INDUSTRY 4.0

The benefits of better, faster, smarter manufacturing

Embracing the power of strategic digital transformation

Industry 4.0—a new era in manufacturing

“Leadership in digital manufacturing is open to anyone willing to commit to it.” **McKinsey & Company**.

Successful manufacturers have weathered a series of tectonic shifts in operations with the continued introduction of new technology and optimized processes, but none have amassed the transformative power of Industry 4.0. The fourth digital revolution is an amalgamation of hundreds of years of innovation paired with cutting-edge technologies including the internet of things, artificial intelligence, cloud computing, smart data exchange, robotics, and more—all combining to enhance automation, precision, and the efficient, digitized manufacturing of goods and services.

Industry 4.0 is not something that happens to manufacturers. This new era has created a digitized world within which manufacturers must actively work to learn, adapt, and evolve. The cumulative effect of technological advancements, adaptations, and optimizations have combined to shape the manufacturing landscape. And it has only now matured enough to provide the promise of a prosperous future for manufacturers willing to making the incremental, foundational, and operational changes necessary to flourish. It’s time to embrace the fourth digital revolution for better, smarter, faster manufacturing.

Contents

Envisioning Industry 4.0 at work **04**

Better performing processes **05**

Workforce of the future **06**

Automated asset management **07**

Curated customer experiences **08**

A fully integrated future **09**

Readiness checklist **11**

Ready, set, go **12**

> **“The Fourth Industrial Revolution is still in its nascent state. But with the swift pace of change and disruption to business and society, the time to join in is now.”**

GARY COLEMAN

Global Industry and Senior Client Advisor, Deloitte Consulting

Deloitte.

Envisioning Industry 4.0 at work

Change doesn't happen overnight. It happens little by little. Gigabyte by gigabyte. This is the design of Industry 4.0. Manufacturers are already in Industry 4.0 territory, regardless of their current integrations. Digital transformation is dependent upon how they will use this as a strategic objective to secure a more efficient, profitable future. This new business paradigm doesn't require an all or nothing approach. Upgrading a single segment of your business is enough of an evolutionary catalyst to propel manufacturing plants and organizations into a more efficient, sustainable future. There are four governing areas of manufacturing that can be optimized to kickstart an Industry 4.0 transformation. From here, the possibilities are limitless.

Process

Use process optimization to mitigate risk, increase efficiency, and automate repetitive tasks.

Workforce

Make changes to help your workforce coordinate, prepare, produce, and grow.

Assets

Focus on assets and machinery if mechanic operations and downtime are areas of concern.

Customer experience

Interface with customers, utilize feedback, and initiate changes directly related to customer satisfaction.

Better performing processes

The inefficiencies that can cripple manufacturing processes have a new enemy in Industry 4.0 innovations. Artificial intelligence (AI) and sophisticated business software systems can identify the root cause of major issues such as sub-optimal performance or quality, as well as potential bottlenecks, while unlocking new opportunities for improvement. These kinds of predictive analytics are more accessible than ever and help teams automate repetitive tasks and identify probable red flags, optimizing the production cycle and clearing out areas of operational congestion.

Improved data management

- Eliminate the need for manual data analysis with programs designed to run through datasets to identify outliers, inaccurate data, and opportunities for misinterpretation.

Workflow analysis

- AI can use machine learning and algorithmic functions to interrogate a system and identify margin of error, inefficiencies, and repetitive tasks that can be automated. With this approach in place, human resources no longer have to be allocated to assess poor processes.

Holistic planning

- Powered by business planning software or an ERP system, manufacturers can gain visibility into their own processes for improved transparency, giving them the ability to make more informed decisions. This helps optimize essential business components of the business such as financial planning, replenishment, lifecycle planning, and more.

Extended network

- A well-connected network of suppliers, manufacturers, brokers, and 3PLs can pave the way for collaboration and predictive intelligence. This improves the supply chain from all ends, solidifying a sense of trust between the supply network and the distribution company.

The workforce of the future

A fully realized Industry 4.0 strategy closes the growing skills gap by pairing human talent with advanced technology like artificial intelligence (AI), smart dashboards, seamless communication, and more accessible service areas. Imagine an environment where workers increase output with the help of intelligent machines and communicate more effectively with organizational tools from the palm of their hand.

Talent retention

Workforce-wide modernization will encourage alignment across manufacturing teams, making precise data management and machine learning accessible through smart dashboards and technological collaboration tools that reduce tension and improve employee satisfaction.

Better training and education

Enterprise resource planning (ERP) solutions can provide mobile access to work instructions, guidance, and advisement to help manufacturers improve plant operations and expand their service business and area coverage.

Effective communication

Continuous connectivity has a positive impact on all manufacturing channels. Cloud-based applications can create a more connected network of workers to facilitate more open communication and collaboration across projects.

Reduced human “idle” time

The adoption of **collaborative robotics** (“cobots”) can decrease human idle time by up to 85%.

Performance and quality

When manufacturers introduce **smart technology** to their workforce, productivity improves by 63%, while quality sees a 21% increase across the board.

Higher engagement, lower risk

When repetitive, administrative tasks are adopted by an ERP or other management solution, human workers are better able to make logical decisions that require human cognition, emotional intelligence, and more nuanced handling—thereby reducing the risk of human errors.

ENVISIONING INDUSTRY 4.0 AT WORK

Automated asset management

When manufacturers prioritize asset optimization in their aspirations to progress towards Industry 4.0 unification, they're committing to a journey that will improve plant productivity, reduce downtime, and encourage the longevity of machinery. Industry 4.0 brings in a world where planning for and preventing the worst is almost always possible.

Maintenance management

- Through advances brought by the internet of things (IoT), affordable sensors can monitor equipment for signs of performance deficiencies, downtime, or impending maintenance. These sensors can measure anything from temperature, vibration to rotation. As part of your IoT strategy, the data aggregated in enterprise asset management (EAM) systems can detect mechanic deterioration and downtime risk before they become an issue for production.

Sustainability

- Taking a prescriptive approach to asset management and maintenance can contribute to the overall sustainability of the manufacturing plant, in terms of both energy efficiency and financial sustainability by ensuring machines are tended to before they break, and through the monitored expenditure of energy. This is best carried out by an EAM solution.

Curated customer experiences

The crux of Industry 4.0 is connectivity. It's the coalescence of machines, technology, people, processes, and customers. There are new rules of engagement with Industry 4.0, and they're all centered around curating an engaged, customized experience for customers across all transactions. Feedback is currency in the era of Industry 4.0, and an investment in customer experience is an investment in the future of manufacturing.

Customization

Now more than ever, customers expect to be involved in the sales and purchasing process. Technology-rich solutions like configure-price-quote (CPQ) software can engage customers through a guided buying process with enhanced search capabilities, product flexibility, and a quick estimate on both delivery time and pricing.

Tracking

The dissemination of radio-frequency identification (RFID) and global positioning systems (GPS) have enabled manufacturers and customers to communicate to the end of the sale cycle. Customers can track and monitor the manufacturing and shipment of their goods with increased specificity—another contributor to operational transparency.

Behavioral patterning

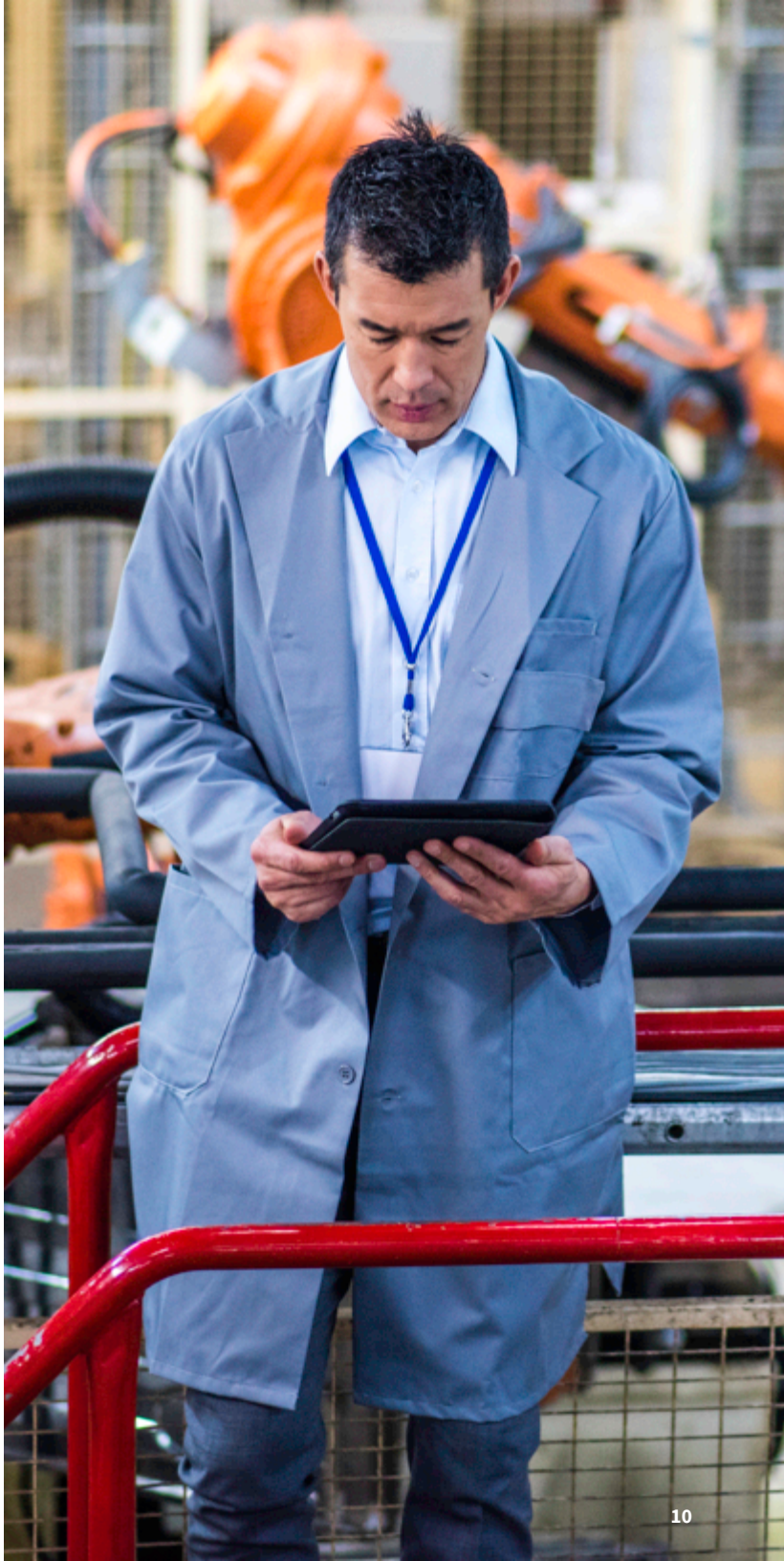
eCommerce will continue to flourish with the evolution of online platforms and data analytics to track customer behavior patterns, product needs, and purchasing behavior. This technology will enable more precise personalization, while benefitting customers and manufacturers alike.

ENVISIONING INDUSTRY 4.0 AT WORK

A fully integrated future

Balanced. Controlled. Connected. Integrated.

Manufacturers have been implementing Industry 4.0 methodologies years before the era had been properly defined—but it's the connection that makes for a successful integration. The smarter factory of the future will come complete with systems, devices, materials, people, and processes all working together to maintain, automate, and fulfil the growing needs of the manufacturing industry.



> We have selected an Infor CloudSuite solution that is scalable and can take us on our Industry 4.0 transformation to automate and become a smarter, more intelligent global printing and packaging enterprise that is nimble, highly-productive, and efficient. For example, Infor CloudSuite Industrial will let us respond to the market, backed by operational insights that help us make sound decisions, while Infor CPQ can help us standardize our bill of materials procedure more effectively to improve sales. These are new levels of efficiency and responsiveness we aim to achieve in our pursuit of higher-quality services."

JOHNNY FUNG

Group Managing Director, Leo Paper Group

LEO PAPER GROUP

Industry 4.0 readiness checklist

Identifying where implementation and optimization begin

Considering the four pillars of Industry 4.0, it can be difficult to discern where to begin, or how to devise a use case for your implementation efforts. A majority of manufacturers may still be running processes based on principles of previous manufacturing revolutions, but that doesn't mean they must feel trapped by their own foundations. In fact, there are several questions manufacturers can use to identify their starting point in the marathon to Industry 4.0 synthesis.

Use these questions to identify any areas of potential operational improvement. Through exploring these universal pain points, it will be easier to find the areas that can most easily be rectified with Industry 4.0-friendly solutions.

Process

- ☐ Is your business model optimized for the digital era, or does it still rely heavily upon manual operations, even for repetitive tasks?
- ☐ Are your products and distribution records fulfilling modern demand
- ☐ Does customer experience truly inform workflow and process?
- ☐ Is your supply chain segmented or responsible for delays in manufacturing or distribution?

Workforce

- ☐ Does your team have high amounts of "idle-time"?
- ☐ Is your talent resistant to change, or aging out of the workforce?
- ☐ Are you consistently and successfully recruiting new talent?
- ☐ Is there effective communication across teams both laterally and vertically?
- ☐ Do training and on-boarding address digital optimization?

Assets

- ☐ Is your equipment in need of constant or unexpected maintenance?
- ☐ How many products are in production vs. circulation?
- ☐ What is your supply/demand breakdown?

Customer experience

- ☐ Are you introducing new and improved products and services to better address market needs?
- ☐ Is production slow to manufacture and distribute products?
- ☐ Does customer feedback influence process optimization or adaptation?
- ☐ Can customers customize or track their purchases?

Ready, set, go

Your connection to the future starts here

You're standing in the present, but you've seen the future of manufacturing. It's time to take yet another step in the direction of progress. The question is no longer, "What can Industry 4.0 do for my organization," but "What is the first step in Industry 4.0 evolution for me?".

LEARN MORE ↗

infor.com

About Infor
Infor is a global leader in business cloud software specialized by industry. Over 65,000 organizations in more than 175 countries rely on Infor's 17,000 employees to help achieve their business goals. Visit www.infor.com.

641 Avenue of the Americas, New York, NY 10011

INF-2537680-en-US-0222-3