



MANUFACTURING PULSE

Brought to you by: CII Naoroji Godrej Centre of Manufacturing Excellence

Inspiration Through Examples

CII has always tried to spearhead initiatives in order to make the Indian manufacturing industry competitive. Jamshyd N. Godrej, Past President, CII; Chairman, CII Naoroji Godrej Centre of Manufacturing Excellence and Chairman & Managing Director, Godrej & Boyce Manufacturing Company Ltd, in a candid conversation, advises on the industry needs and measures that require to be implemented to create a strong global standing.

The Indian manufacturing industry is showing a positive outlook following the popular 'Make in India' and 'Made in India' campaigns. Through all its initiatives and communications, CII aims to direct this industry towards improving India's competitiveness, efficiency, and innovation.

Speaking on the same, Godrej mentions, "The CII Naoroji Godrej Centre of Excellence was set up to provide facilities for education, training and development of executives, managers and workers—to make a better

future for India and Indian industry." Over the years, it has built a large pool of qualified and well experienced faculty and conducts around 70-80 workshops in a year on topics ranging from operations management, Supply chain management, developing people potential, finance, industrial safety, welding, etc.

A fitting platform

Stressing on why this newsletter in its electronic format will help strengthen CII's efforts further, Godrej explained, "The electronic format is one which appeals to

young people and will keep them connected to the manufacturing industry. Being a country that will have the youngest population by 2020, we need to communicate with them through a medium that they are comfortable with."

Also, the need for this platform was emphasized by the fact that the association wants to help the manufacturing industry stay updated on the latest advancements in the most convenient way possible. "There are several examples of wonderful things happening in the industry across different verticals and we are going to highlight these stories and bring them to the forefront," voiced Godrej.

Raising the bar

The e-newsletter will highlight the importance of strengthening processes within an organization by showcasing examples of how some companies are empowering people in their organization. This is in conjunction with a lot of programs conducted by CII such as 'Business Excellence' and 'TQM' that lead to excellence in an organization.

On a concluding note, Godrej avers, "All of this will make the industry more competitive, more efficient, which in turn will allow the industry to grow."

DG's Note



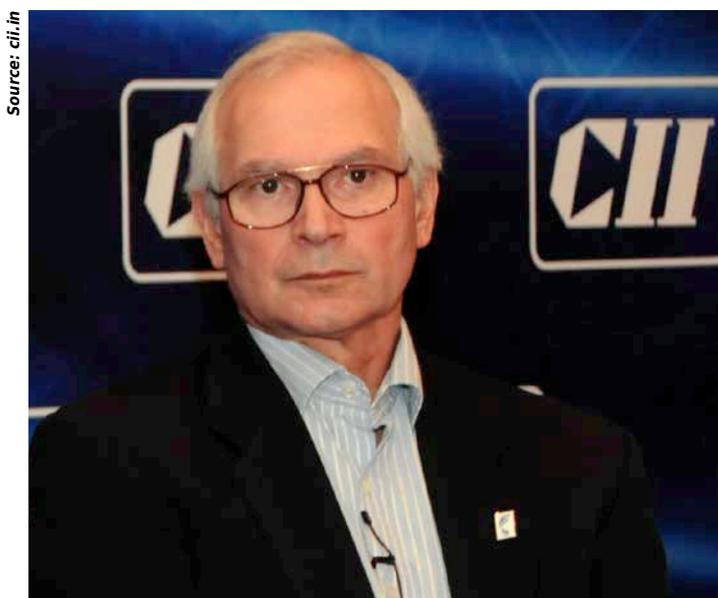
Building Competitiveness

I am pleased to introduce you to the first edition of Manufacturing Pulse—a quarterly update of the latest Developments in the Manufacturing Industry..

Recently, the Government has undertaken multiple steps to boost manufacturing under the 'Make in India' campaign, including comprehensive measures for ease of doing business, attracting FDI in sectors: such as defence and railway manufacturing, and creation of industrial parks and corridors. These are drawing higher manufacturing investments to drive growth. Within this positive scenario, our member companies are therefore recalibrating to align with new trends in technology, quality and sustainability.

We at CII, place high stress on working with the Government to develop conducive policies as well as on working with firms on their competitiveness strategies for the manufacturing sector. CII has initiated the ZED Campaign to boost 'Zero Defect, Zero Effect' manufacturing among Indian enterprises

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Jamshyd N. Godrej, Past President, CII; Chairman, CII Naoroji Godrej Centre of Manufacturing Excellence and Chairman & Managing Director, Godrej & Boyce Manufacturing Company Ltd

Building Competitiveness

along with many other ongoing initiatives. The CII Naoroji Godrej Centre of Manufacturing Excellence, Vikhroli, one of CII's nine Centres of Excellence, has developed a comprehensive suite of services in awareness, strategies and practices for competitiveness.

In this newsletter, we highlight a few examples of good practices, innovations, trends and initiatives we hope would help our members to keep abreast of new developments and get a better understanding about the industry. We hope it would also encourage industry to bring about a positive change within organizations.

We look forward to sharing your positive experiences and your feedback.

Thank you.

Chandrajit Banerjee,
Director General, CII

NEWS

India attractive investment destination

A report by EY, a tax consultancy giant has stated that India is considered as the most attractive market globally by international investors. According to the report, India ranks as the premier choice for investors worldwide, with 32 per cent of respondents ranking it the most attractive market. The report also points out that 60 per cent of respondents placed India among their top three choices for investing.

ADDITIVE MANUFACTURING

The 3D Effect

Currently, additive manufacturing or 3D printing is in vogue across the manufacturing sector. This process in which a product is printed into a solid object by building up numerous layers of material has existed in the market since the past 25 years, but it is only recently that the Indian market has been actively using this innovative technology. The credit behind the rise of this technology in the country goes to the emergence of domestic players.

Imaginarium India, one of India's largest 3D printing setup has helped customers from diverse industries to create 3D printed components or products. One such customer whom they cater to is Precihole Sports Pvt Ltd for making prototypes of air rifles, air pistols and their accessories. Manager-Development, Precihole Sports Pvt Ltd, Azhar Qazi highlights the advantages of this distinct technology. He says, "While producing smaller parts at the prototype stage, 3D printing proves to be economical as compared to CNC machining. As in machining, one has to arrange for special cutters that are small in size in order to machine the small parts. In addition to this, one also has to arrange for fixtures and the part has to be machined in multiple setups." This entire process is time consuming and not feasible. However, if we speak about prototyping larger parts, one can create it quickly but it will be costly as the cost in 3D printing is based on its volume. Qazi continues, "To give you a better understanding, a hollow 3D printed rifle will cost around ₹23,000 whereas a solid CNC machined rifle will cost only ₹7,000! In this case, CNC machining will be a better option to choose as it will take a longer time to create the product but will be a cheaper



CNC machined pistols have to be created in two halves and then joined together to complete the part.



"IPR and sustainability imperatives are one of the issues that need to be addressed in 3D printing."

Director-Technology and Operations, Imaginarium India, Guruprasad Rao



"While producing smaller parts at the prototype stage in smaller industries, 3D printing proves to be economical as compared to CNC machining."

Manager-Development, Precihole Sports Pvt Ltd, Azhar Qazi

option for industries like us." 3D printing has allowed printing of difficult parts that are not possible through CNC machining. Qazi adds, "If one has to create a part through CNC machining that has features on the outside as well as develop curves on the inside, it will not be possible to create it as a whole. It has to be created in two halves and then joined together to complete the part. In this process, a lot of time is lost. Apart from that, one will also require a fixture. However, if one does it in 3D printing, one can print the entire product at one go with all the requirements."

Challenges

Director - Technology and Operations, Imaginarium India, Guruprasad Rao opines, "There are quite a few challenges in 3D printing. First and foremost,



One can print the same pistol at one go with the help of 3D printing.

we do not have many end use materials to choose from. We hope the ongoing researches provide us with a good library of materials. Another major challenge for applications in automobile and aerospace sector is the speed for large size part production. The large time to build is yet another problem with existing technologies. Also, currently the initial costs involved for its growth are high. Intellectual Property Right (IPR) and sustainability imperatives are also one of the issues that need to be addressed. We think one of the best ways to overcome these challenges is to think of hybrid systems. We need to have national and international consortiums to co-create the technology and allow industrial users to test them. The introduction of National policy can encourage such research into material and technology which will hasten the process to be on track, with rest of the world."

In conclusion...

We are eager to see how 3D printing will further evolve in the future. Guess we will just have to wait and watch!

Source: Precihole Sports Pvt Ltd

Best Practices on the Shop Floor

Today's mantra for success and sustainability requires constant improvement. Organizations, in addition to practicing good manufacturing techniques for achieving zero defects, high-quality products, delivery, safety, morale and productivity must also incorporate shop floor practices that may seem simple but will ensure overall growth. Here's a look at some of the practices KK Nag Pvt Ltd have incorporated into their daily routine.

Productivity is the most important aspect of a business that needs to be attained at every level. KK Nag Pvt Ltd shares its shop floor practices. Milon K Nag, Chairman & Managing Director, KK Nag Pvt Ltd, averred, "Best practices are an incremental process whereby small improvements are continuously made by the people who are actually working in those areas and together they have a big impact."

The company believes that

all its improvements made are owing to the Kaizens and Process Improvement. Suggestions made by the members of the company (the difference between a Kaizen and a Process Improvement Suggestion is that the former is submitted after the improvement has already been implemented whereas the latter is submitted only as an idea).

Examples on the floor

An improvement the company has made is its shift from a central store for parts and raw materials to a localized one for each department. "Based on people's suggestions, we changed that and instead of having a central store, we placed all the materials required by one department in that department itself. And instead of having everything locked up, they are displayed in the open," informed Nag.

KK Nag's maintenance de-

partment of its Ranjanga factory showcases another instance of improving productivity. Items like screws are kept in grooves on an inclined surface that is painted green and red. When an item is removed, the rest slide down by gravity. When the items come into the red area, it means that the minimum stock level has been reached and the items have to be reordered. Kanban cards are kept under each item. A person from the purchase comes makes rounds every few hours and picks up the Kanban cards and places a fresh order and the item is replenished. "This may not sound like a big huge deal but it has several advantages such as the vast area required for the central store is eliminated; we do not have dedicated stores staff anymore; it's a highly visible system so there are hardly ever any stock-outs because everybody is aware when an item reaches the red area; a

lot of time is saved by having items within the working area and nobody has to walk half way across the factory to get something, and the amount of paper work is significantly reduced," asserted Nag. Similarly, in the Finished Goods Warehouse of the company, a 'pull' system is in place. Through this system, when a finished good reaches the red level, the Kanban card is sent to the Production Department and they then produce the product.

This ensures that the company has the right amount of stock and to enable prevention of downtime for its customers to not have downtimes.

Outcome

Through these examples one can see that being thorough and constantly improving the processes based on changing scenarios is the best way to ensure saving costs and increase productivity.



KK Nag's facility showcasing machines arranged as per its size.

Source: KK Nag Pvt Ltd

TECHNOLOGY

Digitally Controlled Gripping Modules



Source: SCHUNK Intec India Pvt Ltd

With the SCHUNK PGN-plus-E, the world's first digitally controlled mechatronic gripper with patented multi-tooth guidance, SCHUNK is applying the service package of its new pneumatic do-it-all to the area of electrical handling.

The electric SCHUNK PGN-Plus-E applies the high-performance features of the pneumatic flagship directly in the area of mechatronic handling. The mechatronic universal gripper makes the switch from pneumatic to electric components particularly easy: it has an identical screw connection pattern to its pneumatic counterpart, and the 24-V gripper is easily controlled

via digital I/O. Up to two gripping positions can also be monitored by means of an additional M8 standard connection. Therefore, the universal gripper represents a milestone on the road to efficient, easy-to-use electric handling solutions.

Its use can be found in nearly the entire spectrum of conceivable applications from machine loading in machining centres and foundries to assembly applications in the automotive and electronics industries, and even in the medical and pharmaceutical sectors.

CII Upcoming Programmes

Integrated Manufacturing Practices for Enhanced Competitiveness: Vadodara

19-20 Nov. 2015

Manufacturing Process Technology (in partnership with WMG)

23-27 Nov. 2015

NABET Accredited Lead Auditor Training on EHS Management Systems

23-27 Nov. 2015

Growing Together!

Jyoti CNC Automation Ltd has transformed from developing conventional machines into highly sophisticated CNC machines. Here's a look at how the company helps its customers reach their potential.

Jyoti CNC has always kept the needs of its customer at the forefront for innovation. For instance, one of their customers was machining brass cages at conventional cutting speeds of 150-200 m/min. Having a new machine requirement, the company approached Jyoti CNC. The customer was presented with a solution that enabled higher cutting speeds (up to 700-800 m/min). This translated to the customer gaining in terms of faster production, and cost efficiency as the cost per

component reduced.

The end-user was able to gain several international orders since the incorporation of the solution provided by Jyoti CNC. Since then, the company has placed several more orders with Jyoti CNC to keep up with its business growth.

Helping defence companies

Defence equipment often features critical parts. A certain government institution manufactures critical parts for defence equipment using a special alloy, which

is extremely difficult to machine. The entire process takes over 21 days using more than 20 machines. Most of this part is manufactured on conventional machines and inspection of it is also difficult and critical process.

The institution incorporated a large machining centre from Jyoti CNC, and the same part was made in less than 40 hours and in three setups. Not only was the machining time reduced but the quality of the part was also improved. Furthermore, inspection of component is done within machine itself using inspection probes.

Jyoti helped in providing its customer with various latest technologies such as program generation for collision free machining, a high-pressure coolant system to cut tough material and special cutting tools to reach difficult areas in component manufacture; thus, exponentially improving the output.

Future forward

Jyoti CNC continues to help all its customer reach their potential by paying attention to their needs and providing optimal and customizable solutions.



A glimpse of Jyoti CNC Automation's Indian manufacturing facility.

TECHNOLOGY

Rotary Tables Setting the Way for Innovation

UCAM's R&D team has recently introduced its 'i' series' range of rotary tables. The move

came owing to the company wanting to bring out a solution that was advanced in every way possible but was also cost friendly to its customers.

The 'i-Table' has advanced features such as an enhanced clamping torque, while allowing indexing at higher speed with higher precision, and results in heavy duty machining. Intelligence built-in to sense oil levels, clamp function, motor function and temperature

as well as crash detection; thereby, providing necessary alerts visible by LEDs to avoid further damage and implement quick maintenance. main housing is made of casting, and the electrical and electronic parts are housed in a maintenance free composite cover.

These tables find their use in automotive, general engineering, aerospace, medical electronics and energy sectors.



Source: UCAM Pvt Ltd

NEWS

Stalled road projects get assistance

The National Democratic Alliance government will give a one-time financial assistance to revive 'physically incomplete and languishing' national highway (NH) projects left unfinished by the previous Congress dispensation. The three stalled NH projects, where 50 per cent of the construction has been completed till November 30, 2014, will qualify for this.

Of the three, the government has already received two applications for capital infusion of ₹703 crore for stretches running from Chhapra to Hajipur in Bihar, and Krishnangar to Behrampur in West Bengal.

UK to invest in India for skill development

The United Kingdom government is investing nearly £50 million over five years towards skilling initiatives in India. It will also launch the third phase of the UK India Education and Research Initiative next year with the support of the British Council.

The skilling initiatives will cover government departments like science and technology, human resource development, the foreign and Commonwealth office and more. In addition, the British Council is aligning itself with Digital India as well as the Skill India Mission.