



# INDUSTRY 4.0:

How to rise to the new digital challenges facing manufacturing





# CONTENTS

- 1 Introduction
- 2 Industry 4.0: Disruption or acceleration?
- 3 5 challenges disturbing the manufacturing industry today
- 4 5 manufacturing trends to transform your business
- 5 Top digital tools you need to take your business into Industry 4.0
- 6 How a CRM solution can help manufacturing companies
- 7 Conclusion

# INTRODUCTION

The way we manufacture goods is changing all the time. But in the last three centuries this change accelerated at a truly extraordinary speed."

By now, the world has already witnessed three major industrial revolutions! And today, we live in the first phase of yet another transformation - the **Fourth Industrial Revolution**.

Evolving from the Digital (Third) Revolution, the Fourth Industrial Revolution (aka **Industry 4.0**) can be characterized as a process of automating traditional manufacturing and industrial practices by introducing technologies like artificial intelligence (AI), nanotechnologies and advanced robotics.

The new revolution is truly taking over almost each and every industry. But the manufacturing industry is possibly the one to change (and benefit) the most!

Blurring the lines between the physical and the digital, the Industry 4.0 transforms the manufacturing industry by:

- relying on smart technology, machine learning (ML) and the internet of things (IoT);
- revolutionizing its legacy systems of production, management, distribution, and governance.

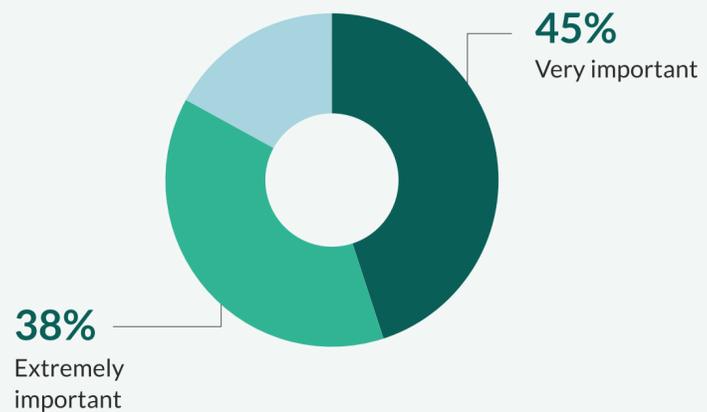
Not surprisingly, **45%** of manufacturing executives said that the Industry 4.0 (as a phenomenon) was 'extremely important' and **38%** said it was 'very important' for their businesses, while over half stated that it would have a 'significant impact' on industries and businesses in the next five years.

**Are you ready? If not, no worries - that's why we're here!**

In this paper we'll cover the main challenges facing the industry today, key trends to stay on top of, and the top tools to help you do just that!



## How important for you is the Industry 4.0?





## INDUSTRY 4.0: DISRUPTION OR ACCELERATION?

So, how exactly is the manufacturing industry being disrupted by the new technological advancements?

Today, we're all connected through mobile devices and high-speed networks. Our computers can process and store unprecedented amounts of data, allowing us to enjoy access to ever-increasing knowledge.

Now, take that and multiply it by the powers of such tech breakthroughs as AI, ML, robotics, IoT, self-driving cars, drones, 3-D printing, nanotechnology, biotechnology, and quantum computing.

Not only is this a disruption, it's an explosion of new technologies!

And just like the Big Bang, this explosion makes everything move faster.

That's why **acceleration** is the name of the game! We know more, we learn quicker, we communicate faster, and we produce more with less effort.

Algorithms predict our behavior, computers store and process colossal amounts of data, digital fabrication technologies interact with the biological world we inhabit and help us increase the pleasure we derive from life, and so on.

**Everything is changing. And so does the manufacturing of goods.**

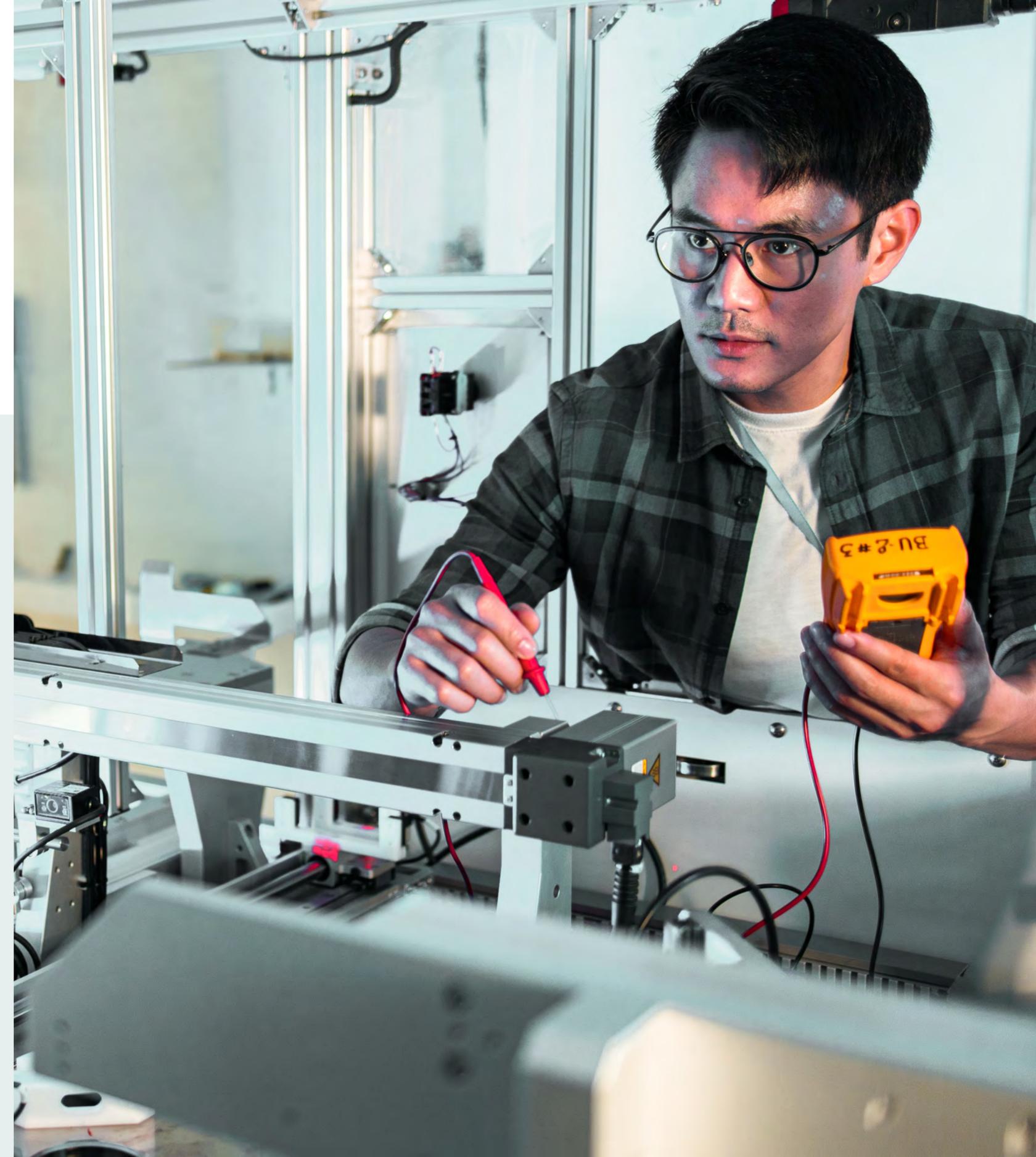
# 5 CHALLENGES THAT DISTURB THE MANUFACTURING INDUSTRY TODAY

Apart from the historic change that is Industry 4.0, the manufacturing industry has recently been affected by a number of global events.

Some of them were detrimental, while others signaled the need to change the established ways of working.

The global pandemic of Covid-19, climate change, increasing tariffs, trade restrictions, and political reforms – all have affected the industry's development.

Still growing, the industry is now facing a host of serious challenges.





## Lack of skilled labor

Filling manufacturing jobs has been a throbbing headache for many businesses recently. The problem spreads into warehousing, logistics, and distribution.

As baby boomers and some Generation X workers retire, the industry is having trouble finding skilled workforce, especially with top-tech, analytical skill sets.

In 2021, [Deloitte](#) estimated a shortfall of 2.1 million skilled jobs by 2030. Now, the industry shows low ability to engage a wider and more diverse talent pool.



## Supply chain disruption

Shipping of materials, resources and components has been disrupted around the globe. Affected by a sharply increased demand, the industry is struggling to fight off delays from global suppliers caused by port congestion and driver shortages.

This, in turn, leads to reduced output, the need to store supplies in bulk, and an increase in production costs. Lack of digital supply networks and data analytics doesn't allow manufacturing executives to design more flexible responses to supply chain disruptions.



## Increased digitalization

The rapid emergence and spread of new digital technologies has challenged the industry to keep up at rates that may not be comfortable for everyone. Digital technologies such as cloud computing, automation, robotics, AI, and IoT, replace the conventional routines and call for drastic reorganization inside the industry.

From isolated in-house technologies, to more connected and digitally equipped smart factories and investment in robots and AI – these are the modern demands for the businesses that wish to survive the new economic realities.



## Cybersecurity

The spread of technology via interconnected devices causes certain threats to information and operations' safety. That's why ensuring cybersecurity is one of the top challenges for the manufacturing industry these days.

Using outdated legacy systems is especially harmful. A lot needs to be done – from maintaining firewalls, multi-factor authentication, facial recognition, regular software updates, to training personnel about the everyday cybersecurity rules, such as understanding key signs of a security breach and recognizing phishing scams.



## Sustainability demands

An increasingly sharp focus on sustainability has challenged the manufacturing industry to evolve. Increased public awareness and serious concern for the future of our planet lead to stricter regulations and ratings that are imposed on the industry.

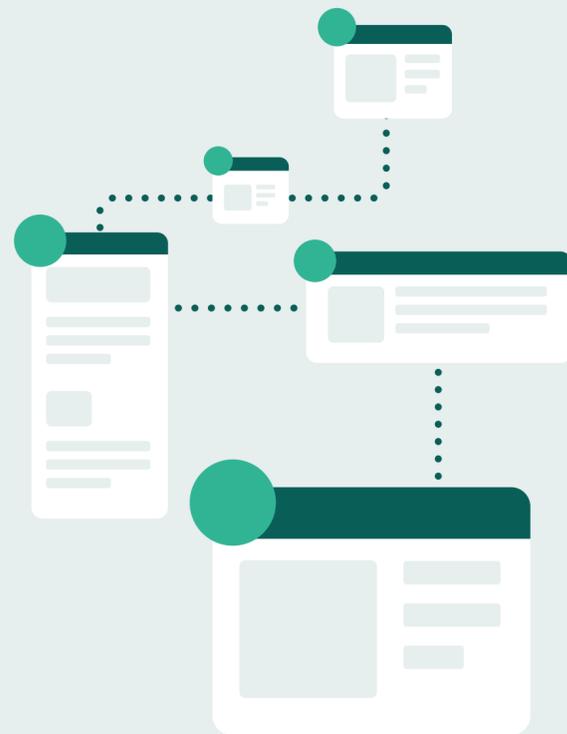
In guidance with the UN's Sustainable Development Goals, manufacturers are acting, with 73% of manufacturing executives stating that sustainability is part of their company's vision, purpose, or strategic goals.

# 5 MANUFACTURING TRENDS TO TRANSFORM YOUR BUSINESS

To successfully tackle new challenges and withstand the winds of change, the manufacturing industry needs to transform its processes and improve efficiency.

It's only by tuning in with the new technology-saturated reality that manufacturing businesses can stay competitive.

Here are a few key trends that you need to be aware of to adjust the course and take action!



## Digital first

What was technologically unimaginable just a decade ago is a reality now.

Today, most industries and businesses operate on the “digital first” model. In fact, a survey by PWC showed that 44.7% of all manufacturing businesses have plans to invest in various forms of digital technologies – that’s almost half of them!

CRM, ERP, Big Data, AI, ML, Cloud computing – all these systems are now a must for the manufacturing companies that want to survive in the new world of digital technology.

To successfully implement digital innovations, the industry will have to start retraining and reskilling workers to perform their roles.

## Internet of Things

IoT is not only a buzz word, it’s literally everywhere.

In 2021, 35 billion IoT devices were installed around the world, and the number of connected devices performing all sorts of daily tasks reached 46 billion, which equates to the value of \$500 billion!

And it doesn’t seem like the IoT phenomenon is planning to slow down, the IoT market is expected to grow nearly 5x until 2028.

Connected devices, sensors, and other smart technologies enable manufacturers to make better informed, strategic decisions using real-time data.

IoT also helps the industry to achieve a wide variety of goals, such as cost reduction, enhanced efficiency and productivity, better product quality, more streamlined project management, and even remote machine diagnostics and repair.



## Robotics, Automation, AI, AR/VR

Increasing the volume of production is a must for the growth of manufacturing businesses.

Technological advances such as robotization, automation and Augmented/Virtual Reality (AR/VR) are nowadays widely invested resources. Not only can they boost efficiency, but they also mitigate workforce shortage and maintain production levels.

**Robotics** can help improve product quality, reduce safety risks, and increase customer satisfaction, not to mention its greatest benefit – freeing up employees from repetitive, time-consuming activities. Therefore, it’s no surprise that robot orders in Q3 of 2021 were up more than a third from the same period a year prior, claims the Association for Advancing Automation.

Meanwhile, **automation** can help reduce labor and production costs. It can also offer a great opportunity for companies to move employees into more skilled roles, learn more about new technologies and, as a result, innovate.

According to a 2020 MIT survey, almost 60% of manufacturers are using **Artificial Intelligence** to improve product quality, achieve greater speed and visibility across the supply chain, and optimize inventory management. Studies show that the use of AI in manufacturing can improve predictive maintenance (possible downtime and accidents) and product quality.

**AR/VR** are increasingly introduced to help train personnel in a safe environment and remotely (and safely) maintain equipment. Implementing AR/VR results in greater efficiency, improved accuracy and more targeted, predictive maintenance by providing more visibility and insight into processes as they occur.

## Data-driven inventory and supply chain management

In today’s highly dynamic marketplace, agility is a key to staying competitive.

Having too little inventory can negatively affect production volume, profits and relationships with customers, while keeping too much inventory can be costly to store and difficult to sell.

Also, customers’ expectations are super high today – they want fast delivery and demand quality products. That’s why a hassle-free, automated supply chain is crucial.

To ensure on-time delivery, product availability and ultimately customer satisfaction, manufacturers need a predictive overview of everything from the flow of raw materials and inventory, to shipping and profitability.

And for that – you need a system that will monitor and analyze data! To effectively track and manage inventory and supply chain processes, the manufacturing industry needs to further invest in digital means, such as integrated CRM and ERP systems.

The data-driven inventory management can save the day by helping identify supply chain fluctuations and adapt to changing circumstances.

## Self-service for customers

To make sure your goods reach your customers on time, a manufacturing business needs to have an efficient delivery and communication system.

One of such systems is **customer self-service**.

Instead of using phones to contact people for order updates, etc., customers (such as partners, distributors, and end-customers) want to have immediate access to information!

No waiting for replies or double-checking of order status. What they need is information on what’s going now, right here, right now.

That’s where a self-service portal is a godsend for the manufacturing industry. It’s a place where customers can quickly find a solution, track or accept tasks, or simply find information to keep the wheels rolling – all without bothering anyone.



# TOP DIGITAL TOOLS YOU NEED TO TAKE YOUR BUSINESS INTO INDUSTRY 4.0

Those are digital tools, such as software solutions and smart technologies, that run the world today.

Not a single area of economic activity is void of digital technology. This means that the only way for businesses to stay viable is to jump on the digital bandwagon.

And the manufacturing industry is no exception.

Due to its typically complex and interconnected processes, large projects and production volumes, as well as extended teams, the industry needs digital tools to collect and analyze a lot of real-time data.

Access to accurate data helps manufacturing businesses:

- streamline processes,
- save costs,
- anticipate expenditures,
- balance production.

But where to start? Here are the key software solutions that will help those in the manufacturing industry to better manage their operational processes.

**“The only way for businesses to stay viable is to jump on the digital bandwagon”**



IM

## Inventory Management (IM) software

Keeping track of inventory and supplies is everything for manufacturers.

The logic is simple – if there are not enough materials, production could stop; if there is a surplus, the distribution and revenue will suffer. Not to mention that manufacturing businesses often need to track and plan the inventory for not just one, but multiple locations!

The IM software helps manufacturing companies to not only plan inventory and track stock volumes, but also to forecast demands and manage orders and suppliers.

For example, if inventory levels drop, the notifications will be sent to responsible people, so that timely reorders are initiated. Reordering can even be automated depending on the levels of stock.

Also, the IM software helps to forecast what products are likely to be in high demand, and plan supply and inventory needs well in advance.

SCM

## Supply Chain Management (SCM) software

Successfully managing the supply chain is an art these days.

Manufacturing businesses are severely affected by the distractions to the global supply chain. Of course, there are things they can't control. But there's also a bunch of processes that can be regulated with the help of smart digital solutions.

That's why manufacturers need a SCM system that will help them operate essential processes such as:

- ordering and tracking the availability of raw materials,
- communication with suppliers,
- contract, document and invoice management,
- controlling purchasing costs,
- shipping and delivery tracking,
- managing customer returns.

If your manufacturing company can keep track of all these processes in a centralized way, you'll be able to successfully plan into the future, avoid unnecessary purchases and supply shortages, and prevent overstock.

ERP

## Enterprise Resource Planning (ERP) software

Oldie but goodie – the ERP software is a must-have for most companies, not only in manufacturing.

Without exaggeration, ERP is a true savior for businesses that want to regulate their financials, operations and resources.

An ERP is a back-office system that automates and manages activities like accounting, purchasing, pricing, transactions, and reports.

When it comes to the manufacturing industry, ERPs can help you stay on top of a host of activities:

- automate daily processes,
- access real-time data,
- better fulfill customer needs,
- better manage resources and inventory,
- optimize projects and manage costs,
- create business intelligence reports.

CRM

## Customer Relationship Management (CRM) software

Another tool that can do miracles for manufacturing businesses is a CRM system. We must confess it's also a favorite of ours.

From storing all customer, supplier, distributor data in one place, to analyzing consumer behavior and collecting sales data to identify the best opportunities, a good CRM helps you take care of relationships and use them to make sure revenue grows.

A modern CRM system can help manufacturers:

- store, access and share all customer and partner data and communications in one place;
- create and monitor open sales, build pipelines, follow up on and analyze sales opportunities;
- forecast sales, calculate profits, score leads, analyze trends;
- register and handle customer service requests and offer access to self-help resources;
- create, segment and send off personalized marketing communications.

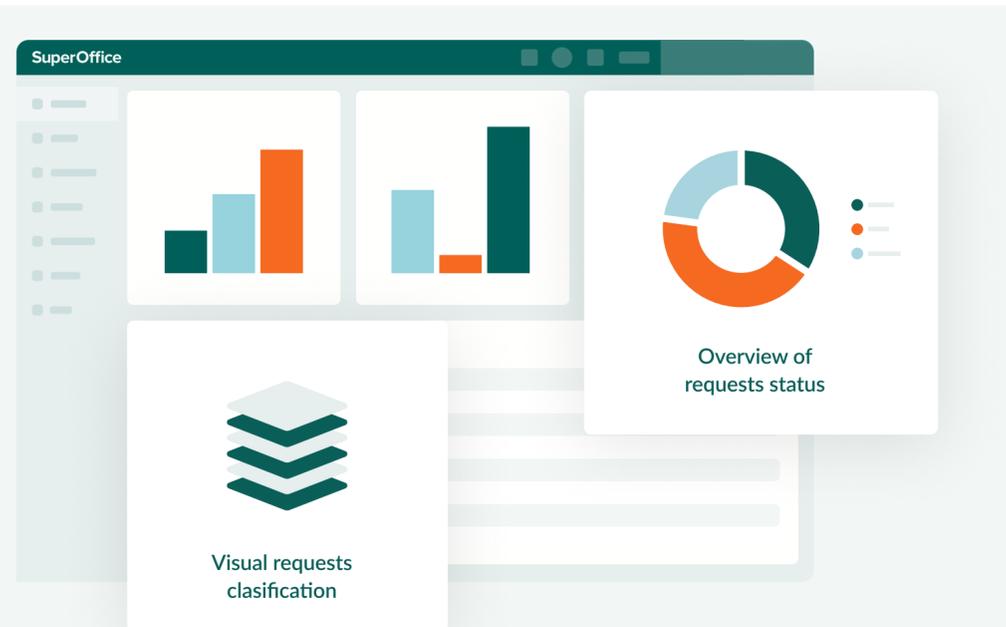
**But that's just the tip of an iceberg of how a CRM system can benefit a manufacturing company.**

# HOW A CRM SOLUTION CAN HELP MANUFACTURING COMPANIES

Reducing bottlenecks, maintaining smooth B2B relationships with partners, suppliers and distributors, and mitigating supply chain inefficiencies are just a handful of concerns that manufacturers deal with every day.

For manufacturing businesses to work efficiently, they need a number of systems and processes to work together as a fine-tuned instrument. Unfortunately, as these systems multiply, communication can easily break down.

When it comes to the CRM system, it's easily one of the most universal solutions for manufacturers. In fact, of all the industries that can benefit from CRM tools, the manufacturing sector probably stands to gain the most!



Let's take a look at some key reasons why.





## System integration and centralization

No matter the industry, access to and sharing of all information for everyone is a guarantee of streamlined and well-organized work. Sadly, often different manufacturing processes are managed by different, unconnected systems and applications, while data is stored in siloed places.

That's why it's vital to centralize data, make sure your systems talk to each other and are constantly updated. This allows you to be agile, work more productively and make fewer errors.

Implementing a CRM solution that can be expanded and integrates with a number of third-party applications and ERP systems will help your manufacturing business to track inventory, delivery terms, status of invoicing, do sales forecasting and send quotes.

**The bottom line:**  
A CRM system helps manufacturing companies to avoid making decisions that are not based on real-time and updated data, which may jeopardize resource planning, pricing and delivery.



## Improved product quality

One of the unique ways that manufacturing organizations can benefit from the CRM software is through the ability to improve products. A CRM tool offers a direct link to your customers and prospects, which improves communication between companies and customers.

Whenever customers provide input (feedback, reviews, service requests), this information can be saved and added to the database where product reports can be generated. This gives manufacturing companies a mechanism for analyzing feedback in order to make improvements and get products out to customers as quickly as possible.

**The bottom line:**  
A CRM system can help manufacturing companies create better products for their customers.



## Increased forecasting accuracy

Real-time sales forecasts are critical when it comes to communicating with suppliers, shippers and material handlers.

CRM systems allow manufacturing companies to gain insights into future sales growth based on their current pipeline and alternate pipeline scenarios.

In other words, a CRM system helps you know what sales opportunities you currently have, what steps to take next, and how you've performed against your goals.

**The bottom line:**  
Production planning requires careful attention to details like timing and resource availability, and a CRM system can help ensure a smoother production pace and timely deliveries.



## Improved supply chain visibility

A well-functioning supply chain relies on a system that utilizes ERP and CRM integrations.

Such integration, in turn, maximizes supply visibility. Insights into operations, inventory, order processing, warehousing, and distribution from both systems allow for better supply chain management.

Equipped with such visibility, manufacturing organizations can better manage production schedules and inventory levels, so that purchasing and procurement can become more streamlined.

**The bottom line:**  
Intelligent supply chain management can be significantly improved with the help of a CRM solution.



## Unified order fulfillment and delivery

End-to-end processing transparency not only maximizes supply chain resilience, but also minimizes the impact of disruptions on manufacturing companies and their customers.

It means that those business that take order fulfillment and delivery very seriously can increase customer satisfaction and operational efficiency.

Information from shipping partners and warehouses can easily be stored in CRM tools that streamline communication and automate workflows for speed and efficiency.

**The bottom line:**  
CRM benefits extend to warehouses and suppliers for unified order fulfillment and timely delivery.



## More efficient quoting process

Manufacturing companies are complex organizations with even more complicated quoting processes.

A fully integrated CRM system can quickly bring engineering data into the process, to refine quotes that meet customers' needs for accuracy.

Real-time supply chain data can be updated instantaneously across a network, so that each department connected to the CRM can have the most up-to-date information in order to create quotes.

**The bottom line:**  
A CRM solution can help keep sales teams in the loop about the latest prices and product availability.

# CONCLUSION

The Fourth Industrial Revolution, Industry 4.0, is actively transforming all industries around the world. And the manufacturing industry is no exception.

Key emerging technological trends – spread of digital technologies, IoT, robotics, automation, AI, AR/VR, data-driven business operation models, customer self-service – are advancing operational processes and accelerating the overall development of the industry.

One thing is clear – disrupted and accelerated, the manufacturing industry is in the process of active **digital transformation!** The new smart technologies revolutionize the industry's systems of production, management, distribution, and governance.

Those who want to stay ahead of the game need to act and use digital tools to stand out from the crowd. Software solutions, such as **Inventory Management, Supply Chain Management, ERP and CRM**, help manufacturing businesses to better manage their operational processes.

Want to find out how [SuperOffice CRM](#) can help you improve the operations of your manufacturing business, amplify your digital transformation, and withstand the industry's winds of change? Then [get in touch!](#)

## About SuperOffice



Driven by a passion for Customer Relationship Management (CRM), SuperOffice makes award-winning CRM software for sales, marketing and customer service.

As the leading European CRM provider, SuperOffice is trusted and used by more than 6,000 companies.

