

INDUSTRY 4.0 e-NEWSLETTER

March 2021



CONTENT

	Page No
Foreword by Smt. Alka Arora, Joint Secretary, Ministry of Micro, Small and Medium Enterprises, Government of India	3
Message by Mr. Bhaskar Mandal, Chairman, FICCI Industry 4.0 Committee and Head-Digital Industries, Siemens Ltd, India	5
Message by Mr. Rajeev Singh, Co-chairman, FICCI Industry 4.0 Committee and Partner Management Consulting, Deloitte Touche Tohmatsu India LLP	6
Articles on Industry 4.0	
Leveraging Sustainability as a tool for Competitive advantage in Manufacturing by Karthik Manivachagam, Industry Manager - Manufacturing, Autodesk	8
Sustainable manufacturing thru Industry 4.0 by Mr. Manoj Belgaonkar, General Manager-Quality, Siemens India Ltd.	13
Case Study	
Industrie 4.0 Upgrading to MES or getting into Mess? - Slipups and Sustainability in MES Journey by Md Tarique Ahmad, Head of Sales and MES SME Smart Controls, India	16
Industry 4.0 – Global News	20
Industry 4.0 – India News	25
Announcement of 1st FICCI Industry 4.0 Awards for Manufacturing	28



अलका अरोड़ा
संयुक्त सचिव
ALKA ARORA
Joint Secretary



भारत सरकार
सूक्ष्म, लघु और मध्यम उद्यम मंत्रालय
उद्योग भवन, नई दिल्ली-110 011
GOVERNMENT OF INDIA
MINISTRY OF
MICRO, SMALL AND MEDIUM ENTERPRISES
UDYOG BHAWAN, NEW DELHI-110 011

Dated : 25/02/2021

Foreword

Industry 4.0 technologies are rapidly shaping up the future of Manufacturing by fundamentally changing the factories of today. Manufacturing enterprises, particularly MSMEs are poised to take a giant leap and develop new paradigms for manufacturing by leveraging Industry 4.0 technologies to digitize all levels of business operations and become the frontrunners in this new Industrial Revolution. Globally, Manufacturing firms are gearing up for new and smarter levels of productivity, capability, competitiveness, and innovation by adopting technologies such as Big data, automation, IT-OT convergence, the Internet-of-Things (IoT), artificial intelligence etc.

Currently, MSME sector in India contributes 45% of the manufacturing output and 40% of total exports of the country. More than 6000 products ranging from traditional to high-tech items are being manufactured by the MSMEs in the country. Indian MSMEs will play a huge role in determining future of India's manufacturing capabilities. MSMEs can adopt Industry 4.0 technologies to achieve higher efficiencies, rapid speed, cost reduction, and safer work environments by digitizing all aspects of business operations. Adoption of such technologies will integrate different silos of the business through a seamless network. The technologies have the potential to create additional opportunities for the entire manufacturing value chain, from procurement of raw materials to distribution of products/services, through digital integration.

United Nations sustainable development goals enlarges the definition of development and growth to include eco-friendliness and socially equity. The current fourth wave of industrialization aligns with global goal of conservation of resources. Leveraging AI and automation in factories will lead to continuous improvements, reduction of wastage, and improve sustainability of operations. Smart manufacturing, green buildings, and digitally connected physical systems will introduce energy-efficient and environment friendly factories. Similarly, digitally integrated supply chains will reduce wastage by improving inventory management. Resource conservation through higher efficiency, lowest cost and reduced wastage will also establish a new template for Aatmanirbharta or self-reliance.

I congratulate FICCI Industry 4.0 committee for its initiative of spreading the awareness and benefits of modern technologies through its quarterly e-newsletter. I wish them a great success.


(Alka Arora)

Message of Chair - FICCI Industry 4.0 Committee



Mr Bhaskar Mandal
Chairman
FICCI Industry 4.0 Committee and
Head-Digital Industries, Siemens Ltd, India.

A run saved is worth a run scored is not just true for cricket, it is as much valid in the world of manufacturing.

Reducing waste, adopting lean, light-weighting, reducing energy consumption, reducing rejections, in a nutshell - doing more with less is the key to sustainability.

Digitalization empowers manufacturers to embark on initiatives which make these possible. Reducing weight demands value engineering, sometimes accompanied by material substitution which would need revalidation of intended performance improvement and this can be achieved with digital design and engineering simulation.

Digital twins of products help simulate product behaviour and virtual product testing. Multiple, viable product alternatives can therefore, be evaluated and the most optimum gets selected avoiding expensive physical prototypes. Concurrently, alternative manufacturing strategies for the viable designs are evaluated with the objective of improving operational metrics. Cycle time reduction, improved machine utilization, reduced changeover time, optimum scheduling, improved throughput, reduced reworks and rejections are a few valuable benefits drawn from digital twin of production as shop-floor decisions are validated using digital manufacturing even before the start of production. Digital integration between engineering and manufacturing functions fosters collaboration and improved decision making. Digital twin of performance results in IIoT ready shop-floor complemented by cloud strategy and analytics and it helps achieve first-time right output, on time, at cost and with world-class quality.

All it takes is management's commitment to digital initiatives - to prioritize areas of improvement, support investments and empower cross-functional teams to adopt digital technologies with purpose – to improve products, to reduce waste, enhance operational transparency and most importantly, take decisions based on data. Leaders emerge at all levels to take charge and collaborate to solve problems, morale improves as people realize success, environment of trust fosters as investments show returns and organizations transform as new ways to do things get adopted.

And the best part? All the above is not theory, we have the technologies and proven processes available here with a growing number of first movers already today in the Indian industry, including SMEs who are reaping the benefits of this new Digitalization era. We need to increase the momentum and work towards our vision of a technology enabled Atmanirbhar India!

Message of Co-Chairman FICCI I4.0 committee



Mr Rajeev Singh

Co-chairman
FICCI Industry 4.0 Committee and
Partner Management Consulting
Deloitte Touche Tohmatsu India LLP

Manufacturing has been one of the primary engines driving the India's economic recovery after a Covid-19 induced slump in 2020. Business activity has rapidly improved after months of contraction. The manufacturing industry showed a 0.6 per cent rise in the July-September quarter, followed by a robust growth of 5.2% in the October-December quarter. In FY 2021, the Indian industrial output is likely to expand by 4.5%. As manufacturers keep pace with this recovery rate, they are also fast realising the need to be data driven & agile to meet changed consumer preferences in the post pandemic world. Indian manufacturers are increasingly investing in exponential technologies like advanced analytics, Industrial Internet of things, artificial intelligence and machine learning which is enabling them to better understand consumer preferences, optimize supply chains and develop intelligent operations enabling manufacturers achieve the more from existing assets through extracting higher productivity, efficiency and visibility. To further accelerate this adoption, the Indian government has introduced a plethora of initiatives such as the C4i4 Lab, IITD -AIA foundation for smart manufacturing, I4.0 platform at IISC among others to aggressively pursue the creation of a smart factory ecosystem in the country.

For Indian manufacturers, the events of 2020 have been a wake-up call to develop better digital systems for navigating disruptions like the one we are currently experiencing, and value chain visibility has become the most critical capability for manufacturers to develop. For example, manufacturers experiencing a surge in demand from alternate channels need to ensure visibility across their supply network as they ramp up production and adopting Industry 4.0 enables that end-to-end visibility for them; which means having data available across the supply chain in real time to enable better decisions on risk management and performance improvement. Control tower is one such classic example which increases supply chain visibility & uses artificial intelligence (AI) and machine learning (ML) to identify potential disruptions and optimize resources. Most control towers have a self-correcting workflow that detects issues, assesses alternative actions and makes recommendations on managing the event. The events of 2020 have cast a light on how quickly a manufacturing operation can come to a complete standstill and has also demonstrated how Digital enablement can bring them back to life much faster, organizations which

invented early in digital have been able to address many of the ongoing challenges disruptions faster & better.

In a survey conducted by Deloitte in 2020; manufacturing leaders have identified Digital twin as the most important technology in which their company will invest in 2021 and close second was using augmented reality to improve workforce efficiency and productivity. Digital twins have significant potential to increased operations productivity, reducing development time for new products and avoiding costly defects. However, the greatest opportunity for digital twins in a post– COVID-19 world is their ability to simulate potentially disruptive scenarios & enable the decision making, flexibility and agility that manufacturers may need to respond to the unknowns of the constantly shifting “new normal.

With rapid adoption of industry 4.0 tools; the future will be such that production unit can always be run with minimal human intervention and with machine learning and workflow platforms, intelligent decisions can be made. When this capability is combined with advanced robotics, this could mean a future where factories hum along day and night, with minimal human intervention or any supervision.

This newsletter on Industry 4.0, is our endeavour to share knowledge, ideas and trends that are changing the Industrial landscape in the country and beyond. I am sure as a country we will come out far stronger than ever from these challenging times.

Articles on Industry 4.0



Mr Karthik Manivachagam
Industry Manager -
Manufacturing, Autodesk

Leveraging Sustainability as a tool for Competitive advantage in Manufacturing

The term Manufacturing may refer to a range of human activity, from handicraft to high-tech, but it is most commonly applied to industrial design, in which raw materials from the primary sector are transformed into finished goods on a large scale. Majority of these manufactured products are discarded when they stop working. Global manufacturing economies have over the years, adopted model of buy, use and dispose which is leading to harmful impacts on our environment.

A 2019 United Nations report published in 2019 warned that CO₂ emissions must be cut nearly in half by 2030 to safeguard the planet from additional threats of climate change. For executing all our mitigation strategies that is just 10 brief years.

The design and manufacturing industry is thus being challenged to answer a critical question: Is there a way to meet growing consumer demands without causing irreparable harm to our environment and ourselves?

- Over 50% of the climate-changing emissions in our atmosphere today were released in the last 22 years.¹
- 19% of them can be traced directly back to the manufacturing industry.² [Figure 1]

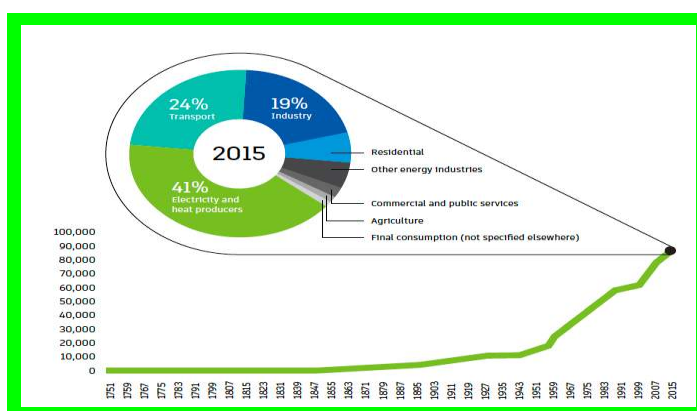


Figure 1 : Global annual CO₂ emissions and CO₂ emissions per Industry (Million tons)

¹Boden T; Marland G; Andres R J, (1999) "Global, Regional and National Fossil Fuel CO₂ Emissions," 2017, data.ess-dive.lbl.gov.

²iea.org

Indirectly, manufacturing Industry is responsible for much larger proportion of emissions than any other industry. This Industry creates all the machines that other industry use to produce goods- from vehicles in transportation sector to heating and lighting systems in construction sector- all of which contributes to climate change and its impact. It is estimated that by 2050, the growth in population and associated demand for consumer goods will require at least 2x the energy³ and material⁴ currently used.

Without a doubt, time for change is now. Sustainable manufacturing is an emerging Industrial trend with achievable long-term goals. It is primarily driven by need for changing business and manufacturing practices, as well as the mindset of stakeholders, to mitigate the industrial impact of climate change and other environmental concerns.

Traditionally Indian manufacturing companies have followed a linear process in product design and manufacture covering stages from concept design to engineering to manufacturing and sales before being retired from market.

We are all aware that the world has become increasingly connected and digital which, for our customers, creates unprecedented levels of competition and complexity, making it harder for them to do business than ever before. But at the same time, new opportunities are being created that have never existed before. So, to meet those challenges, and those opportunities, our customers must adapt the way they design and manufacture their products, and this is where digital technologies can play a part.

What we tend to see is companies looking for specific technologies to drop into their existing linear process to drive productivity. But unfortunately, this isn't enough on its own to make a long-term sustainable difference to the business for two reasons;

Firstly, focusing on productivity alone may help remove cost and risk from their process, but it will not change the fundamental nature of the business, which is to develop and sell products for a fixed value. If a company finds its products becoming more of a price driven commodity, then investing in producing more of them, more efficiently will only result in flooding their market with increasingly lower cost products, creating a race to the bottom.

Secondly simply dropping technology into any one of production stages may have a positive impact for that team but it is very likely to create issues both up and downstream of that stage. There are tangible ways to drive sustainable practices both within manufacturing facilities, across the supply chain, and through the customer base. The Fourth Industrial Revolution and Industrial Internet of Things (IIOT) presents new opportunities to unlock process innovations to develop sustainable, environmentally-friendly materials; decarbonize energy; tap digital innovation for doing more with less; and extend the life cycle of goods within a "zero waste to landfill" framework.

In response to these forces of change, Manufacturing companies can explore ways to translate their ambitious sustainability goals into actionable outcomes that reduce waste and energy. Autodesk technology can help identify solutions in the following areas.

Material Efficiency

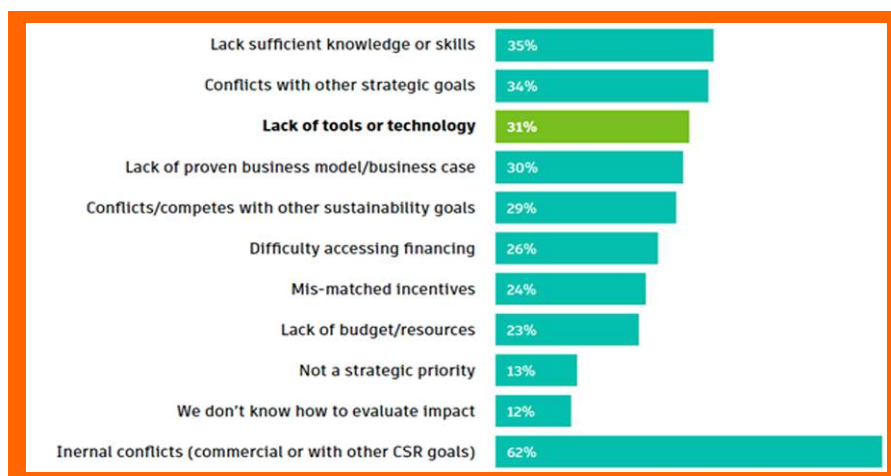
Material efficiency in industrial production can be defined as the amount of a specific material needed to

³Ari Kahan, "EIA Projects Nearly 50% Increase in World Energy Usage by 2050, Led by Growth in Asia," 24 Sep. 2019, eia.gov.

⁴Julian M. Allwood, Michael F. Ashby a, Timothy G. Gutowski b, Ernst Worrell, "Material Efficiency: A White Paper," Jan. 2011, sciencedirect.com.

produce a product. Material efficiency can be achieved through multiple strategies for our customers, including:

- **Lightweighting:** Reducing the amount of material in a product
- **Material alternatives:** Switching materials for lighter, better performing, or less environmental harmful materials



- **Circularity:** Designing products to be disassembled into components, parts, or materials that can be reused, recycled, or remanufactured in order to reduce waste and pollution
- **Zero-waste manufacturing:** Reducing waste to landfill during the manufacturing process

Figure 2 - Main challenges within organizations to becoming more circular businesses⁵

Energy Productivity and Emissions -

Energy productivity aims at reducing energy consumption of a product and/or its manufacturing process, and this can be achieved through:

- **Product energy efficiency:** Designing products to generate as much useful power using as little energy as possible
- **Electrification:** Switching traditional energy sources to electricity by utilizing batteries
- **IoT, smart manufacturing:** Deploying sensors and smart technologies to improve performance, predict and schedule maintenance, and reduce breakdowns and machine downtime

Supply Chain Resilience

Supply chain resilience is the supply chain's ability to be prepared for unexpected risk events, responding

⁵Kathy Shields, "Going Circular: How Global Business is Embracing the Circular Economy," 2019, d.newsweek.com

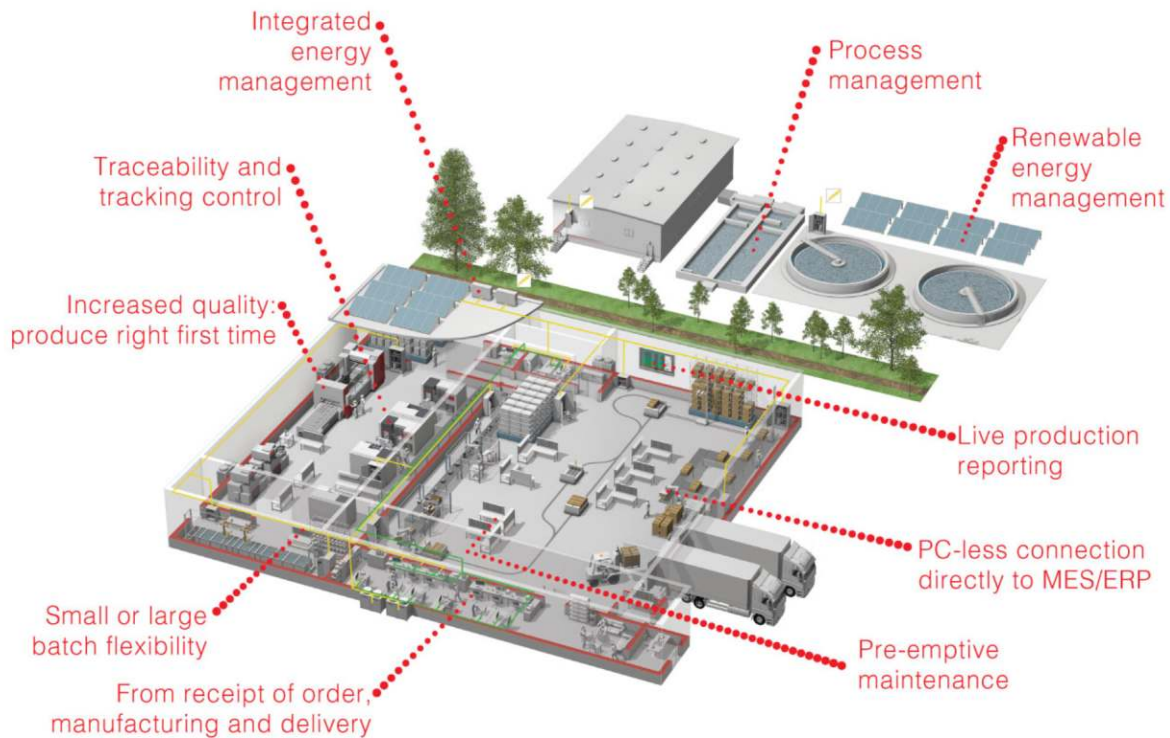
and recovering quickly to potential disruptions such as environmental catastrophes or pandemics. This can be achieved through:

- Responsible procurement: Employing a grading system to regulate a supplier's social and or environmental behaviour
- Environmental standards and regulations: Complying with environmental regulations and other standards to demonstrate transparency, safety, and accomplishments
- Product traceability and blockchain: Using new technologies like IoT & blockchain to support traceability within the product lifecycle to mitigate issues and enable new business model like take-back programs.

Sustainable manufacturing is more than leveraging high-tech technology, and pushing for energy efficient processes. It requires a fundamental change in the way goods are produced / manufactured. We know the traditional manufacturing journey is linear: a straight path from cradle to landfill in which products are made, used and discarded.

Sustainable manufacturing journey, by contrast, is circular. It's time to reshape the status quo by moving beyond the 3R approach of "reduce, reuse, recycle" toward a 5R approach: "repair, reuse, refurbish, re-manufacture, and recycle" thereby driving an optimized usage of the resources and an extended life of products. Transforming the manufacturing Industry has never been important and urgent as it is today. Achieving "zero waste to landfill" is definitely possible.

Together let's create Smart Factories



Empowering your Industry 4.0 initiatives

Each manufacturer faces their own set of unique challenges, not least is finding a scalable solution that fits their budget and existing environment. The e-F@ctory initiative by Mitsubishi Electric is designed to do just that. Working with the network of e-F@ctory Alliance partners, we tailor make a wide range of solutions that leverage Factory Automation and the FA-IT interface. Powered by your partnership with the industry's leading solution providers, you have both a practical solution for today's needs and a foundation to meet the challenges of the fourth industrial revolution.

 e-F@ctory

MITSUBISHI ELECTRIC INDIA PRIVATE LIMITED

ICC-Devi Gaurav Technology Park, Unit no. 402, Fourth Floor,

Opp. Vallabh Nagar Bus Depot, Pune – 411018, Maharashtra, India.

Toll-Free No. : 1800 102 9603 | Email : MEI-FAID-INFO@asia.meap.com

Website : <https://www.mitsubishielectric.com/fa/sols/digital-manufacturing/en/index.html>

Sustainable Manufacturing thru Industry 4.0



Mr Manoj Belgaonkar

General Manager
Quality, Siemens India Ltd.

Organizations in the era of 4th industrial revolutions use data gathered to strongly differentiate. Early adopters of industry 4.0 solutions are using the quality and productivity levers to be able to deliver personalized products at the costs of mass production. With increased awareness about climate issues such as environment unfriendly production processes, waste/pollution generated, etc. many customers are becoming conscious about the same. Firms need to provide answers to the questions such as

- amount of energy used,
- waste / pollution generated,
- can these products be retrofitted to increase its useful life span?
- at the end of product life cycle, how materials used will be recycled to make next generation of products

Industry 4.0 elements allow us to gather much more granular data about the finer aspects of the value addition processes as never before. As productivity and agility of manufacturing systems increases, the necessity for better understanding and controlling the sustainability related impacts of those systems increases.

Adoption of industry 4.0 elements to sustainability issues can be called as Sustainable manufacturing (SM) or green manufacturing for our purpose. Broad definition of sustainable manufacturing can be as – “a method for manufacturing that optimizes resources, reduces waste and minimizes the environmental impact”.

To integrate Sustainable goals over the product life cycle means their integration from early stage of the product design. Products are designed to be durable, reusable and recyclable and materials for new products come from old products. Digital twin and virtual simulations provide tools for the modeling and simulation around these aspects.

Integration of sustainability thru design and control of manufacturing processes, is about a system that

integrates sustainability aspects during technology planning, process planning, manufacturing and control. Thus, leading to maintain the highest value of material and products over life cycle of the products.

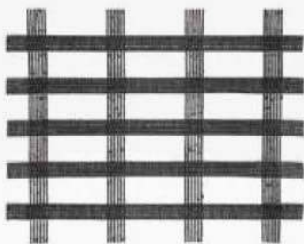
To begin with, organizations need to measure production data in terms of the electricity used, compressed air used, heat generated during production processes, at the end of production aspects of waste / pollution generated, greenhouse gas emission effected across the supply chain. Measurement science for manufacturing sustainability is not as mature as for time and cost and is an active area of research. This needs careful selection and close partnership with the technology provider to get insights from the data.

Industry 4.0 enables organizations to identify, quantify, assess, and manage the flow of resources in such a way as to reduce environmental impacts. Ultimate objective of sustainability is to reduce the environmental impact to the limits of the self-recovery capability of the Earth could deal with while also trying to maximize resource efficiency.

Advanced digital production technologies associated with industry 4.0 have positive impacts on environmental sustainability which in turn can also bring dividends and improve capital use. These types of technologies are expected to boost circular economy processes, decoupling natural resources use from the environmental impact of economy growth. These in turn supports the achievement of SDG 7 for energy, SDG 12 for sustainable consumption and production and SDG 13 for climate change.



We manufacture **35 lakh sqm**
of StrataGrid™ monthly.
That's enough to spread over
205 cricket fields!



Strata has always worked hard to fulfil India's growing infrastructure needs. Thanks to the relentless support from all of you - our partners, clients, and employees - we have recently enhanced our monthly geogrid manufacturing capacity to **35 lakh sqm**, including our special **5.7 m wide PET geogrid**, making us the **number 1 manufacturer of geogrid** in India and an integral part of India's continuing infrastructure boom.

That's a hat-trick of reasons to choose Strata for your next project.



www.strataindia.com



technical@strataindia.com



Case-Study

Industrie 4.0 Upgrading to MES or Getting into Mess? Slipups and sustainability in MES journey



Md Tarique Ahmad
Head of Sales and MES SME
Smart controls, India

Introduction

In the vision of adding digitalization flavor most of the manufacturing industries are already on the path to upgrade the factory by furnishing the ISA Level 3 with MES. In the NEW Normal the world is changing on every aspect so as the policies, processes, operations, quality, regulatory norms of Manufacturing industries. Having a digital factory is no more a luxury it is the necessity. MES is fascinating for today's manufacturers for several reasons. To provide real-time visibility and complete control over shop floor operations and executions with high level of error proofing. The value what customer gets from MES is truly cross-functional, benefitting shop floor to the top floor.

At the same time, most of the manufacturers do not have room for failure regarding technology advancement in terms of man-money-material. They must get it right the first time. Altogether the complexity of MES implementation is critical unless the right requirements with right tool, right design is sitting on right architecture.

Are you ready?

We , Smart controls during implementation of MES and other Layer 3 solutions for multiple industries realized the key to achieve the MES successful implementation and making it strong enough to sustain the dynamicity of the manufacturing world does not require only the functional or technology expertise. The journey to achieve the true Smart factory doesn't limit at MES level but it requires the cooperation and integration from all the layers and existing solutions. Studying the plant, defining the boundaries, designing the integrated solution plays crucial role on a successful MES implementation and execution. When we talk about making factory digital industry, the area of scope for Level 2 (SCADA), Level 3 (MES) and Level 4 (ERP) must be defined very clearly. The dynamic nature of production scheduling must be addressed very carefully.

The success depends on the combination of domain knowledge, technology expertise and scope boundaries while designing the system. Let us see the various aspects of MES implementations to avoid the slippage occurs while advancing to Industrie 4.0.

Solution Boundaries

The ISA Level 3 consists of multiple solutions assisting different functionalities. The scopes for all the solution must be clearly defined to avoid the overlaps and redundancy in the design. In the current technical evolution era, every solution is advanced enough to cover other area's pain points. When designing the system requirements, the scope must diligently include only the functionality which should be handled in MES or respective systems. The similar due diligence is required for ISA other layer systems Level 2 and Level 4. For example, Certain Error proofing and controls must be handled at Level 2 instead of controlled at other systems.

Domain Expertise

Team's wide expertise on domain gives very strong hand in requirement gathering, filtering, and shaping the requirements. It helps the client as well as the implementation team in freezing the requirement on early stage and avoiding last moment changes. Even if there is a small change in the last moment it costs big impacts in solution stability. The domain expertise and functional knowledge makes the design more viable and effective with the help of proper requirement shaping.

Organized/Supportive Control Layer

The control layer (PLC and SCADA) team's late onboarding and unfrozen agreements with the scope is one of the major bottlenecks in achieving the timeline and reducing the complexity. Awareness at the Control layer makes the smoother implementation and factory testing. The complete understanding of what is the requirement and what is the role of the OEM's with frequent communication is key point to close the unwanted last-minute changes and limitations.

Solution Designing

This is the combined outcome of all above points, because of domain expertise and solution boundaries team will be able to define the right MES Scope and boundaries. With the help of structured control layer and technical expertise it will be easier to design the right MES solution in more feasible and effective way.

Solution design to be done keeping the dynamicity of manufacturing world to adjust and accommodate the changes. The solutions designing to have strong communication with all the respective stakeholders to align to most practical and best feasible approach.

Development Strategy

As the solution requires multiple technologies and stakeholder from different Levels to the same level and different modules. Before the implementation starts the right point of contacts and stakeholders to be identified with the clear responsibilities. The decision makers to be aligned from the starting of implementation. Frequent and async mode communication to be promoted to avoid the dependencies and increase the velocity of the team.

Deployment Strategy

The deployment strategy of the such complex and heavy solutions must be done in phase manner instead of all modules in day one. The business, technology and MES Team must plan the deployment strategy with analyzing all the possible and practical scenarios taking place in factory. Deployments must be planned for modules in phases and in proper sequence for the ease of customer without any production loss and with providing ample amount of time to customer to get used to of the new changes in day to day working behavior.

Train and Maintain

MES implementation not only integrates the machines and different solution but also it helps the shop floor execution where the resources use it for their day to day activity. Bringing MES in industry is bringing a new culture in shop floor which demands proper planning and execution for the stability and adjustments to accommodate the cultural changes. MES being one heavily integrated solution it requires extensive user training. Proper training enables user faster and makes the system stable. While defining the training strategy, all the stakeholders and their respective knowledge sessions should be planned.



Ultra International Limited
Fragrances, Flavours & Essential Oils

EXPERIENCE
Pure Luxury of Natural

Saffron

ELIXIR

Saffron is a unique spice that is derived from *Crocus sativus* flower, native to Eastern Mediterranean and India. Apart from being used for its colour and mild flavour, saffron also has a number of health benefits.

APPLICATIONS :

BAKERY
BEVERAGES
CONFECTIONERY
DAIRY
SNACKS
PERSONAL CARE
PHARMA / NUTRACEUTICALS



Global News alerts on Industry 4.0

Explore 3 IoT trends in healthcare for 2021

The COVID-19 pandemic forced people and organizations to face new challenges and concepts -- such as social distancing -- and prioritize technologies such as cloud, IoT and AI that push technologists to explore new use cases. This trend places IoT as a big technology for healthcare in 2021 and beyond.

Source: https://internetofthingsagenda.techtarget.com/feature/Explore-3-IoT-trends-in-healthcare?track=NL1843&ad=937199&asrc=EM_NLN_143632388&utm_medium=EM&utm_source=NLN&utm_campaign=20201229_Healthcare%20IoT%20adoption%20and%20IT/OT%20convergence%20to%20increase%20in%202021

Lessons from the best 5 IoT blogs of 2020

In 2020, the IoT industry shifted its focus to adapt during the COVID-19 pandemic, where the top priorities were to keep people safe and healthy and to find better protocols through technology.

Despite the difficulties that organizations faced, the pandemic forced IoT innovations and accelerated the development of new use cases. Organizations applied IoT technology to better track the movement of people, vehicles and goods and implemented networking and AI.

Explore the topics IT admins were most interested in learning about IoT in 2020 with the top five IoT blogs and see where IoT can take organizations over the next few years.

Source: https://internetofthingsagenda.techtarget.com/feature/Take-lessons-from-the-best-5-IoT-blogs?track=NL-1843&ad=937275&asrc=EM_NLN_144115076&utm_medium=EM&utm_source=NLN&utm_campaign=20210105_Learn%20from%20the%20top%205%20IoT%20blogs%20of%202020%20to%20prepare%20for%20a%20new%20year

Trends push IT and OT convergence opportunities and challenges

Many discussions of IT/OT convergence highlight its challenges, such as security and scalability, but new technologies and lessons learned in both IT and operational technology create opportunities for innovation.

Source: https://internetofthingsagenda.techtarget.com/feature/Trends-push-IT-and-OT-convergence-opportunities-and-challenges?track=NL-1843&ad=937275&asrc=EM_NLN_144115082&utm_medium=EM&utm_source=NLN&utm_campaign=20210105_Learn%20from%20the%20top%205%20IoT%20blogs%20of%202020%20to%20prepare%20for%20a%20new%20year

Microsoft and STM accelerate IoT development

Swiss semiconductor firm ST Microelectronics has signed an agreement with Microsoft to simplify and accelerate the development of smart-appliance controllers and other IoT devices.

Developers working with STM32 microcontrollers (MCU) can now leverage Microsoft Azure RTOS (real-time operating system) to provide ready-to-use services for managing their application. Seamlessly

connected to the STM32 Cube development ecosystem, which consolidates tools and software to support projects from start to finish, Azure RTOS will be fully supported and all licences are free for images deployed properly on STM32 microcontrollers, including prototyping and volume production.

Source: <https://www.iotm2mcouncil.org/iot-library/news/iot-newsdesk/microsoft-and-stm-accelerate-iot-development/>

Vodafone and AWS combine MEC and 5G

Vodafone Business is working with Amazon Web Services (AWS) on a service that combines the quick response times of distributed multi-access edge computing (MEC) technology with the fast speeds of 5G.

Vodafone is the first company in Europe to let organisations create pilot applications using distributed MEC with AWS. This is made possible by embedding AWS Wavelength at the edge of its 4G and 5G networks to bring its customers and key applications closer together.

In collaboration with AWS, Vodafone Business' distributed MEC service will be rolled out from spring 2021, starting with the first commercial centre in London, with other locations in the UK and Germany to follow. These will give businesses, application developers and independent software vendors a start in developing digital services and access to real-time analytics so they can respond better to events and end-user needs.

Source: <https://www.iotm2mcouncil.org/iot-library/news/iot-newsdesk/vodafone-and-aws-combine-mec-and-5g/>

Nokia extends IoT agreement with AT&T

Nokia has extended its agreement with AT&T to support global enterprises with IoT connectivity using its Wing and IoT ecosystem.

AT&T's enterprise customers will be able to connect and manage a multitude of IoT devices on their networks, leveraging Nokia Wing's capabilities, including increased performance and flexibility, and lower latency. Wing stands for "worldwide IoT network grid".

As a managed IoT service, Wing provides global connectivity for all major regions with the benefits of regulatory compliance and cost control paired with real-time device management. The collaboration with Nokia enables AT&T to extend its footprint and bring local capabilities to any enterprise operating globally.

Source: <https://www.iotm2mcouncil.org/iot-library/news/iot-newsdesk/nokia-extends-iot-agreement-with-att/>

Ursalink deploys LoRaWan to monitor tea quality

A LoRaWan sensor network from Chinese firm Ursalink is being used for tea processing monitoring to guarantee product quality in Wuyishan. The history of Chinese tea is a long and gradual story of refinement. Generations of growers and producers have perfected the Chinese way of manufacturing tea.

There are two to seven procedures involved in the processing of fresh tea leaves, such as withering, fixing, oxidation, rolling, drying and aging. Each of these procedures requires high accuracy and high stability in temperature and moisture controlling to avoid spoilage due to excess moisture and fluctuating temperatures.

Source: <https://www.iotm2mcouncil.org/iot-library/news/iot-newsdesk/ursalink-deploys-lorawan-to-monitor-tea-quality/>

IoT device management to grow rapidly, says Berg

Growing at a CAGR of 32 per cent, yearly sales of IoT device management and application enablement services are forecasted by market watcher Berg to reach \$7.9bn in 2024.

According to the research report, the global market for IoT device management and application enablement platforms was worth \$2.0bn in 2019.

IoT platforms provide middleware to connect and manage devices and integrate collected data into various applications and services. These platforms are intended to reduce the cost and development time for the IoT by providing standard components that enterprises can build upon.

Source: <https://www.iotm2mcouncil.org/iot-library/news/iot-newsdesk/iot-device-management-to-grow-rapidly-says-berg/>

Vodafone helps businesses adopt IoT

Vodafone is making it easier for businesses to adopt IoT technology to track, monitor and manage assets, as part of the offering that the latest addition to the group, South Africa-based IoT.Nxt, brings to the company's portfolio.

The complete offering delivers devices and sensors, a single data management platform, and professional services to businesses of any size. Key markets for IoT include utilities, logistics, public transport, healthcare, manufacturing and building management, as Vodafone releases a report on the benefits of the digital building approach

Source: <https://www.iotm2mcouncil.org/iot-library/news/iot-newsdesk/vodafone-helps-businesses-adopt-iot/>

IoT malware attacks up 30% in 2020, says SonicWall

There has been a 30% increase in IoT malware attacks last year, a total of 32.4 million worldwide, according to SonicWall Capture Labs. Covid-19 has led to an unexpected flood of devices on networks, resulting in an increase of potential threats to companies fighting to remain operational during the pandemic.

Most IoT devices – including voice-activated smart devices, door chimes, TV cameras and appliances – were not designed with security as a priority, making them susceptible to attack and supplying perpetrators with numerous entry points.

Source: <https://www.iotm2mcouncil.org/iot-library/news/iot-newsdesk/iot-malware-attacks-up-30-this-year-says-sonicwall/>

AI and how manufacturers can embrace it

During an interactive discussion session, Michael Gleaves and Hassan Khalid revealed the most suitable industrial applications for artificial intelligence and ways to achieve a true return on investment.

Source: <https://www.themanufacturer.com/articles/ai-manufacturers-can-embrace/>

How 5G Is Fueling the Internet of Things to Build a More Resilient World

TO BUILD A truly transformative 5G wireless network, engineers have to picture the future. How might people, communities, and businesses use the new wireless platform? What if lives depend on it?

The trailblazers at Qualcomm Technologies, Inc., the world's leading wireless technology innovator, took an approach that went way beyond: "If you build it, they will come." To create the new generation of wireless networks, they invented the technologies of the future that define it, working with a wide range of industries to make almost everything—from a mobile computing platform poised to revolutionize remote education to working models of wireless smart factories. Their inventions helped establish a 5G platform that will contribute to innovations for the next 10 years and beyond

Source: <https://www.wired.com/sponsored/story/how-5g-is-fueling-the-internet-of-things-to-build-a-more-resilient-world/>

Probably the only way to memorize our entire product range



We believe that when it comes to decor there should be a different product for every need and taste. Only then you can create something you love. That's the reason why we put in our best efforts to offer you a wide range of products. From Laminates to Plywood, WPC and PVC Boards to Doors, Cladding to Block Boards; we have such an extensive product range that you'll have a hard time memorizing it.



www.amulyamica.com | crm@amulyamica.com | Call Us: 1800 233 1468

India News alerts on Industry 4.0

India plans PLI scheme for manufacturing of Wearables, AI, IoT

India is planning a big push for the domestic manufacture of new technology devices – including wearables (smartwatches/ fitness trackers), hearables (in-ear wireless hearing devices), drones, virtual/augmented reality and Internet of Things products – in the country this year.

The Ministry of Electronics and IT (MeitY) is in the process of chalking out an incentive scheme for manufacturing such devices and expects to launch it in the coming months.

Source: https://economictimes.indiatimes.com/tech/technology/big-incentive-scheme-coming-for-wearables-hearables-iot-devices-and-drones-in-2021/articleshow/80099878.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

IoT-based start-up empowers farmers with crop data

Data is indispensable for businesses today. It mitigates risk and helps them take action to plug gaps and channel their resources accordingly. Would it not be a boon for small farmers too and make agriculture profitable? That's what drove two young techies from farm families to set up Fyllo, a Mumbai and Nashik-based startup that offers farmers a data-driven decision support system on a mobile app by capturing information from the field.

Source: <https://yourstory.com/2021/01/iot-based-agritech-startup-empowers-farmers-provide-crop-data>

Industrial revolution 4.0: Cyber security challenges and solutions

That humanity has stepped into the era of Industrial Revolution 4.0 is a given. To explain, Industry 4.0 is a standard term to depict the fourth-generation industrial revolution that we are experiencing nowadays. With each passing day, the latest technologies such as cloud-computing, IoT and robotics are disrupting the traditional manufacturing process, as we know it.

With automation, IoT and data analytics making production processes smarter, intelligent and more productive, the Industrial Revolution 4.0 has been demonstrably evident. To all intents and purposes, it is this transitional shift to digitization and automation is what everyone is calling 'Industry 4.0' era.

Source: <https://www.dqindia.com/industrial-revolution-4-0-cyber-security-challenges-solutions/>

India's 3rd skill university to start this year

Assam Skill University, the country's third such institution, will function from this year, Skill, Employment and Entrepreneurship Minister Chandra Mohan Patowary said. The ADB-funded \$112 million university campus will come up at Mangaldai. Till the complex comes up, the university will function from a temporary campus, Patowary told The Assam Tribune, adding that the process to appoint the vice chancellor and other academic and administrative faculty is on.

According to the initial plan, the university will offer courses on varied subjects like agriculture and allied activities, bamboo and tea, design and media, engineering, food processing, healthcare, business and services, short-term training, tourism and hospitality, wellness and care, vertical transportation and logistics, etc. Patowary said the university will also introduce latest courses on Industry 4.0 – the current trend of Artificial Intelligence automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of Things and cloud computing.

Source: <http://www.assamtribune.com/scripts/mdetails.asp?id=jan0921/at063#:~:text=GUWAHATI%2C%20Jan%208%20%2D%20Assam%20Skill,will%20come%20up%20at%20Mangaldai>.

Australia-India Cyber and Critical Technology Partnership: Grant Round 1

About the program

The \$12.7 million Australia-India Cyber and Critical Technology Partnership (AICCTP) contributes to Australian Government priorities to promote a stable and prosperous Indo-Pacific. The AICCTP complements the Australia-India Framework Arrangement on Cyber and Cyber-Enabled Critical Technology Cooperation signed by Australia's Minister for Foreign Affairs Senator the Hon Marise Payne and India's External Affairs Minister Dr S. Jaishankar as part of the Australia-India Comprehensive Strategic Partnership announced during the Leaders' Virtual Summit on 4 June 2020.

Source: <https://india.highcommission.gov.au/ndli/AICCTP.html#:~:text=Australia%2DIndia%20Cyber%20and%20Critical%20Technology%20Partnership%3A%20Grant%20Round%201,-Australian%2DIndia%20Cyber&text=The%20%2412.7%20million%20Australia%2DIndia,stable%20and%20prosperous%20Indo%2DPacific>.

Agriculture 4.0: Agriculture and Environment Monitoring

Agriculture 4.0 is a new approach towards farm management and precision agriculture using technology, including sensors, smart tools, satellites, the IoT, remote sensing and proximal data gathering. Sensors empower farmers to react quickly and dynamically maximise crop performance. Global population growth, global warming, climate change and food security are among the most challenging problems around the world. Farmers need to increase their yields by about 50 per cent by 2050 to be able to feed the world, says Food and Agriculture Organization (FAO) of the United Nations (UN).

Source: <https://www.electronicsforu.com/technology-trends/tech-focus/agriculture-4-environment-monitoring>

Industry 4.0 Solutions For New-Age Railways And Airways

There is no established path for success of any emerging technology, but creating a roadmap can help the rail and aviation industries to bring a more digital and connected future. The need for these industries to be smart is there because Industry 4.0, or the fourth generation of industrial activity, ensures reliability and safety to these sectors. With automation of the manufacturing industry, these sectors will realise efficiency, capacity and cost benefits of Industry 4.0.

Source: <https://www.electronicsforu.com/technology-trends/tech-focus/industry-4-solutions-railways-airways>

7 tech trends we'd like to see in the 2020s

The world saw technological acceleration in 2020 and many areas like Cloud, Work From Home, OTT, online education etc received a fillip. Here's hoping that tech pervades deep into other essential areas in 2021 and beyond.

Source: <https://www.ciol.com/7-tech-trends-wed-like-see-2020s/>

Cyberplanning: Securing the IoT ecosystem

State-sponsored data breaches have become one of the significant pain points for the Indian government and companies. Recent attacks on utilities and data breaches for some large consumer tech start-ups show that India needs to tackle this issue seriously. Moreover, this issue is compounded by the fact that the country does not have any standards to secure the internet of things and connected ecosystems. There are no baseline tests to certify such products.

Source: <https://www.financialexpress.com/industry/technology/cyberplanning-securing-the-iot-ecosystem/2163357/>

What Is Driving Asia's Technological Rise?

Asia is a technological force to be reckoned with. Over the last decade, the region has accounted for 52% of global growth in tech-company revenues, 43% of startup funding, 51% of spending on research and development, and 87% of patents filed, according to new research by the McKinsey Global Institute (MGI). How did Asia get here, and what lessons does its success hold for the rest of the world?

Source: [https://www.project-syndicate.org/commentary/asia-technological-rise-collaboration-by-jonathan-woetzel-and-jeongmin-seong-2020-](https://www.project-syndicate.org/commentary/asia-technological-rise-collaboration-by-jonathan-woetzel-and-jeongmin-seong-2020-12#:~:text=Asia's%20rapid%20emergence%20as%20a,in%20many%20cutting%20edge%20sectors.)

[12#:~:text=Asia's%20rapid%20emergence%20as%20a,in%20many%20cutting%20edge%20sectors.](https://www.project-syndicate.org/commentary/asia-technological-rise-collaboration-by-jonathan-woetzel-and-jeongmin-seong-2020-12#:~:text=Asia's%20rapid%20emergence%20as%20a,in%20many%20cutting%20edge%20sectors.)



About the Awards

Last Date: 15th April 2021

- This is the first edition of FICCI Industry 4.0 Awards for manufacturing (including oil & gas sector). It will provide a platform to showcase the successful digital transformation use cases. These are country's first of its kind Industry 4.0 awards. Applications are invited from organizations which are ahead on the path of digital transformation and would like to show case their achievements.
- FICCI I4.0 Awards will be presented to manufacturing units and firms for the recognition of their commitment towards digital journey of their projects/ workplace. The purpose of the awards is to benchmark successful digital practices along with robustness of the digital systems to enable domestic industry and MSMEs to stand up to emerging global challenges in the area of Smart Manufacturing and Industry 4.0
- Assessment process will be led by a team of domain experts

Instructions

- The application for the award is for a single unit (site specific in case of large organization and Project specific under different categories).
- Multiple units/sites of a single organization are eligible to apply for Awards.
- The Awards are given in two major categories with six sub-categories differently for below mentioned organizations:
 - **Large Sized Organization** (Organization having either turnover or investment excluding working capital of more than Rs 500 crore)
 - **Medium Sized Organization** (Organization having either turnover or investment excluding working capital between Rs 100 crore to Rs 500 crore.)
 - **Small Scale Organization** (Organization having turnover & investment excluding working capital, both less than Rs 100 crore)
- .For the award, category size of the parent organization is considered and not of the unit

Categories

- A. Overall digital transformation program (Site specific)**
- B. Focused digitalization projects**
 - ❖ Smart Product (Intelligent Product)
 - ❖ Smart Services
 - ❖ Smart Operations
 - ❖ Smart Supply-chain
 - ❖ Smart Customer Experience
 - ❖ Smart Business Functions

Three Stage Evaluation Process

- Application evaluation
- On-site / Virtual Site Assessment for qualifying units
- Jury Selection by the presentation of Qualifying sites after on-site / virtual site assessment

Application Fee for the Awards (Inclusive of Taxes)

Rs. 40,000
For Large sized
Organization
plus GST

Rs. 25,000
For Medium
Sized
Organization
plus GST

Rs. 15,000
For Small
Enterprises &
Start-Ups plus
GST

For participation in the Awards, please contact:

Ms. Ankita Sharma
7428725386
E: ankita.Sharma@ficci.com

Ms. Purтика Kalra
9811447242
E: purtika.kalra@ficci.com

