

Manufacturing Strategic Planning Trends for 2021



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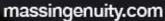
7 Key Considerations for Manufacturing Planning in 2021

Manufacturing remains a huge industry in the United States and around the world. And, in the past 12 to 18 months, the manufacturing industry has experienced a pair of industry-rattling trends that are decidedly different.

First, manufacturing companies have gained access to the most advanced technologies ever available in the industry. These technologies have the power to transform operations, reducing lead times and improving both quality and revenue. But, at the same time, the COVID-19 pandemic has placed a significant strain on day-to-day operations. There are manufacturing companies and clients that no longer exist in 2021 due to the challenges related to the pandemic that dominated the world in 2020. As the pandemic subsides and advanced technologies remain available to manufacturing companies, now is an ideal time to return to strategic manufacturing planning exercises. What will 2021 hold in store for your business? Only a solid plan can help you determine where you want to go and how your company can get there.

Here's a look at the different stages of manufacturing planning, as well as 7 trends that strategic plans should address in 2021







The 3 Stages of Strategic Manufacturing Planning

Strategic planning in the manufacturing industry should start with a simple framework. Break the planning work up into these 3 basic phases:

CREATE AN AGENDA

What direction will guide your firm? Again, this question may be more relevant in 2021 than in years past, given the changes that may have taken place in your business over the past 18 months.

OUTLINE DESIRED RESULTS

What specific, measurable results should your company's direction drive toward?

IMPLEMENT THE PLAN

Implement the strategic plan in such a way that you track and measure realworld outcomes against the desired results.

Of course, each of these phases will include a great deal of debate among firm decision-makers and an enormous amount of detail as your company chooses a direction, settles on desired results, and then implements its plan.

What Should Your 2021-22 Plan Address?

As we collectively emerge from the COVID-19 pandemic, your manufacturing company is likely taking a forward-looking posture and searching for competitive advantages. To ensure that your firm positions itself for success in 2021 and beyond, consider the following 7 trends as you piece together a strategic plan.

1. The Pivot From COVID-19

Not all manufacturing companies can simply go back to the way things used to be in a post-COVID-19 world. As noted above, some manufacturing companies didn't make it out of the pandemic, and almost all manufacturing companies likely have a client that didn't survive 2020.

But how will your manufacturing business respond to the realities of 2021? Gartner has provided <u>a series</u> <u>of insights</u> into how businesses across industries are handling the COVID-19 pandemic. In 2020, we went through the "respond" and "recover" phases, wherein companies took immediate action to keep workers safe and then restarted and scaled activities.

We're now entering a third phase — "renew." During the renewal phase, companies will have to create new foundations for their businesses. These new foundations should be designed to achieve one of the following 5 outcomes:

Retire: Businesses may determine there's no path forward and begin plans to retire operations altogether.

Reduce: Businesses may find that new realities will force them to operate at lower capacity for the foreseeable future.

Return: Business may discover that they can return to operations in much the same way they approached them before COVID-19.

Reinvent:Businesses may grow by creating new business lines.

Rescale:Businesses may embrace changes from the pandemic in such a way that operations boom and scale to heights previously unknown.

It's important that your company's decision-makers spend time thinking through where the business should go in 2021 and beyond, whether based on this 5-point scale or another framework. If you are focused on strategic manufacturing planning for 2021, it's unlikely you're looking to retire operations. But how exactly will your business pivot from COVID-19 this year?



2. Predictive Maintenance

There's nothing new about preventative maintenance in the manufacturing industry, but it continues to be an important consideration for firms around the world. Downtime happens. But extended downtime of even an hour or longer can start costing manufacturing companies lots of money. Depreciation happens, too. Over time, your equipment gets older and less effective, reducing your company's productivity. The cost of replacing equipment often represents a serious investment that requires significant planning. But preventative maintenance helps on both fronts reducing downtime and extending any piece of equipment's lifespan.



The good news is that it's easier than ever to execute on preventative maintenance plans due to the manufacturing-related technologies now available. When you find the right manufacturing technologies and combine them with high-quality enterprise performance software, you'll be able to anticipate maintenance needs better than ever, reducing downtime and saving your business real money.



3. The Internet of Things (IoT)

What technologies are powering preventative maintenance? Let's start with the manufacturing Internet of Things — sometimes known as IoT. The IoT is a term for "smart" equipment and tools that manufacturing companies are now quickly adopting and introducing in their plants.

These pieces of equipment and tools are designed for connectivity, which means enhanced remote monitoring capabilities that make preventative maintenance programs easier to implement.

The collective move toward "smart" factories, plants and manufacturing sites is known as Industry 4.0. If your manufacturing business is not making Industry 4.0 a key consideration during strategic planning, it will have a hard time competing in the manufacturing future that is rapidly approaching.

4.3D Printing

3D printing is empowering preventative maintenance, not from an anticipation standpoint, but rather from an execution standpoint.

At many plants, it can be incredibly difficult to find factoryissued replacement parts for equipment that's been in use for decades. 3D printing, also known as "additive technology," allows operators to quickly create the small replacement parts needed to properly maintain equipment and generally reduce downtime.

The trends on this list can also work in tandem. For example, the IoT can help you identify emerging maintenance issues. And then 3D printing can help you quickly fabricate a replacement part without the need to look for a supplier.



5. Augmented Reality



Augmented reality also helps with preventative maintenance — again, from an execution standpoint.

In many cases, factories use augmented reality to overlay digital schematics and instructions atop real machines. This digital content is used to guide operators through simple maintenance and repair tasks. Where previously operators relied on their own experience or hard-copy guides to know how to perform these maintenance and repair tasks, augmented reality accelerates the time needed to complete these tasks — and increases the effectiveness of the operators conducting the maintenance or repairs.

6. Pilot Plants

New manufacturing technologies should be introduced to factories and plants as part of a careful, deliberate process. Many manufacturing companies are now using pilot plants to test out new technologies before implementing them throughout an entire company or network of different sites.

Any manufacturing company wants to reduce risk — the risk of downtime, the risk of poor quality, the risk of safety threats to workers, etc. These risks aren't present with all new manufacturing technologies — but pilot plants help reduce any risk by providing smaller, more stable environments for testing. If new technologies thrive within pilot plants both from safety and effectiveness standpoints, it's safe to distribute them more broadly.

7. Big Data

You may hear the term "big data" thrown around as an elusive concept with fuzzy real-world implications. But manufacturing companies are in a unique position to take advantage of big data, leveraging information to make plants more efficient, more effective, and more safe.

But there's a natural barrier to using big data — gathering data is easy, but properly analyzing and drawing insights from that data is far more difficult. Manufacturing companies really need enterprise performance software that can help them from the data gathering phase to the phase of analysis and drawing insights from that data.





The Challenge: Tracking Your Plan's Effectiveness

How can your business best gather, analyze and draw insights from performance-related data? At Mass Ingenuity, we offer Results Software that simplifies and streamlines the data process — guiding you from collection to analysis and clear conclusions.

When you try to manage enterprise performance management data on your own, the time you invest in strategic planning leads to poor follow-through and a serious lack of accountability. But, when you choose an enterprise performance management tool like Results Software, you get the visibility you've always wanted into your business — plus data to analyze and draw conclusions from at your fingertips.

Start taking advantage of data available to your manufacturing company when you <u>get in touch to schedule</u> <u>a demo of Results Software</u>.

Manufacturing Strategic Planning Trends for 2021

The COVID-19 pandemic will hopefully be soon behind us and many manufacturing executives are now understandably heaving a sigh of relief considering the havoc the health crisis wrecked on their operations. The more savvy ones have now begun to initiate new strategic planning initiatives to effectively prepare for the new normal. The economic challenges that characterized the pandemic are now forcing manufacturers to drastically change their business models to retain a competitive edge, fast-track recovery, and prepare for future growth. While the manufacturing industry is still recovering from the economic shock which was triggered by COVID-19, most companies are now learning how to navigate better in an uncertain business environment. Many have begun to embrace newer priorities including safeguarding their existing clientele base. Not to forget the creation of a much safer and healthy workplace for all their staff and formulating contingency plans in anticipation of a 2nd wave. To this end, where possible, remote work has evolved to be one of the key aspects of the new normal for numerous manufacturing businesses.

On the other hand, most operators in the manufacturing sector have started to invest heavily in and leverage technology to improve their various interactions with their current and prospective clients. With the emergence of virtual selling, a substantial number of companies are increasing their technology investments in order to remain in contact with their targeted clients and also working on the safety needs of their employees. Also, manufacturers have been forced to rethink their sales channel strategies due to the fact that face-to-face customer contact has diminished, thanks to the safety measures enforced by authorities. Some have decided to settle for direct online sales channels in terms of wooing prospective clients. While others are prioritizing doing business via partners with full online selling capabilities. Yet others have decided to make use of a mix of both direct and indirect sales channels. Here then are some of the most prominent manufacturing strategic planning trends that are slated to characterize 2021 and beyond.





Manufacturers will have to seamlessly embrace newer customer preferences

The manufacturing industry's customer journey has, over the recent years, undergone rapid changes, and it is now increasingly driven by big data and technology-enabled buying channels. Manufacturers are now finding themselves in a position where they need to assist clients to fully understand their initial product acquisition costs and even post-sales prerequisites. Companies in this given sector also have to effectively implement and utilize technology to make sure their clients can continue to do business with them in a convenient and hassle-free manner. Also, the shift to technology now forces manufacturers to integrate more technology-proficient roles in their day-to-day business operations, while at the same time training their staff on the use of technology enablement tools. More established companies are now taking the lead in embracing technological tools, training, and eCommerce platforms.

Anything as a service (XaaS) offering will be on the rise in the manufacturing industry

The XaaS business model, which was first developed in technology and software sales, is now rapidly gaining much traction in the manufacturing industry. For those who might perhaps not be in the know, XaaS offerings are widely acclaimed for greatly minimizing the strain exerted on client budgets. They as well help manufacturing companies establish recurring revenue streams that go a long way in improving corporate valuation. On the flip side, XaaS models enable manufacturing organizations to remain connected with their clients all through their product/service subscription life, which generally takes no less than 3 years. Many businesses in this sector, particularly the ones that offer software, are now quickly extending their utilization of XaaS business models. Additionally, most of them are extending their sale of integrated products/services, and even going out of their way in tasking distributors to play a role in originating and supporting software solutions.



Manufacturers will embrace the integration of marketing, sales, and customer service

Effective customer persuasion is increasingly burgeoning beyond marketing to both sales and customer service. This definitely means these manufacturing business departments can't afford to function in silos anymore. Sales and marketing operations are, now more than ever, being integrated to enhance line of sight in customer data, leveraging diverse newer technological channels like social media networks. As such, manufacturers who have embraced this trend are utilizing account-based marketing, with a focus on data analytics and actionable insights to obtain further value from conventional marketing operations. As a direct consequence, many manufacturing businesses have introduced integrated commercial roles across their organizations. Some of the most notable are Sales Development Representatives whose job is not only to qualify leads, but leverage innovative outreach tools as well. Also, there are Digital Marketing Managers who are specifically tasked with driving broad-based development and management of technological tools and roles. Not to mention Customer Success Managers whose mission is to extend sales opportunities by primarily targeting subscription-based clients. There are, as well, Digital Customer Service Representatives who are tasked with boosting responsiveness and help in making sales teams more productive.

There will be an increasing alignment of talent and compensation to manufacturers' growth strategy

Over the recent years, commercial roles in the manufacturing industry have become an increasingly extremely competitive job market. To this end, even when taking into account the current precarious economic conditions, companies are still competing fiercely for skilled, experienced, and technology-proficient workers. Ever since the year 2017, the manufacturing sector has experienced a significant jump when it comes to cost of sales compensation as a revenue percentage. Additionally, a looming retirement cliff among field representatives in this industry is further complicating this issue. However, field representatives are still required to be in a position of developing and maintaining key client relationships in order to adequately meet customer access opportunities in the foreseeable future. This certainly implies manufacturing organizations will have to retrain and redeploy this segment of their employees to meet this trend. Also, sales compensation programs in this industry are, now more than ever, being restructured to offer appealing incentives to field representatives as businesses are preparing themselves for future growth. With the increasing shift towards eCommerce and virtual customer engagement, manufacturers are actively seeking technologically and technically-oriented specialists to fill these emerging roles. As such, future growth in the manufacturing sector has been shown to favor more specialist roles because they facilitate a customer-facing touchpoint that delivers top-value business opportunities.



Investments in revenue operations in the manufacturing industry will be on the rise

Even before the COVID-19 pandemic, more and more manufacturing businesses were choosing to formalize and centralize sales operations utilizing expanded charters. In its turn, this enabled them to efficiently cover not only account segmentation, but also account planning, sales resource allocation, and more. Consequently, new sales operation teams are now being fully empowered to drive digital seller efficacy and customer engagement. This places them in a good position of accessing new insights and impact both recurring and renewal revenue generation streams. The main focus for this growing trend includes sales compensation management, CRM systems oversight along with continuous improvement, business reporting, and insights, and even digital enablement tools. In 2021 and beyond, sales operation points between sales, marketing, and customer service. Additionally, areas that are conventionally the preserve of marketing teams such as advanced analytics and consultative support, will increasingly be made use of in other manufacturing departments. Formalized sales/revenue operations in the manufacturing industry have been proven to substantially improve efficiency and productivity as complexity levels in commercial models escalate and digital enablement tools proliferate.

Manufacturing direct and indirect online sales channels strategies will evolve

Largely thanks to the 2020 COVID-19 pandemic, face-to-face contact between customers and business establishments has taken a plunge, not only in the manufacturing industry but also in virtually all other ventures in general. From a purely manufacturing point of view, this trend is now forcing companies to greatly rethink their customer contact channel strategies. At this given moment, some manufacturing organizations have opted to put in place their very own eCommerce platforms to effectively reach out to their prospective customers. On the flip side, those businesses who, for one reason or the other, have decided not to set up their own eCommerce platforms, have begun to prioritize working hand in hand with distributors who have complete online sales capabilities. For those who have taken the direct sales channel route, many have extended their enterprise programs and are boosting their efficiency through online sales experts and hybrid internal sales roles. In the latter regard, the expansion of digital roles and business development representatives, has also triggered the expansion of the breadth of internal sales roles. However, despite this growing shift towards digital sales channels, not all manufacturers are embracing a totally direct sales model. A sizable number of them instead depend on distributors who possess online selling capabilities or even leveraging a blend of both direct and indirect sales channels.

ISO 9000 compliance will be on the rise among manufacturers

ISO 9000 compliance has been clearly proven to be a practical and hassle-free means of greatly improving manufacturing strategic planning. First of all, ISO 9000 focuses on a processes approach towards quality management. This means it enables manufacturers to view their business objectives and core operations through the lens of processes that helps them to focus on the big picture. So, instead of operating in silos, ISO 9000 processes enable organizations to accurately determine issues and concerns in terms of product delivery. In turn, this culminates in improved effectiveness and efficiency in realizing business goals. Other notable tenets of ISO 9000 certification are continuous improvement and employee engagement.



The first leverages evidence-based decision making where manufacturers are encouraged to make dataoriented decisions. This offers a framework for comparing results and building organizational confidence. As for employee engagement, businesses are encouraged to include all their workers in the achievement of strategic objectives. This makes workers more committed and motivated to contribute to the organization's success.

Performance management software will improve manufacturing record keeping

Leveraging performance management software like Results, can help manufacturing businesses maintain compliance with regulations, thwarting security risks along with boosting their workflows and productivity. Besides this, it helps in the business decision-making process, enabling organizations to take quicker and accurate decisions and stay one step ahead of their competitors in their strategic planning.

6 Major Trends Impacting Manufacturing In 2021

If there was an industry that felt the impact of the 2020 COVID-19 pandemic, it was the manufacturing sector.

The industry had already spent much of the last few years attempting to shift its structure and response to meet increased global competition – while simultaneously working with increased global tariffs from the Trump administration. These changes, along with the rise in automation and intelligent technor forced manufacturing to keep moving at a sprint to keep up with consumer expectations.

Then came the arrival of a border-closing global pandemic. As COVID-19 raged across the world the manufacturing industry felt a one-two-three punch of disruptions that left many wondering if the industry could recover. Supply chains buckled under the strain of meeting panicked demand, and production lines halted as workers became sick themselves.

Fortunately, the future remains bright for manufacturing. The fact that the manufacturing sector is a relatively resilient and essential industry – as well as a fast-rebounding economy – are good omens for the new year.

However, above all other external factors, manufacturing will be most impacted by a single mega-trend: data-driven revolution. As the world continues to move in an increasingly digital-first direction, consumers' and companies' interaction with manufacturers is changing rapidly. The addition of smattech, data-driven solutions, and global connectivity is altering how the industry operates – and 2021 will see that evolution only increase in speed.

In the next pages, we will break down six of the major trends that will impact manufacturing in 2021 – both as a response to the 2020 pandemic and in preparation for the future.



1. Manufacturing-Based Machine Learning Technology Will Grow & Expand



2021 will see a continuation of the explosive growth in automation in manufacturing. These powerful technologies will be driven by innovations in both artificial intelligence (AI) and the fast-growing field of automation programming known as machine learning (ML). Rather than depend on a limited human workforce alone, manufacturing will continue to adopt ML-led automation across the industry.

ROBOTICS

The International Federation of Robotics reports that as of late 2020, there are <u>2.7 million industrial robots</u> operating in warehouses and factories around the globe. This is a growth of 85% in just five years, and the coronavirus pandemic looks to only put a small dent in the rate of growth. Asia leads the way in automated manufacturing, with North American and Europe fast behind.

5G IMPLEMENTATION

2021 will likely see continued adoption of 5G technology across the world. While the adoption of 5G hasn't been without controversy, this has remained mostly confined to the public rather than the private sectors. In fact, reporting firm McKinsey forecasts that nearly a <u>quarter of the globe will be plugged into 5G coverage</u> by the end of the decade – with manufacturing seeing a boost up to \$650 billion GDP due to faster wireless technology.

DIGITAL TWIN TECHNOLOGIES

Another innovation led by machine learning is the availability of *digital twins*. These technologies allow for manufacturers to double their output of products before the launch of the entire production process – which can help reduce costs across the board and streamline manufacturing for all industries.

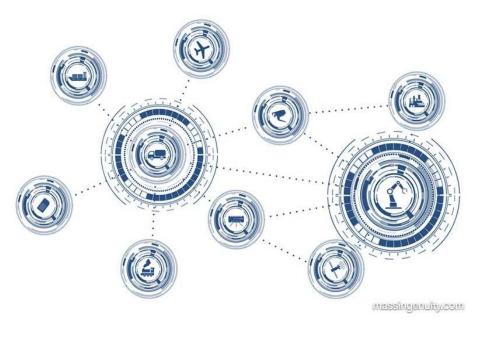
3D PRINTING

While 3D printing was already becoming a part of the manufacturing process in many fields, continued advances in the capabilities of 3D printing and the reduction in operating costs of printers will see their popularity continue to climb. While these are but a few examples of ML-led technology advancements, it is clear that automation will continue becoming a norm in manufacturing, especially as firms look for ways to reduce overhead costs and catch up from 2020 losses.

2. IoT Digital Connectivity Will Drastically Increase

The Internet of Things (IoT) has radically changed how manufacturers navigate both their production and distribution processes. Unfortunately, for all the advances in IoT systems for manufacturing, the global pandemic was far too disruptive for most supply lines to maintain the status quo.

However, the pandemic did act as a "global wakeup call" for manufacturers who were not yet taking advantage of the streamlined potential of IoT connectivity. Tech firm Accenture reported that nearly 94% of all Fortune 1000 businesses saw a drastic impact on their supply chains due to COVID-19.

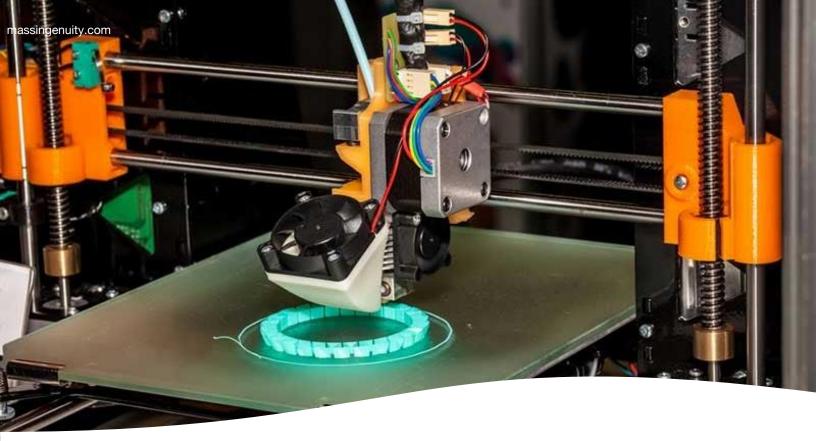


Those disruptions lead to angry consumers, which then moves backward from the company to the manufacturer. As a result, companies will demand that manufacturers adopt IoT technology that allows for fast reporting and response across their systems, should another black swan event occur. In 2021, modern manufacturers will use IoT solutions to increase their overall connectivity in nearly all aspects of their operations – from inventory management and equipment maintenance to HR and customer service. Breaking down organizational silos will further allow manufacturers to increase their speed and reduce friction from disruptions.

3. The Adoption of Predictive Maintenance Will Become Necessary



Similar to the implementation of IoT solutions across manufacturing systems, the industry will also see a drastic rise in predictive maintenance technology in 2021. Predictive maintenance utilizes machine learning and artificial intelligence to create predictive models that allow nearly every piece of equipment used in the manufacturing process to be monitored in real-time. Rather than depend on employee-led inspections, predictive maintenance will use innovative sensors and IoT technology to alert manufacturers of equipment issues and failures far before becoming a costly issue. Predictive maintenance solutions can increase the lifetime value of assets – which can reduce costs across the board.



4. The Supply Chain Will Be Strengthened With Data

COVID-19 disrupted global supply chains unlike any other event in modern history. As manufacturers emerge from the dust and debris of 2020, they will be looking for ways to prevent massive supply chain disruptions in the future.

The answer may not be in overhauling the supply chain system but strengthening it with data-driven solutions. With innovations in ML and automation, manufacturers will increase their ability to monitor, react, and supplement any supply chain disruptions quickly and with less downtime.

Additionally, 3D printing and robotics will help increase the ability for multi-sourcing and allow for production to occur in more places. This can help relieve the strain on supply lines when disruptions inevitably occur. With the addition of real-time data analytics, manufacturers can better monitor and optimize underperforming supply chains to increase their overall efficiency.

5. Manufacturing Will Continue To Become Agile & Lean

No longer will lean operation philosophies be relegated to the white-collar world. In 2021, manufacturing will continue to push toward a more agile and lean operation across the industry.

In the same way that companies can benefit from increased productivity and closer teamwork, manufacturing will see a boost from team-focused culture upgrades that can ultimately decrease the amount of wasted time, effort, and materials.

6. Employee Health & Wellness Will Rise In Importance

Why did 2020 see such a massive disruption from manufacturing? While it is easy to offer blanket blame to COVID-19, part of the issue was the high rates of infection and sickness in the teams that work in the manufacturing sector.

Working in close quarters for long hours, many employees in manufacturing roles became sick with COVID-19, and the infection spread across the workforce in individual warehouses and production floors. In many cases, the entire company had to shut down for a time due to a lack of workers.

In 2021, a focus on employee health and wellness will continue to grow as manufacturing continues to depend on the human workforce. As the manufacturing industry still holds one of the highest rates of on-the-job injuries, a move toward a lean and higher-performing workforce will require the use of intelligent technology and innovative communication systems to ensure that all team members remain healthy and well.



2021 Manufacturing At A Glance: Recovery & Revitalization

Much of the 2021 trends in manufacturing center around the concept of recovering from the impacts of the COVID-19 pandemic on the workforce and supply chains.

However, the problems that emerged across 2020 were not due to the coronavirus alone but were issues that rested under the system's surface for many years. The pandemic simply brought these issues to the surface in startling ways.

However, recovery cannot happen without revitalization. For manufacturers to recover and move forward with confidence, they will need to continue adopting technological solutions that will allow them to avoid the costly impacts of disruptions. The addition of ML and AI technology and the implementation of IoT solutions will help manufacturers increase their effectiveness and output while lessening the strain on their workforce. By assisting teams in working smarter rather than harder, manufacturers will be able to recoup losses in 2021 and move ahead boldly to tackle the next disruption.

If you are ready to learn how to manage your data and boost your company's performance in all areas, contact Mass Ingenuity. Our team of data experts has years of experience helping organizations and companies use data to increase their effectiveness. With the right data solution and tools at your disposal, you can improve your potential and prepare to step into 2021 as a significant competitor with manufacturing operations.