ICREON

WHITEPAPER

EMPOWERING MANUFACTURING 4.0

WITH SEAMLESS CONNECTIVITY AND SMARTER SOLUTIONS

FOREWARD

Manufacturers, are you ready to take your business to the next level?

This whitepaper has been compiled to assist modern manufacturers in enhancing their operations and efficiency via Smart Connected Manufacturing (SCM) - a profitable option for manufacturers as it facilitates increased productivity and reduced costs.

Implementing SCM without digital mastery can bring various challenges, including integrating diverse technologies, ensuring data security, managing costs, and dealing with potential workforce disruptions. Thus, every manufacturer must be ready with a plan to strategize and execute an unerring implementation of technology while investing in the right foundation.

This whitepaper offers an overview of the current status of the manufacturing industry and the potential for digital transformation. It highlights how manufacturers can drive innovation and multiply knowledge sharing through improved partnerships and collaboration, while shifting their focus from simply selling and producing products to delivering a full array of connected after-sales services throughout the product life cycle. Join us as we navigate the challenges and opportunities of smart manufacturing in the digital age.

Contents

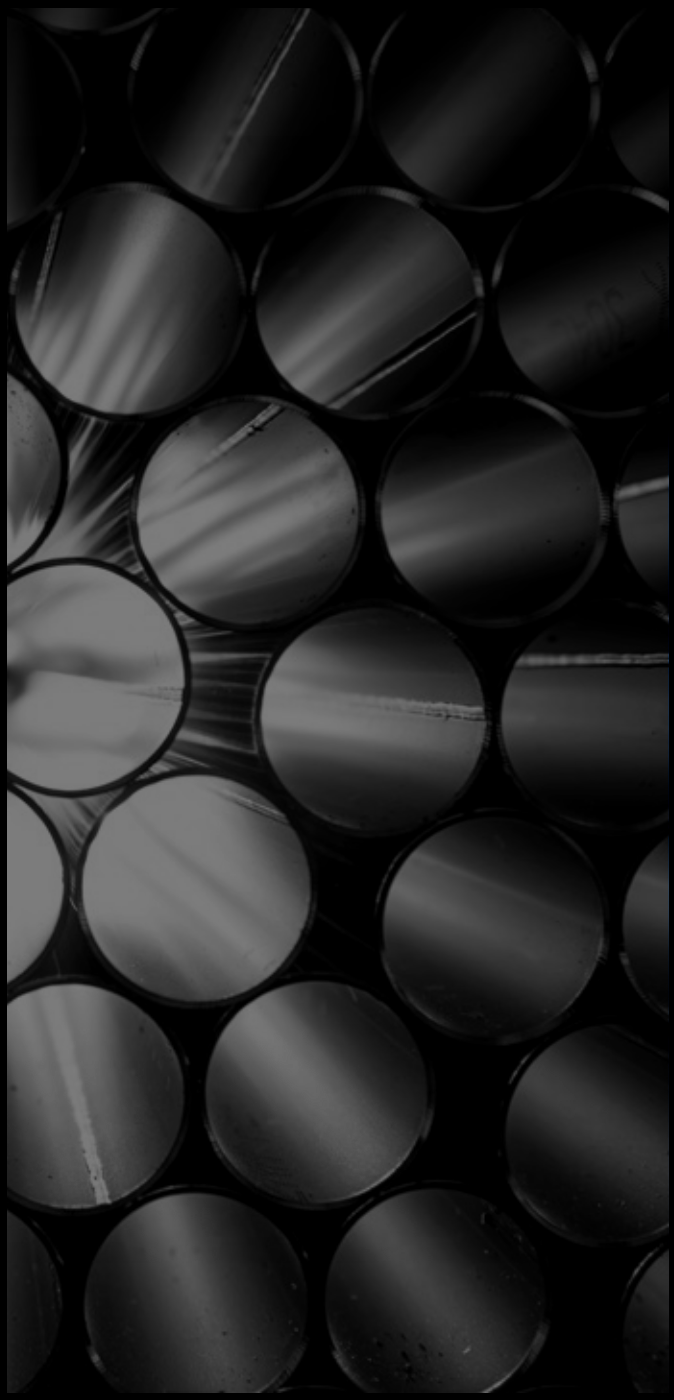
EXECUTIVE SUMMARY

UNLEASHING THE POWER OF DIGITAL INNOVATION: A REVOLUTION IN MANUFACTURING

As we navigate the ever-evolving landscape of industrial automation, digitization, and connected technologies, the manufacturing industry is undergoing a profound transformation. The convergence of data, connectivity, and advanced analytics is revolutionizing how manufacturers operate, create value chains, and deliver customer experiences.

In this white paper, we delve into the forefront of Smart Connected Manufacturing and explore the key trends, scope and opportunities that lie ahead for manufacturers. We will uncover how some leading manufacturers are leveraging cutting-edge technologies such as Internet of Things (IoT), Artificial Intelligence (AI), Big Data, and Cloud Computing to unlock new levels of operational efficiency, agility, and innovation.

We will also look into the impact of digital transformation on various aspects of the manufacturing ecosystem – while implementing Smart Connected Manufacturing. The potential of digital transformation in manufacturing is immense, with the ability to revolutionize how companies operate, from the shop floor to the supply chain. Embracing digital transformation enables manufacturers to meet the ever-evolving needs of customers in today's fast-paced business environment.



CURRENT MANUFACTURING INDUSTRY OVERVIEW

Just like any other industry, the manufacturing industry is overcoming the effects of prolonged pandemic. This pandemic has not only put a barrier in human interactions but also impacted the way businesses take risks toward growth.

At present, there are challenges about inflation and economic uncertainty in the industry, while manufacturers are also facing other major roadblocks related to traditional modes of manufacturing that could hinder the industry's growth momentum in the way of digital transformation.

1 **Lack of agility**	Traditional manufacturing processes are often slow and inflexible, making it difficult to respond quickly to changing market demands. Digital innovations such as automation, machine learning, and artificial intelligence can help manufacturers improve their agility by enabling them to adjust their production processes in real-time.
2 **High costs**	Traditional manufacturing methods can be expensive due to the high cost of labor and raw materials. Digital innovations can help reduce costs by automating repetitive tasks, optimizing production processes, and minimizing waste.
3 **Quality control issues**	Traditional manufacturing processes can be prone to errors and defects, which can impact product quality and customer satisfaction. Digital innovations such as machine vision and quality control systems can help manufacturers improve product quality and reduce defects.
4 **Limited scalability**	Traditional manufacturing processes can be limited in their ability to scale up or down quickly to meet changing demand. Digital innovations such as 3D printing and additive manufacturing can enable manufacturers to produce smaller or larger quantities of products quickly and efficiently.
5 **Environmental impact**	Traditional manufacturing processes can have a significant environmental impact due to the use of energy, water, and raw materials. Digital innovations such as sustainable manufacturing practices and green technologies can help reduce the environmental impact of manufacturing processes.

SCOPE OF DIGITAL TRANSFORMATION

The manufacturing industry is one of the sectors that can benefit the most from digital transformation. Digital transformation can help manufacturers increase productvity, efficiency, reduce costs, improve product quality, and create new revenue streams.

> ***As a response to current economic pressures like inflation, scarce talent, and supply constraints, 80% of CEOs are raising their investments in digital technology.***
>
> -Gartner

Here are some of the areas where digital transformation can have a significant impact on the manufacturing industry:

CONNECTED MANUFACTURING WITH REAL-TIME DATA ACCESS

The use of the Industrial Internet of Things (IIoT) and sensors can help manufacturers connect machines and equipment to gather data in real time. This data can be used to optimize production processes, reduce downtime, and improve productivity.

DIGITAL TRANSFORMATION FOR PREDICTIVE MAINTENANCE

Digital transformation can enable predictive maintenance, which involves using data from sensors and actuators to predict when maintenance is needed before a breakdown occurs in the system. This can help manufacturers reduce downtime, extend the life of equipment, and save costs.

DIGITAL TWINS FOR MANUFACTURERS

Digital twins are virtual models of physical assets, which can be used to simulate and optimize production processes, test new products and processes, and reduce waste and downtime.

DIGITAL TRANSFORMATION FOR SUPPLY CHAIN PROCESS

Digital transformation can help manufacturers optimize their supply chains by using data to improve forecasting, reduce lead times, and manage inventory more efficiently.

ADDITIVE MANUFACTURING

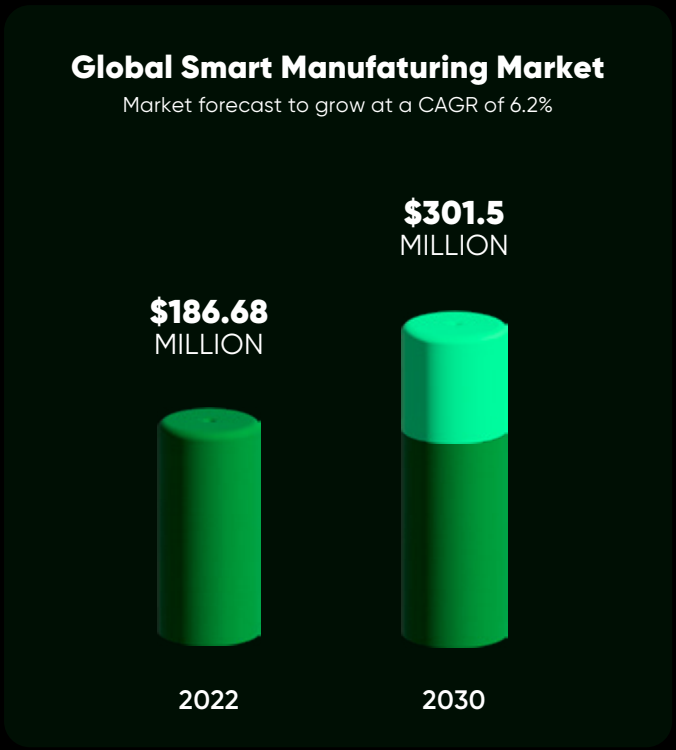
Additive manufacturing or 3D printing is a digital manufacturing process that helps manufacturers to produce customized products in a quick manner and reduce waste.

UPGRADING WORKFORCE FOR OPERATIONAL EFFICIENCY

Augmented reality can be used to improve training, maintenance, and repair processes, allowing manufacturers to train workers more efficiently and reduce downtime.

Overall, the scope of digital transformation in the manufacturing industry is vast and varied, and its potential impact can be significant in terms of cost savings, efficiency gains, and new business opportunities.

SMART MANUFACTURING MARKET



With the rising need for intelligent automation, the smart manufacturing market is poised for rapid expansion on a global scale.

The global smart manufacturing market is anticipated to reach USD 301.5 Million by 2030, at a CAGR of 6.2% from 2022. Digitalization has revolutionized the manufacturing industry to a great extent by enabling the adoption of smart manufacturing practices." - Research and Markets

Today, multiple key industry players are directing their efforts towards broadening their customer reach and investing in research and development to introduce cutting-edge products. Such initiatives are expected to fuel market growth and facilitate the adoption of smart manufacturing technologies.

BUSINESS DRIVERS FOR INDUSTRIAL DIGITALIZATION

Over the course of past years, industrial digitalization has emerged as a major driver of transformation in the business world. As companies increasingly embrace technology to optimize operations and create new business models, digitalization has become a key enabler of growth and innovation. This shift is being driven by a number of factors, including the need to improve operational efficiency, enhance customer experience, and respond to changing market dynamics. With digitalization playing a key role in driving this change, businesses are recognizing the need to prioritize investment in technologies such as Artificial Intelligence, the Internet of Things, and Robotics, among others. In this context, understanding the key business drivers for industrial digitalization has become a critical priority for companies looking to stay competitive and succeed in the digital age.

Here are some of the business drivers for industrial digitalization in the manufacturing sector:

Profitability, Efficiency & Reduced Costs

Manufacturing Intelligence can help manufacturers improve their productivity and lower costs by providing real-time insights into production processes, enabling manufacturers to make data-driven decisions to optimize operations. By analyzing manufacturing data, manufacturers can identify areas where improvements can be made to increase efficiency and reduce costs. The use of Manufacturing Intelligence can provide manufacturers with the ability to make informed decisions, leading to increased efficiency, productivity, and profitability.

New Revenue Streams

Manufacturing Intelligence can create new revenue streams for manufacturers by enabling them to develop new products and services and enter new markets. By analyzing data from their manufacturing processes, manufacturers can identify market trends and customer needs, enabling them to develop new products that meet the needs of their customers. Additionally, by combining manufacturing data with data from other sources, manufacturers can gain insights into new markets and develop strategies to enter these markets.

Enhanced Customer Experience

By improving the customer experience, manufacturers can differentiate themselves from their competitors and build brand loyalty among customers. By utilizing advanced analytics tools, manufacturers can identify patterns and trends that may be causing quality or reliability issues for customers and take corrective action to address them. This can help manufacturers to improve product quality, which ultimately leads to increased customer satisfaction.

INDUSTRY 4.0 – DIGITAL TRANSFORMATION OF MANUFACTURING VALUE CHAIN

Industry 4.0, also known as the fourth industrial revolution, is a term used to describe the integration of advanced technologies and data analytics into the manufacturing sector. This transformation is expected to bring significant improvements in efficiency, productivity, and flexibility to the manufacturing industry.

The operational landscape of manufacturing is vast as it covers the entire value chain and strive to seek balance in multiple areas – enhanced production capacity, improving customer experiences, higher employee satisfaction, reducing material losses, and coping up with the environmental impact. Scaling across all these areas, gains from Industry 4.0 digital transformation can fundamentally impact a company's competitive position.

Driven by the increasing availability of data, the emergence of new technologies, and changing consumer demands. Industry 4.0 technologies, such as the Internet of Things (IoT), artificial intelligence (AI), and robotics, are enabling manufacturers to optimize their production processes, reduce costs, and improve product quality.

With the Industry 4.0 revolution, scaling up digital transformations across different networks of factories is quite difficult – but not impossible.

Below is a list of cutting-edge Industry 4.0 technologies driving the momentum for digital transformation in the manufacturing sector.

According to a survey by PwC, 90% of manufacturers believe that Industry 4.0 will create new business models, and 72% believe that it will increase efficiency.

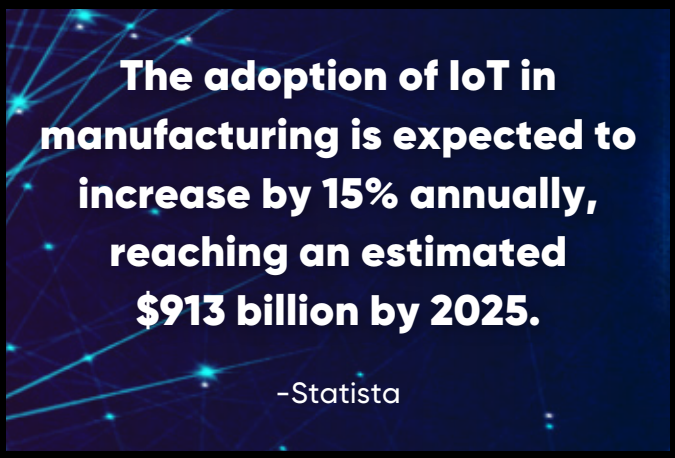
INTRALOGISTICS SMART ROBOTS FOR SMART FACTORIES

Intralogistics smart robots are revolutionizing the management of materials and goods within production environments, playing a crucial role in the Industry 4.0 revolution. These autonomous machines use artificial intelligence, machine learning, and advanced sensor technology to navigate and perform tasks like transporting, sorting, and storing materials. The seamless integration with other intelligent systems in smart factories boosts productivity, streamlines workflow, and reduces human error, making them indispensable for staying competitive in the global market.

Key advantages of intralogistics smart robots include their ability to work alongside human workers, improving productivity and safety. They can be programmed for repetitive, physically demanding tasks, allowing humans to focus on decison-making tasks. Additionally, these robots can be integrated with inventory management and production planning software, creating a more cohesive and efficient operation. They streamline material and product movement within factories and warehouses, increasing efficiency and throughput times. As a vital component of next-generation factories, intralogistics smart robots optimize processes, enhance productivity, and promote safety, leading to greater efficiency, flexibility, and profitability.

IOT DEVICES AND SENSORS TO COLLECT DATA FROM MACHINES AND PRODUCTS

The Internet of Things (IoT) has revolutionized data collection in the manufacturing industry, making it more accessible and cost-effective than ever. IoT devices and sensors provide real-time visibility into machine and product performance, enabling manufacturers to optimize processes, reduce costs, and improve quality. Key benefits of IoT in manufacturing include improved visibility, increased efficiency, and enhanced quality control.



IoT devices and sensors are used in various applications, such as monitoring machine performance and product quality. Data collected from these devices can identify maintenance needs and prevent unplanned downtime, as well as detect production issues early to prevent defects from reaching customers. As manufacturing operations expand, systems must be designed with scalability in mind to accommodate increasing amounts of data. IoT technology is poised to transform the industry by connecting machines and products, with widespread adoption of IoT devices and sensors for data collection anticipated in the future.

BIG DATA ANALYTICS TO PROCESS AND ANALYZE LARGE AMOUNTS OF DATA

At the heart of this transformation lies Big Data Analytics, a powerful tool that allows organizations to process and analyze large amounts of data generated by various sources, such as IoT devices, sensors, and production equipment. By harnessing the power of Big Data Analytics, manufacturers can gain actionable insights, optimize their operations, and deliver superior customer experiences.

Big Data Analytics enables companies to uncover hidden patterns, trends, and correlations within massive datasets. It helps organizations to better understand their production processes, identify bottlenecks, and optimize resource allocation, leading to improved efficiency and product quality. Furthermore, predictive analytics, a subset of Big Data Analytics, can help manufacturers anticipate potential machine failures or maintenance needs, minimizing unplanned downtime and enhancing overall equipment effectiveness (OEE).

In addition to optimizing internal operations, Big Data Analytics also plays a critical role in enhancing value chains. By analyzing data from suppliers and distributors, manufacturers can identify areas for improvement, streamline procurement, and optimize inventory management. This leads to more agile and responsive supply chains, ensuring that businesses can adapt to changing market conditions and customer demands.

The big data analytics market is expected to expand at a compound annual growth rate (CAGR) of 13.4% during the projection period, from $271.83 billion in 2022 to $655.53 billion by 2029.

-Fortune Business Insights

CLOUD COMPUTING

Cloud computing has revolutionized data storage and processing by allowing companies to store vast amounts of data in the cloud and process it quickly and efficiently. By leveraging smart connected manufacturing and cloud computing, businesses can modernize their operations and achieve a competitive advantage. When it comes to customer experiences, cloud computing plays a significant role in helping manufacturers gain a competitive edge. By leveraging cloud-based customer relationship management (CRM) systems and advanced analytics, manufacturers can collect, analyze, and act on customer data to provide personalized products, services, and support.

Cloud-based solutions for the manufacturing market are set to grow at a CAGR of 12.5% during 2023-2028.

-Mordor Intelligence

By adopting cloud-based solutions, manufacturers can access real-time data and insights, enabling better decision-making and more efficient resource allocation. This leads to increased productivity, reduced operational costs, and enhanced overall performance. Moreover, cloud computing facilitates seamless collaboration and communication between teams, departments, and even across different geographical locations, promoting a more connected and agile manufacturing environment. This data-driven approach leads to improved customer satisfaction, loyalty, and long-term business growth.

CYBER-PHYSICAL SYSTEMS FOR INTERCONNECTING PHYSICAL AND DIGITAL SYSTEMS

Cyber-physical Systems (CPS) is a new type of system that integrates physical and digital systems. CPS uses sensors, actuators, and other devices to capture and transfer data from the physical world to digital systems and vice-versa. This integration allows for improved communication and coordination between the physical and digital worlds, leading to a wide range of benefits, including improved efficiency, increased safety, and reduced costs.

One of the primary benefits of CPS is improved efficiency. By integrating physical and digital systems, CPS can optimize processes and operations, leading to increased productivity and reduced waste. For example, in a manufacturing setting, CPS can be used to monitor and optimize production lines, reducing downtime and increasing output.

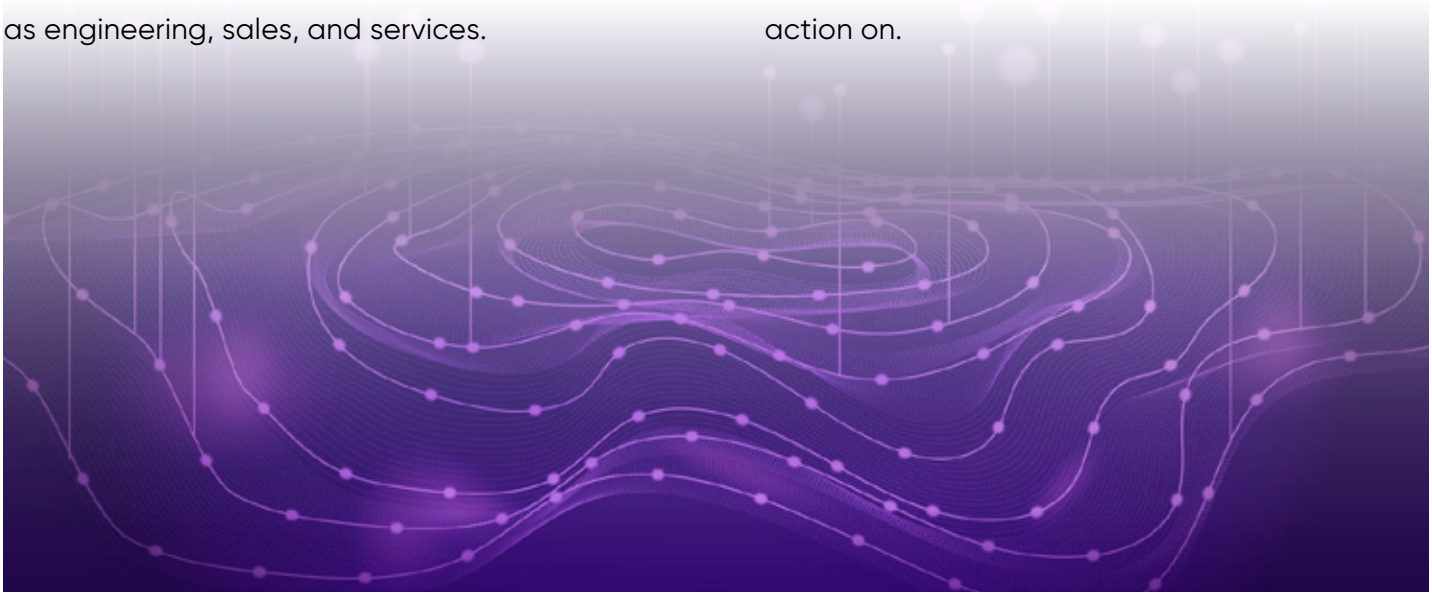
TAKE ACTION- SMART MANUFACTURING REQUIRES DIGITAL MASTERY

Smart manufacturing is a revolutionary approach to manufacturing that uses data and cutting-edge technologies to optimize production processes, improve quality, and enhance overall efficiency. This increased digitalization means significant customizations across the processes, which results in improved customer experiences. Despite these advances, the outdated culture or traditional mode of operation at manufacturing companies has remained the same.

For instance, the IT side handles networks and back-office functions, and the operational technology (OT) side manages production lines. Unfortunately, this separation of business units creates silos where customers may not receive consistent experiences when interacting with different teams within the same company, such as engineering, sales, and services.

However, many manufacturers realize that this traditional approach no longer supports success and seek to transform their business models through smart connected manufacturing. By building new value chains and fostering partnerships and collaboration, they hope to drive innovation and share knowledge. They want to make the transition from solely selling and producing products to providing a range of connected after-sales services throughout the entire product life cycle.

To fully embrace the benefits of smart manufacturing, digital mastery is a must in terms of business models, collaboration, and agile data integration approaches. To get started on the digital transformation journey, we recommend the following priorities to take action on.



DEMOLISHING SILOS: IMPROVING COMMUNICATION AND COORDINATION

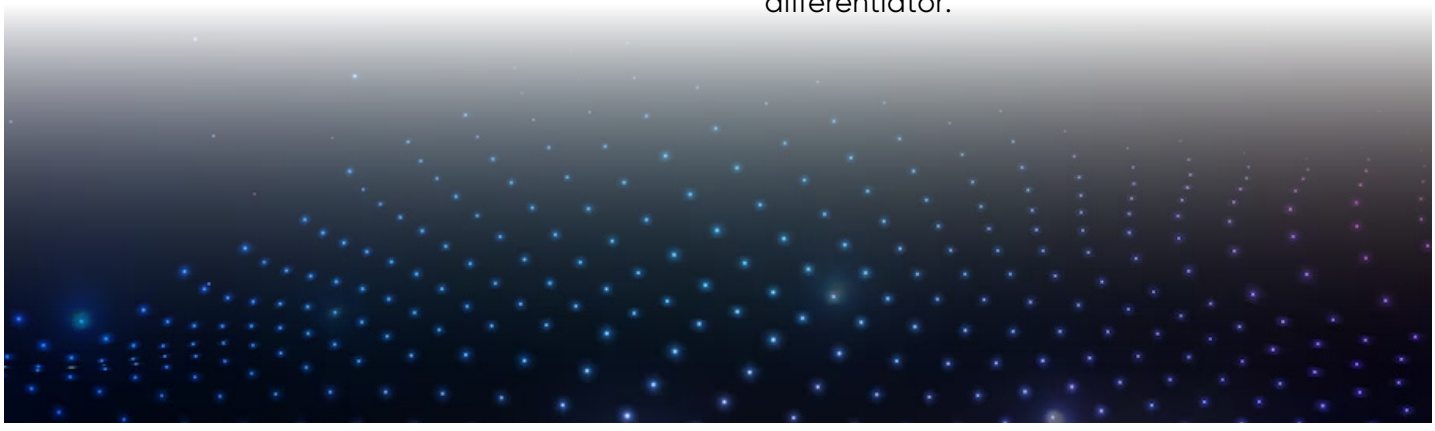
The manufacturing industry is characterized by its complex and often siloed organizational structure, where different departments and teams work in isolation from one another. This can result in inefficient communication, duplication of effort, and missed opportunities for innovation. Demolishing these silos is essential to improve communication and coordination within the manufacturing industry.

By breaking down barriers between departments and promoting cross-functional collaboration, manufacturers can enhance their ability to adapt quickly to changing market demands and drive innovation. A culture of collaboration must be fostered, where all stakeholders work together towards a common goal, leveraging technology and data analytics to streamline processes and optimize outcomes. By embracing this approach, manufacturers can create a more agile and competitive organization that is better positioned to succeed in the ever-evolving marketplace.

PROVIDING SEAMLESS CUSTOMER EXPERIENCE

Providing a seamless customer experience is crucial for the success of any manufacturing industry. The manufacturing process should not be separate from the customer experience but instead should be integrated into a holistic approach that meets the customer's needs and expectations. To achieve this, manufacturers need to focus on delivering products that are tailored to the customer's requirements, with the use of technology, data analytics, and customer feedback. In addition, manufacturers need to ensure that the customer journey is seamless, from the moment the customer interacts with the company to the delivery of the product.

This can be achieved by implementing streamlined processes and leveraging digital technologies such as automated order tracking and real-time updates. By providing a seamless customer experience, manufacturers can enhance customer satisfaction and loyalty, which in turn can lead to repeat customers and direct referrals. This can provide a competitive advantage in an industry where customer experience is increasingly becoming a key differentiator.



ADJUSTING THE BUSINESS MODEL

In the current dynamic business landscape, organizations must adapt swiftly to remain competitive, and one effective way of achieving this is by modifying their business model. Smart connected manufacturing is a transformative solution that integrates multiple technologies to establish a connected and agile ecosystem. By utilizing the Internet of Things, data analytics, and artificial intelligence, businesses gain real-time insights into customer behavior, operational performance, and market trends. This leads to the discovery of new revenue streams, optimized operations, and enhanced customer experiences.

Small businesses and individuals now have greater access to these technologies, resulting in a surge of applications in predictive maintenance, quality control, and production optimization. These applications require the ability to learn from large amounts of data, adapt over time, and remain flexible enough to handle diverse tasks. By embracing these technologies, businesses can redefine their business models for the future, enabling them to remain relevant in the competitive market.

Additionally, manufacturers must assess emerging manufacturing-focused digital platforms that have the potential to disrupt the industry. These platforms offer a unified hub for consuming services, facilitating customer access, and linking manufacturing capabilities with demand on a large scale. Even companies that lack the ability to develop their own multisided platform can leverage platform economics to revamp their business models or play a significant role in a platform managed by others.

MODERNIZING OPERATIONS TO ACHIEVE COMPETITIVE EDGE

Modernizing operations with a digital thread involves connecting data and information throughout the product lifecycle, from design and engineering to manufacturing and maintenance. It provides a comprehensive view of the product and its components, enabling businesses to improve product quality, reduce costs, and increase efficiency.

With a digital thread, businesses can streamline their operations by using digital models and simulations to test and optimize designs before physical production. This reduces the time and cost associated with physical prototyping and testing while also improving product quality. In addition, a digital thread allows for real-time monitoring of production processes, enabling businesses to identify and resolve issues quickly. It also provides valuable data for predictive maintenance, allowing businesses to schedule maintenance and repairs before equipment fails, reducing downtime and costs.

By leveraging the digital thread, businesses can improve collaboration and communication across teams and departments, facilitating better decision-making and enabling faster product development cycles. It also provides valuable data for continuous improvement and

innovation, allowing businesses to stay ahead of the competition. For instance, IT when mixed with Marketing can significantly help build personalized experiences and faster get-to-market time.

Overall, modernizing operations with a digital thread is essential for businesses to stay competitive and meet the demands of today's market. It allows for greater efficiency, improved product quality, and reduced costs, enabling businesses to provide better customer experiences and drive growth.

ESTABLISHING THE FOUNDATION USING DIGITAL PLATFORM

Digital platforms enable businesses to connect and integrate various systems, processes, and data sources, enabling them to streamline operations, improve efficiency, and increase agility. In today's competitive world, it has become a necessity to shift from legacy systems to digitally integrated environments. Digital platforms can provide real-time data and insights, enabling businesses to make better decisions and respond quickly to changing market conditions. They also facilitate collaboration and communication across teams and departments, improving productivity and reducing errors.

One example of a digital platform for manufacturing is the Industrial Internet of Things (IIoT). IIoT platforms connect sensors, devices, and machines, enabling real-time monitoring and control of manufacturing processes. This data can be used to optimize production, reduce downtime, and improve product quality. Another example is the use of cloud-based platforms for data storage and processing. Cloud platforms provide scalability and flexibility, enabling businesses to store and process large amounts of data quickly and efficiently. They also provide a cost-effective solution for businesses that do not have the resources to manage their own IT infrastructure.

When developing a roadmap for a digital platform, it is crucial to consider the integration of legacy systems, as this is essential for building a future-proof architecture. It's important to recognize that legacy systems are still valuable assets and may contain important data and processes that need to be integrated into the new platform.

TOP 3 CHALLENGES WHILE DEVELOPING A VISION FOR DIGITAL CHANGE:

01 Understanding the possibilities

02 Integrating digital vision with existing legacy strategies

03 Implementing shared vision across different paths of enterprise

STRIKING THE RIGHT BALANCE: MANAGING SECURITY RISKS IN A DYNAMIC ENVIRONMENT

Manufacturing companies today face an ever-evolving landscape of security risks, including cyber-attacks, data breaches, and intellectual property theft. At the same time, the manufacturing industry is rapidly transforming, with the adoption of digital technologies and increased connectivity leading to new vulnerabilities. Striking the right balance between security and innovation is essential for manufacturers to remain competitive and protect their assets.

66%

of business leaders will spend more in cybersecurity/information security in 2023 and beyond.

-Gartner

To manage security risks in a dynamic environment, manufacturers need to adopt a comprehensive approach that includes both technical and organizational measures. This involves developing a security strategy that assesses risks, defines policies and procedures, and establishes guidelines for employee behavior. Manufacturers should also implement appropriate technical measures such as firewalls, intrusion detection systems, and encryption technologies. These tools can help protect against external threats, such as hackers or viruses, and prevent unauthorized access to critical systems and data.

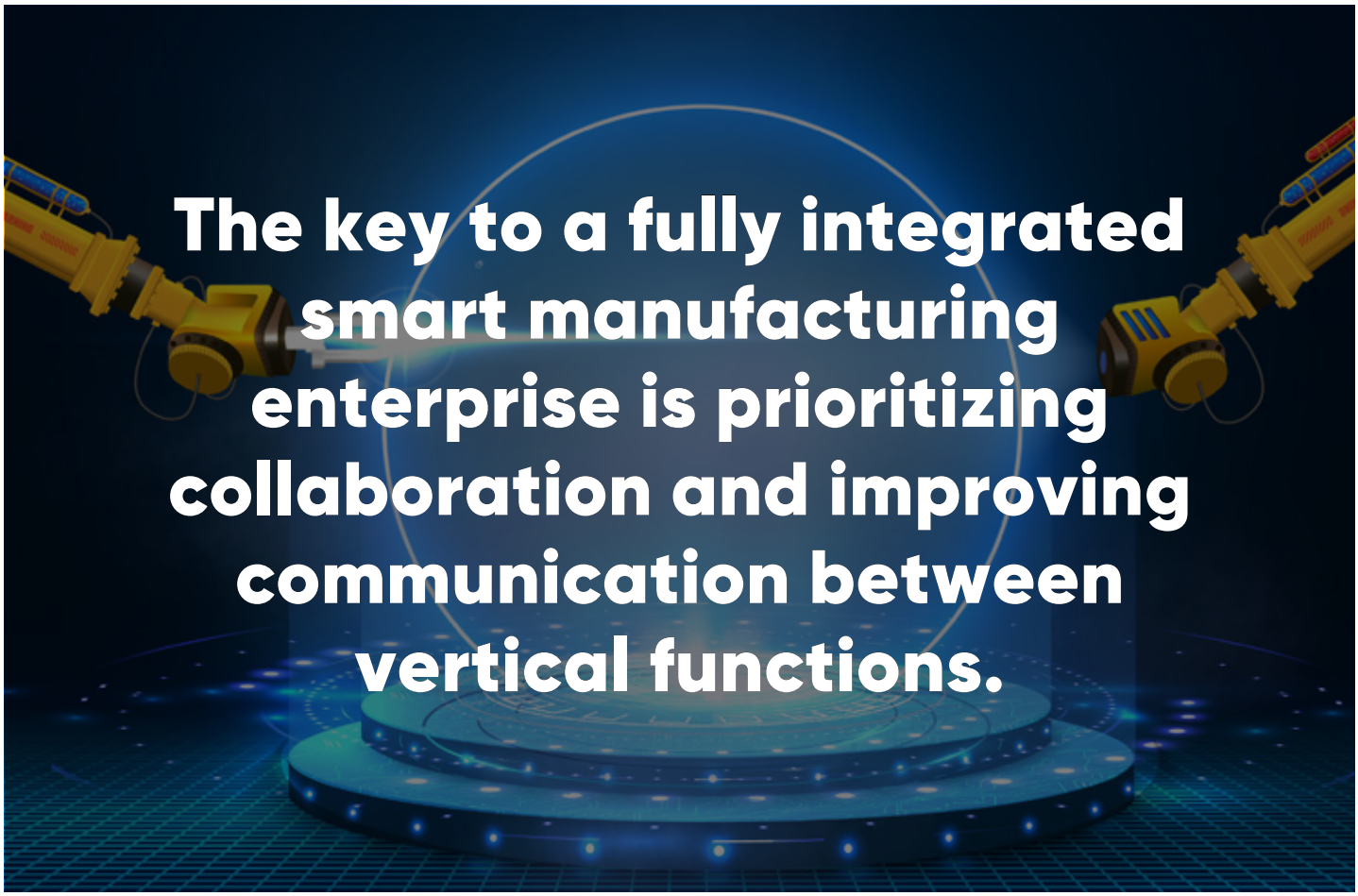
In addition to technical measures, manufacturers need to establish a security culture within the organization. This includes providing regular training for employees on security best practices, conducting regular security audits and assessments, and establishing clear policies and procedures for data handling and access. It's also important to stay up to date on the latest security threats and technologies. Manufacturers should engage with industry experts and participate in relevant forums and associations to stay informed about emerging threats and best practices for addressing them.

Finally, manufacturers need to strike a balance between security and innovation. This means incorporating security considerations into the design of new products and services, as well as assessing the security implications of new technologies and processes before implementing them.

STAND OUT FROM THE COMPETITION

The manufacturing industry is highly competitive, and businesses are constantly seeking new ways to stand out and gain a competitive edge. One effective strategy is to adopt smart connected manufacturing, which leverages technologies such as the Internet of Things, data analytics, and artificial intelligence to create a connected and agile ecosystem.

Smart connected manufacturing enables manufacturers to gain real-time insights into customer behavior, operational performance, and market trends, allowing them to optimize their operations, improve product quality, and deliver better customer experiences.



This involves implementing systems that streamline the horizontal flow of information and enable seamless collaboration between teams. By breaking down silos and promoting cross-functional communication, manufacturers can optimize their operations and achieve greater efficiency. To stand out from the competition, manufacturers must rely upon independent service providers that can help manufacturers with a powerful toolset to compete in today's market.

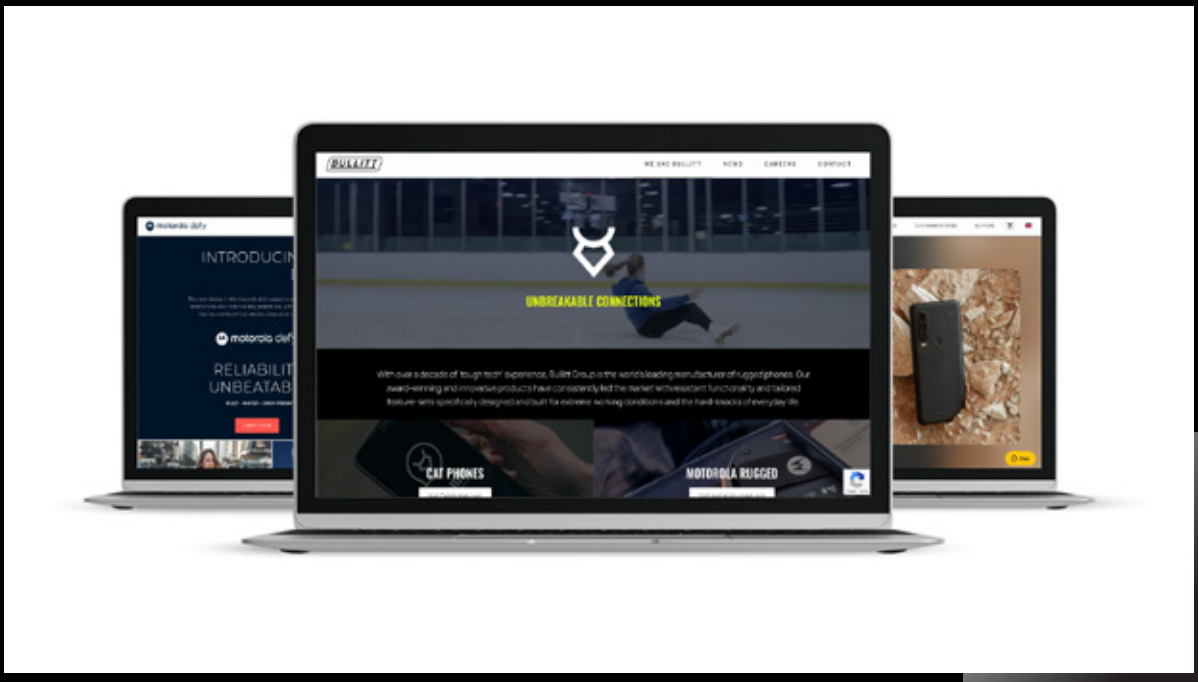
SUCCESS STORIES:

COMPANIES EXPERIENCED THE BENEFITS OF DIGITALIZATION IN THE MANUFACTURING SPACE

BULLITT GROUP

Bullitt Group, a prominent manufacturer and distributor of niche branded smartphones and consumer electronics, has experienced a significant transformation in its operations, value chains, and customer experiences through smart connected manufacturing. In pursuit of providing an immersive shopping experience for the Cat phones product range, Icreon worked closely with Bullitt and developed an enterprise-scale ecommerce solution using the Magento platform. By integrating WordPress with the Magento platform, Icreon also enhanced content management capabilities for Bullitt. Furthermore, the solution seamlessly connects with third-party agencies to handle order processing and fulfillment, optimizing value chains and delivering an exceptional customer experience.

Through this collaboration, Icreon has substantially impacted the company, demonstrating the power of smart connected manufacturing.



PEPSICO

PepsiCo, a global soft drink and snacks company, employs various enterprise software solutions to manage its vast business; one such program known as "CAR" enables employees to request funding for new projects. After realizing employees were not receiving the right guidance to learn newly deployed software, it wanted to create an effective way of training employees. Icreon collaborated with PepsiCo to develop an interactive, integrated eLearning web application designed to effectively train employees on the use of CAR. The solution revolutionized PepsiCo's operations and value chains, enhancing the employee experience and ensuring the effective use of essential enterprise tools.

Icreon's impactful contribution highlights the power of smart connected manufacturing in transforming business operations, value chains, and user experiences.

H+K INTERNATIONAL

H+K, a leading global manufacturer and supplier of kitchen equipment, was struggling with its legacy ERP system, which had become cumbersome to use, lacked growth-enabling features, and required an online storefront for clients to access product catalogs and place orders. Recognizing the pressing need to modernize, the company decided to transition from the legacy DB2 database to a new architecture based on MS SQL. By doing so, H+K International can now leverage a cutting-edge web-based enterprise application that provides valuable insights into its products and customer behavior.

Icreon played a vital role in transforming H+K's operations, value chains, product performance, customer experiences, and overall business efficiency through smart connected manufacturing.

HOW TO SUCCEED?

INVESTING IN THE FOUNDATION:
THE KEY TO SUSTAINABLE GROWTH

The manufacturing industry is undergoing a significant digital transformation, fueled by the emergence of Industry 4.0 and advancements in technologies such as artificial intelligence, the Internet of Things (IoT), and big data analytics. This provides an overview of the current state of the manufacturing industry and the scope of digital transformation. As such, businesses seeking to remain competitive in the manufacturing industry must adopt a digital-first approach and embrace the technologies driving Industry 4.0 revolution.

By integrating data, technology, and analytics across their operations, companies can gain unprecedented insights into their value chains, streamline their processes, and enhance the customer experience.

At Icreon, our team of experts specializes in helping businesses navigate the complex landscape of smart connected manufacturing, from strategy and planning to implementation and ongoing support. We work closely with our clients to understand their unique needs and objectives and develop tailored solutions that deliver tangible results. Whether you are looking to optimize your operations, transform your value chain, or create new customer experiences, Icreon has the expertise and experience to help you succeed in the digital age.

ABOUT ICREON

Icreon is an advanced digital solutions agency built for challengers who need to get to 'What Comes Next.' They help businesses define the future of their customer experiences, then enable them through technology engineering and the power of digital. These robust experiences guide customers through and beyond a commerce transaction and into a continuous and ongoing relationship with client brands. Founded in 2000, Icreon has been helping businesses of all sizes, from Fortune 500s and mid-markets, usher in a new age of digital maturity resulting in more efficient and powerful brands.

Headquartered in New York City, Icreon's global capabilities expand across Washington D.C., Philadelphia, New Delhi, and Pune offices. Companies such as GSK, Novartis, Jazz Pharmaceuticals, New York Road Runners, Lincoln, and more, partner with Icreon to fulfill their digital transformation needs.

With over 350 technology experts across engineering, digital strategy, and user-experience design, Icreon is the preferred digital transformation agency equipping growth brands for the now and next.

Let's Get Started

NOTES & LINKS

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