

36 BEING DIGITALLY NIMBLE: IT IS TIME TO TAKE CONTROL OF YOUR ENGINEERING AND DESIGN PROCESS, WRITES AK TYAGI, CMD, NUBERG ENGINEERING LIMITED.



## ENGINEERING, PROCUREMENT, CONSTRUCTION & INFRASTRUCTURE

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OIL MARKETING COMPANIES ARE SLOWLY EMERGING FROM A REGULATED STRUCTURE ACROSS BUSINESSES. AND, THOUGH THE REAL BENEFITS OF DEREGULATION IN THE FORM OF AUTO FUEL MARGIN EXPANSION HAVE STARTED FLOWING THROUGH ONLY OVER THE LAST TWO YEARS, IT IS SET TO RISE FURTHER.

## BEING DIGITALLY NIMBLE

It is time to take control of your engineering and design process, if you want to see positive results in productivity, quality, margins and, most importantly, in your ability to win projects, writes **AK Tyagi.** 



"Automation helps EPC companies to focus on construction execution and related supply chain at an earlier stage, thus compressing timelines and costs. Reduction of manual iterations and inter-department workflow also reduces the chances of errors."

AK Tyagi, CMD, Nuberg Engineering Limited.

PC-LSTK is the process that creates industries and infrastructure – it is the core of core industries; and for years, innovations in the sector were incremental compared to 50-70 per cent productivity growth for the overall economy, as per McKinsey.

However, digitisation and digital transformation is fast revolutionising the industry. Automation, AI, Big Data are serious measures creating allround cost efficiencies in the Engineering and Design phases along with radical downstream improvements in the Procurement and Construction phase. The earlier inertia around capital cost has now turned in to investment for competitive edge and survival.

According to consulting firm Deloitte, more investments will be made in digital technology for better collaboration and more data-driven decision-making. Engineering even simple equipment can require the capture of as many as 15-20 data-points in different formats and recording systems, as we move from the drawing board to installation completion. This gets multiplied exponentially for the complete plant.

A problem in any of the data points can portend a cascading issue and result in delays and losses. Digitisation is helping the EPC industry streamline this whole process and reduce the multiplicity and diversity in the system.

Adoption of cloud technologies is enabling better access to engineering resources spread geographically. Digital tools for EPC Progress Monitoring, Equipment Management, Document Management, Construction Compliance, EPC Reporting and Insights are helping reduce downtimes and compliance lapses. Big Data is helping in smarter design and, coupled with IoTenabled monitoring and maintenance, it is aiding inspections with the ability to point towards possible problem areas.

Automated parametric design and object libraries are improving the design process. Machine learning and cognitive computing will help streamline the procurement process with better matching of demand and supply of construction material and plant equipment. To streamline construction, technologies like digital twins, autonomous rovers, and drones will have even wider adoption.

AI-driven intelligent automation is helping in developing detailed initial design that is more than 95 per cent fit as the final design. It is, thus, enabling real world estimation of requirement of engineering resources,



material, and labour.

Such automation also helps the EPC companies to focus on construction execution and related supply chain at an earlier stage, thus compressing timelines and costs. Reduction of manual iterations and interdepartment workflow also reduces the chances of errors.

Automation includes Open API for integration of in-house document management and configuration systems, etc., close, bi-directional integration of leading 3-D systems for mechanical design, and integration of the design systems of different control engineering suppliers.

According to ISG, "Robotic process automation (RPA) has the potential to streamline business operations for EPC organizations in a big way. The potential to improve business processes with RPA is dramatic given the complex engineering design work, large-scale planning for procurement, and micro-management and scheduling for on-site activities for EPC organizations. RPA software bots can perform high-volume, repeatable tasks previously done by a human offering a significant opportunity to streamline and improve the efficiency of EPC work tasks."

AR and VR are enabling the upskilling of talent as these new areas of EPC require extensive upgradation of processes and people in the EPC industry. Extensive retraining and reskilling initiatives will need to be adopted to retain and keep viable the existing experienced engineering talent because people are the real brain







and backbone of the industry.

This becomes especially relevant as India is on the verge of enormous demand for EPC in the next few years. Investment of ₹8.0-lakh-crore is anticipated in the Indian chemicals and petrochemicals industry by 2025. 'Make in India' across sectors, and India's increased defence self-sufficiency needs will also create urgency for corresponding chemicals infrastructure.

To promote energy-efficient and environment-friendly hydrogen vehicles, the National Hydrogen Energy Mission is being launched. CRISIL has already projected higher growth of 15 per cent for mid-sized EPC players this fiscal.

Even in this rising wave, the larger chunk of the opportunities will be captured by the most digitally nimble. EPC organisations who have embarked on this path of digital transformation are already seeing results in their productivity, quality, margins and, most importantly, in their ability to win projects.

Nuberg EPC are well underway in their quest for digital induced competitive advantage to build on their legacy of 25 years and their benchmarkable global experience of operating in more than 30 countries.