. Natarajan, Managing Director of EGS Computers India, holds the interest of the packed room with engaging anecdotes and perceptive insights.

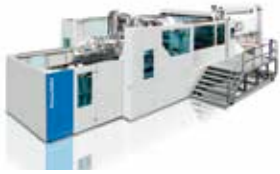


The panelists examined the problems of small manufacturing organisations in leveraging IT—and their solutions. (LtoR) K. R. Gnanasambandan, Vice President, TANSTIA; R. Natarajan, MD, EGS Computers India; S. Ramesh, DGM-IT, Ashok Leyland and Gurpreet Brar, Director, SMB and Commercial Channels, HP India)



Mohamed Syed Imran, Category Product Manager for Workstations and Gurpreet Brar, Director, SMB and Commercial Channels, HP India exchange ideas and views with a delegate.

Moulding Machines



KraussMaffei offers polyurethane systems and injection moulding machines for lightweight components and excellent surfaces.

"Our special solutions in injection moulding machinery and high efficiency with innovative strength were the main factors in the last few years that allowed us to successfully establish ourselves in the Chinese market. KraussMaffei stands for top machine quality, technical and user-oriented innovation and reliable service," said Dr. Karlheinz Bourdon, Managing Director of Injection Moulding Machinery at KraussMaffei.

KraussMaffei's multiple component machines and large machine with compression moulding functions for the production of complex components are used, in particular, in the automotive and electronics industry.

As per the company, with its MX swivel plate and compression moulding machine for multicolour television screen frames and windshields, KraussMaffei has positioned itself on the Chinese market just as successfully as with the CX Multinject for multicolour and multiple component applications in the low and medium clamping force ranges.

Krauss Maffei Group
Tel.: +49 89 88 99 25 92
Website: www.kraussmaffeigroup.com

GRINDING BELTS



Precision and load capacity are absolutely crucial when it comes to quality in the wood, paint, plastic or metal grinding process. ContiTech

Conveyor Belt Group's special feed belts offer a flexible solution to optimise this process.

According to the manufacturer, 'CONTACT' is an important precision element between the feed table, work piece and grinding unit on cylinder and belt grinding machines. The belts significantly influence the quality of the grinding process, and thus the quality of the results. These belts achieve excellent plan parallelism, perfectly straight tracking; have low take-up and low sliding friction between the belt underside and the feed table. They even allow a small drum diameter.

ContiTech
Tel.: +49 511 938 1190
Website: www.contitech.de

SUSPENDED ELECTROMAGNETS



Eriez, the technology supplier for magnetic, vibratory and inspection applications, offers powerful Suspended Electromagnets (SEs) to remove damaging tramp iron from materials conveyed in heavy burden depths on flat conveyors or chutes.

As per the company, with Eriez Series 7000 suspended electromagnets, customers can safely and automatically remove tramp iron from heavy product flows such as wood, coal, or rock being conveyed on belts, vibratory feeders or chutes. UL-listed construction is available on units for use in hazardous and dusty locations. These air-cooled, dry-type electromagnets, also approved by CSA, require no coolant fluids and reduce power consumption by up to 50 per cent. Eriez offers both manual and self cleaning SEs.

Eriez
Tel.: +1 814 835 6000
Website: www.eriez.com



Water Jet Cutter

Jet Edge offers Milestone 5-axis precision water jet cutting machine.

Capable of cutting virtually any material, the Milestone is available in three sizes, 5.5'x6.5' nominal (1700 mm x 2000 mm), 5.5'x13' nominal (1700 mm x 4000 mm) and 6.5'x13' nominal (2000 mm x 4000 mm). It features the IKC 5 Axis water jet cutting head, which is capable of making inclined cuts and controlling kerf to ensure optimal part quality. The IKC's capabilities include 600° rotation, a maximum angle of +/- 60°, and dynamic precision from +/-0.2 to +/-0.5 mm/m, depending on the tilt of head. As per the company, the Milestone's high-precision ground rack and pinion X and Y axes and ball-screw-driven 5.9" Z-axis, make it one of the most accurate water jet systems.

Jet Edge
Tel.: +1 763 497 8700
Website: www.jetedge.com

Programmable Wire Stripper



Schleuniger's new programmable StripCrimp 200 is designed for the high-precision stripping and crimping of side or rear-feed terminals for wires between 30 - 12 AWG (0.05 - 4.00 mm²). The machine can deliver 3.7 tons of crimping force with a variety of programmable stripping functions. It accepts most mini-style applicators, and includes more standard features than most other wire strippers/crimpers on the market.

All stripping parameters and special functions are programmable through a user-friendly, multi-lingual operating panel. The StripCrimp 200 includes a program memory for all stripping parameters and functions.

Schleuniger
Tel.: +1 603 668 8117
Website: www.schleuniger-na.com

'O' Ring Stacking Machine



Elscint Automation offers automatic stacking machine for stacking of 'O' rings. Various sizes of 'O' rings can be stacked in the same machine with some tooling changeover. 'O' rings having diameters from 8 to 60 mm can be stacked. The 'O' rings move upwards on the track of the bowl and are lowered into a metal magazine in front of the Elscint vibratory bowl feeder.

Metal magazines, totaling 6 to 12 in number depending upon the component size are mounted on an indexing table. A sensor is mounted to sense the component level onto the metal magazine. When the components are filled up to the level sensor, the vibratory bowl feeder is switched off and the indexing table moves to the next stage, bringing an empty magazine at the loading station.

Elscint Automation
Tel.: +91 20 27122059
Website: www.elscintautomation.com



POCKET TACHOMETER

The Series TAC3 Pocket Tachometer measures and displays rotational speed of saw blades, grinders, engines, motors, and conveyor belts. According to the supplier, the unique ergonomic design provides direct line-of-sight viewing of display and target. Easy-to-read

5-digit alphanumeric dual LCD also displays on-target, continuous measurement, laser and low battery indication.

The Model TAC3 is a 32 function tachometer/ratemeter, totaliser/counter, and timer. It is programmable to read in English or Metric units. An input socket accepts remote sensing devices and an output socket allows for pulse output to external indicating devices. The Model TAC3 can be tripod mounted and 'locked-on' for accurate and continuous operation. This tachometer also stores minimum, maximum, and last measurement in memory.

Dwyer Instruments
Tel.: +1 219 879 8000
Website: www.dwyer-inst.com



Ball Valves

Flowserve NAF Duball DL ball valve features spring-loaded packing technology. The DL is the addition to the full bore, metal seated NAF Duball valve range. As per the company, its patented Z-trim option improves control behaviour, providing high range-ability,

and also provides anti-cavitation functionality and noise attenuation. A NAF Turnex pneumatic actuator can be mounted on the ball valve and offers an ideal high-performing, vibration-resistant compact valve package providing economical total cost of ownership. The design incorporates new spring-loaded stem packing technology on ANSI class 150 and 300 versions.

Flowserve Corporation
Tel.: +91 9820506190
Website: www.flowserve.com

High-Torque Cutter



The high-torque, low-speed model SCC-15-SS Screen Classifying Cutter reduces hard materials and friable products into controlled particle sizes. A proprietary rotor design comprises the cutter bits attached to a helical array of staggered holders, called

'interconnected parallelograms,' which continuously cut and crush oversize materials against twin, stationary bed knives.

Unlike high-shear cutters that rotate at high speeds, the high-torque cutter is equipped with a direct-coupled, gear-reduced drive that rotates the shaft at speeds down to 10 RPM to cut or crush tough materials using low shear, and/or to minimise fines when cutting friable materials.

The cutter bits, which are available in stainless steel, tool steel and tungsten carbide, can be slid onto holders and secured with one retaining socket-head screw, allowing rapid replacement.

Munson Machinery
Tel.: +1 800 944 6644
Website: www.munsonmachinery.com



Tool Setter

Hexagon offers a full range of products and services in the field of measuring on the machine. Laser Tool Setter LTS35.65-23 is a small instrument designed specifically for use in machines with a limited footprint, such as those used

in dentistry. With an accuracy of 0.2 μm , the instrument can reliably measure lengths and radii on parts with a minimum diameter of 0.025 mm.

TS35.20 is designed for measuring lengths and radii. These are installed in the conventional way, fixed to the table in the machine, and send their signals by cable to the control unit. TS35.30 is useful for measuring lengths. With this, users can measure exclusively tool lengths and tool breakages, especially with drills. The special probe, Touch Probe IRP40.40-LF, is suitable for users who need to measure ever-thinner structures or relatively soft surfaces.

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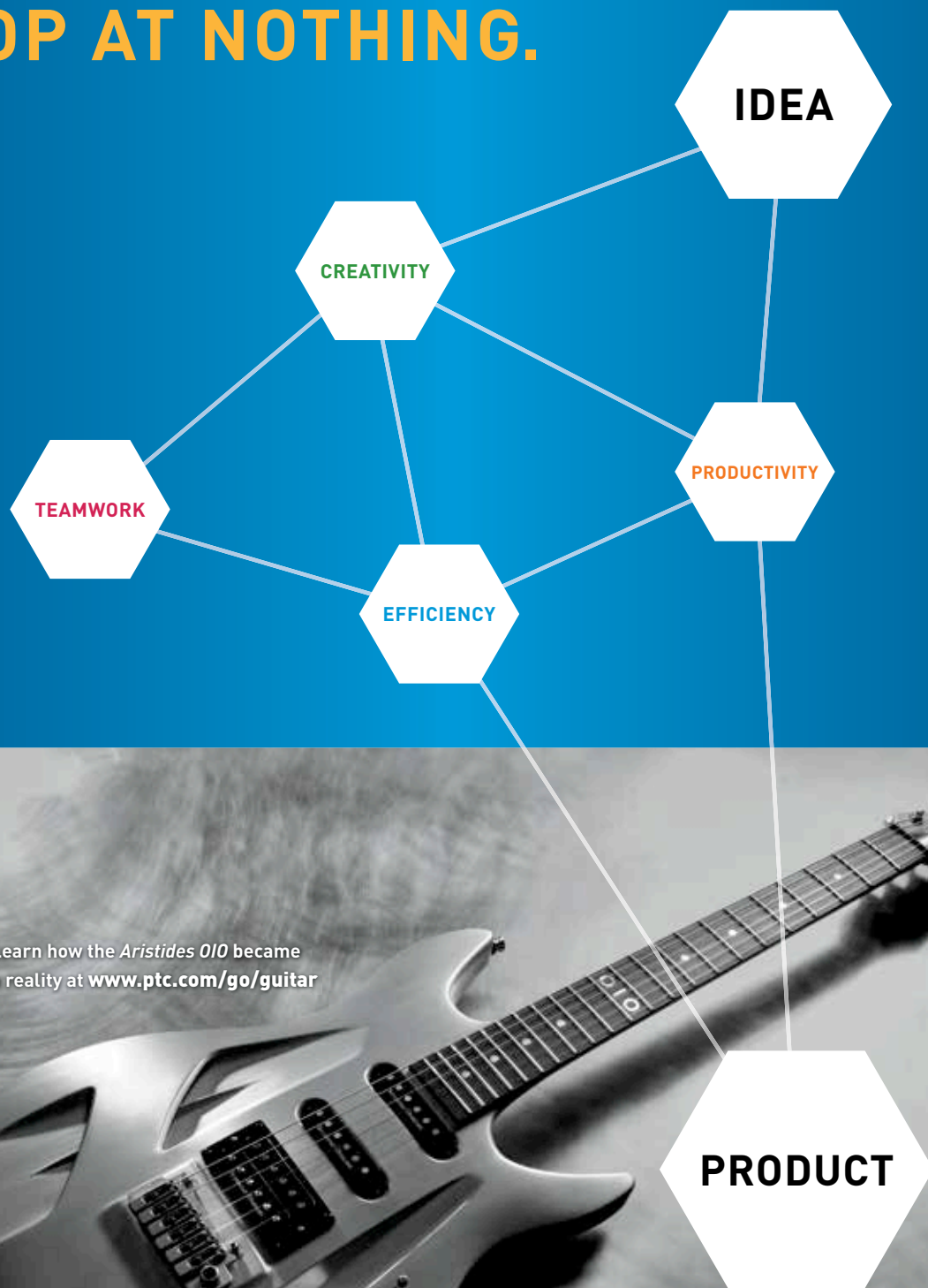


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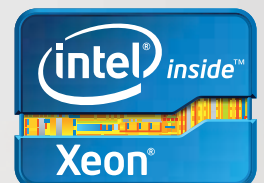
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