



Let's Solve

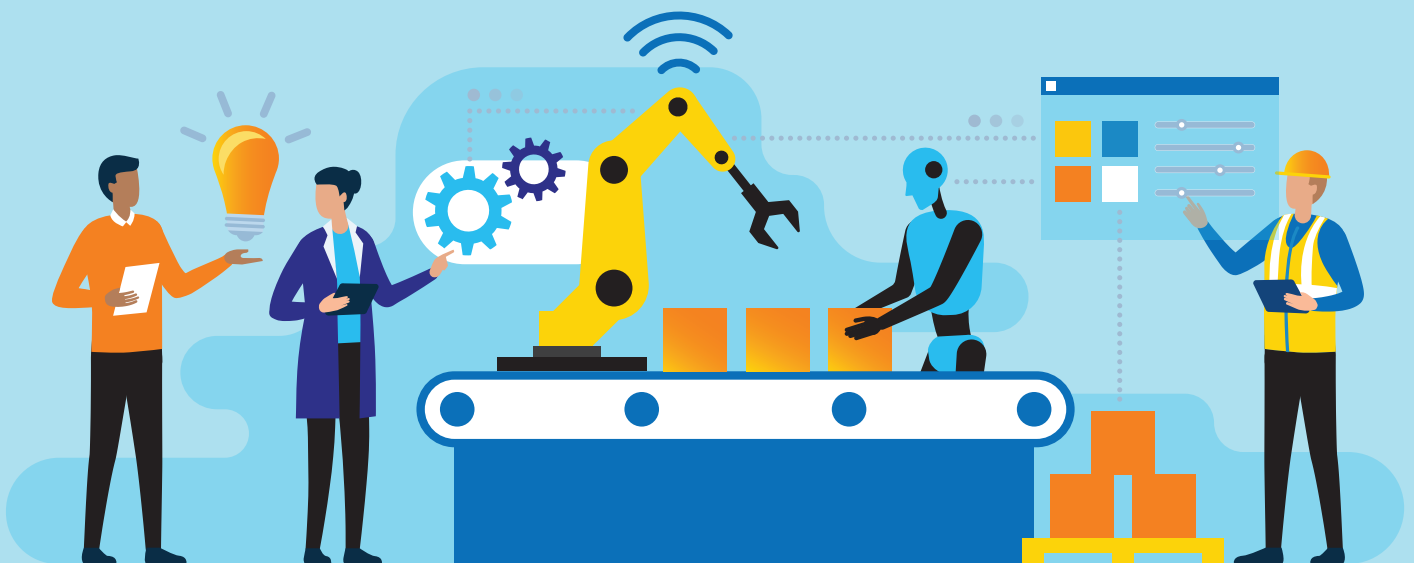


A Larsen & Toubro
Group Company

Point of View

Unlocking Industry 4.0 – How Digital Innovation is Redefining the Manufacturing Sector

by **Hari Garg**



2020 has been an inflection point in more ways than one. Besides altering, and perhaps forever, the way we work, play, and collaborate, this past year has significantly sharpened the shift toward digital transformation across the board. Even industries like manufacturing that have traditionally been slow to latch on to the digital evolution have shown remarkable digitalization speed. While the talk of smart factories and Industry 4.0 has been going on for a few years, global CIOs today are deploying digital technologies in unprecedented ways and changing the manufacturing industry's future.

The focus is on the immediate need for manufacturing organizations to **innovate** and develop **digital capabilities** to achieve a competitive edge. By implementing emerging technologies, manufacturing companies are looking to expand productivity, eliminate inefficiencies, minimize operating costs, and ensure sustainable growth. Principles of smart manufacturing, value chain automation, customization at scale, and lean manufacturing are disrupting the industry like never before.

Before businesses begin to invest in digital transformation, understanding how this shift will impact business is critical.



Hyper innovation

Innovation begets innovation. One of the most fundamental digitalization outcomes in manufacturing is holistic optimization—from the way a product is designed to how it is marketed. Digital tech is opening up new ways of how organizational data is stored and utilized, how teams collaborate on product development, and how the overall customer experience is elevated.



Process automation

Businesses can expect a significant uptick in decision-making by simulating processes while also saving costs, reducing time-to-market, and building a unified, seamless manufacturing process that integrates digital tools with physical manufacturing.

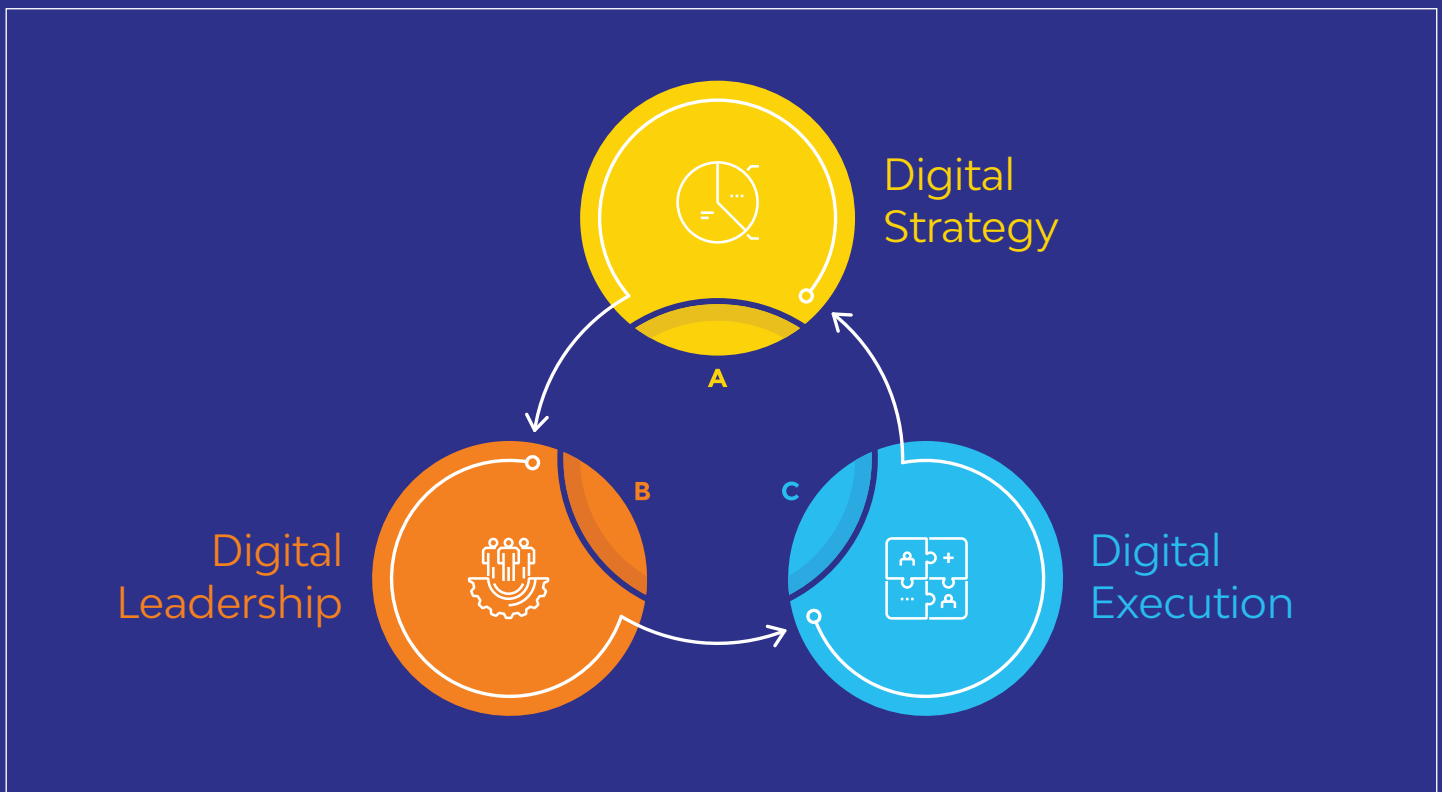


Heightened data usage

By creating a digital thread throughout the manufacturing process, businesses can better analyze data across the product lifecycle for actionable insights. Additionally, smart manufacturing systems enable leveraging customer data to anticipate demand and maintenance requirements.

Getting the transformation roadmap right

A successful digital transformation plan begins with the right strategy, is led by forward-thinking leadership, and is executed by implementing appropriate digital solutions.



Before getting onto the transformation process, leaders across the organization departments must outline how to implement disruptive solutions to support operations. For instance, a thorough review of core processes and systems can identify areas with inefficiencies and implement strategies and approaches that add value by upgrading to the latest technologies. It is also imperative to have a committed leadership team, significant change requires leadership excellence.

When people in critical roles are more involved in a digital transformation, success is more likely, says a McKinsey report. The report also adds that businesses that brought in a Chief Digital Officer to oversee the transformation were 1.6X more likely to report a successful change.

Technologies leading Digital Transformation in Manufacturing

Manufacturing organizations that are digitally inclined and are turning toward Industry 4.0 are focused on a few key technologies that will drive this change:



Internet of Things

From streamlining production flow and automated monitoring of development cycles to increased supply chain and inventory management efficiency, the power of IoT is being leveraged for a range of applications in the manufacturing sector. By deploying a network of sensors to collect critical data on production, supply chain, and aftermarket processes, manufacturing organizations can plug any gaps in operations with predictive maintenance, improved reliability, and reduced equipment downtime.



Artificial Intelligence and Machine Learning

Most manufacturing organizations use mechanical and robotics solutions for increased productivity and reduced operating costs. AI solutions can be implemented to analyze data and drive insights for day-to-day supply chain operations, quality control, and other manufacturing processes. On the other hand, machine learning solutions are being leveraged to learn and improve mechanical and robotic operations that become more intelligent over time. This, in turn, enables smart manufacturing decisions for better and improved processes.



Advanced Big Data Analytics

Analytics help enhance the manufacturing supply chain's transparency, enabling business leaders to make informed decisions. Data analysis can lead to proactive maintenance scheduling, quality testing, anomaly detection, supply chain management, and overall product lifecycle management.



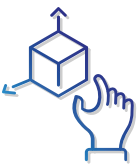
3D Printing

Unlike the traditional manufacturing process, 3D printing technology can be used to create complex designs and patterns to help manufacturing designers and engineers have more flexibility in shaping the final product with a reduced cost of design spend. This can cater to real cost saving for the investment-intensive industries including, elevators, escalators, automobile, and aerospace. 3D printing is being used to increase customization, enhance productivity, reduce storage costs, and ensure faster time-to-market.



Digital Twin

By using a digital representation of a real-world asset that receives continuous real-time data from the asset, manufacturers can now virtually manufacture equipment and enhance monitoring and situational awareness. The technology is being actively used to get a more holistic approach to asset management and, in turn, improve customer experience with better insights on innovation needs for existing products and also identify new business opportunities.



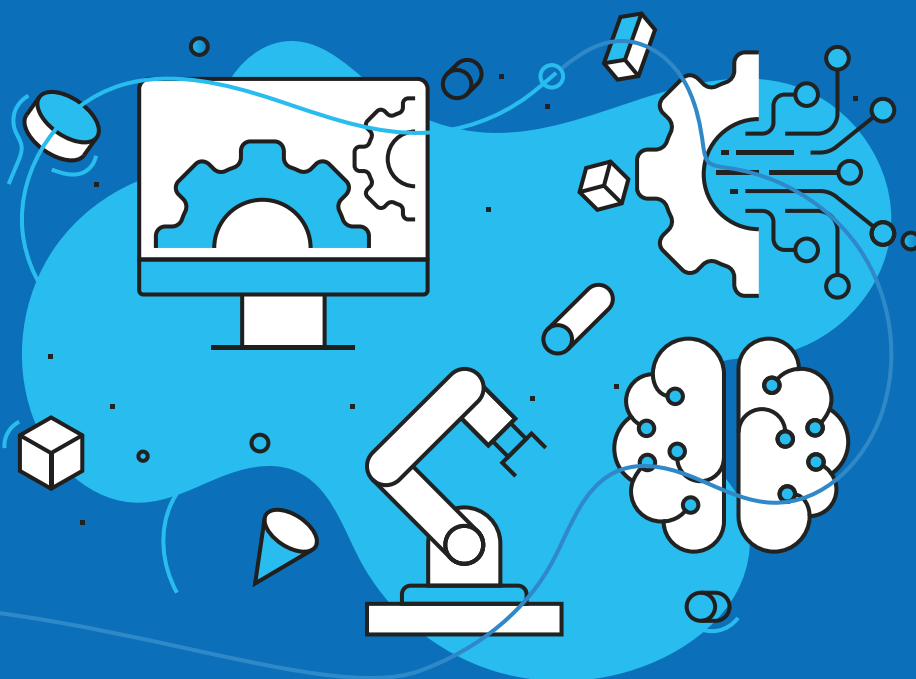
Mixed Reality

By blending both augmented reality (AR) and virtual reality (VR), mixed reality (MR) is helping manufacturers create new, real-time environments and visualizations for product design, guiding remote service delivery operations, and more. MR is becoming increasingly mainstream in the manufacturing space to reduce the time for maintenance, accelerate quality control, improve personnel training, and minimize skilled workforce shortage.

Are you ready to transform at scale?

As Industry 4.0 initiatives gather steam, manufacturers must be ready to pivot and adopt the right technology at the right time to make a successful transition. While digital transformation in the manufacturing space prioritizes customization, efficiency, agility, and such, it is vital that the digital transformation strategy not disconnect with market dynamics. It is imperative that digital transformation be looked at as a piecemeal initiative and an ongoing process of getting and staying ahead of the competition.

Address questions such as what would create the most value in your manufacturing set up, set your ambition for transformation and identify short, medium, and long-term goals, integrate the digital strategy with operations strategy, establish an innovation hub that will drive the transformation, and identify potential impediments that can throw you off track. Manufacturers who move rapidly on their digital transformation and innovation journey are bound to gain a significant edge over competitors.





Author Profile



Hari Garg

Associate Principal - Cloud & Infra Services, **LTI**

Hari is focused in helping manufacturing clients achieve in their cloud and digital transformation journey, He has more than a decade of experience working with Microsoft Dynamics ecosystem. Hari leads functional architecture design and business process alignment, performs fit-gap analysis, technical project/ program management & delivery management. He helped bridging gaps between IT and business teams for some of the largest Banking, Retail, Technology and Manufacturing Clients.

LTI (NSE: LTI) is a global technology consulting and digital solutions company helping more than 400 clients succeed in a converging world. With operations in 31 countries, we go the extra mile for our clients and accelerate their digital transformation with LTI's Mosaic platform enabling their mobile, social, analytics, IoT and cloud journeys. Founded in 1997 as a subsidiary of Larsen & Toubro Limited, our unique heritage gives us unrivalled real-world expertise to solve the most complex challenges of enterprises across all industries. Each day, our team of more than 33,000 LTItes enable our clients to improve the effectiveness of their business and technology operations and deliver value to their customers, employees and shareholders. Find more at <http://www.Ltinfotech.com> or follow us at @LTI_Global.