




Aptean Process Manufacturing ERP

6 Critical Challenges Process Manufacturing Must Confront





“The ongoing challenges in attracting entry-level and skilled workers in the right geographic markets are often frustrated further by misconceptions about manufacturing work, especially amongst younger generations.”

Deloitte



Challenge 1: Skills Shortages

Skills shortages are challenging the entire North American manufacturing industry, with predictions that up to 2.1 million jobs could be unfilled by 2030.

New Aptean research has revealed that process manufacturers are feeling the pressure of recruiting the right talent. 4 in 10 say finding people with manufacturing expertise is a major issue for their business – and there are two key factors driving this problem.

First, process manufacturing is in the process of digital transformation. Organizations are investing in smart factory technologies to automate and enhance production, and this is changing the skills and knowledge required by the manufacturing workforce.

Many manual jobs have been digitized, and so today's employees are expected to have a high level of technology comprehension. And the adoption of smart manufacturing software has also created the need for more professionals with data analytics skills.

Second, the most experienced manufacturing professionals are aging out of the industry. Not only is this logistically challenging, but a vast amount of industry knowledge is also being lost with every retirement – which needs to be replaced as a priority. However, many young professionals don't see manufacturing as an exciting and dynamic career option, which limits the talent pool from which these skills can be replaced.

How Can Process Manufacturers Overcome Skills Shortages?

We've already spoken about technology's influence on employee skillsets, and there is a huge opportunity for process manufacturers to use their digital transformation strategy to counteract current skills shortages.

Accelerating investment in smart factory software will enable process manufacturing organizations to automate manual processes, removing the need to find people with a suitable skillset for that role.

Moreover, process manufacturing technologies can be used to enhance the value of existing employees; if basic tasks are automated, they have time to develop their skills in other areas. And anyone coming into the business will adopt this digital-first approach from day one, rather than having to create a business case for onboarding new systems and methodologies – as is often the case for current employees.



47% of process manufacturers plan to conduct a skills audit this year, to identify gaps in staff knowledge.

Many process manufacturing companies are already aware of the changing tide and are taking steps to embrace it. Almost half (47%) of the process manufacturers we surveyed plan to conduct an audit over the next 12 months to identify employee skills gaps, which will inform both their recruitment and digital transformation strategies.

Process manufacturers also recognize digital transformation's role in managing immediate skills issues, as 56% want to use technology to prevent knowledge loss as experienced employees retire. Automation is an opportunity to manage the generational shift, and build a new, tech-driven infrastructure for the future workforce.



“Factories are struggling to find skilled workers for specialized roles such as welders and machinists. Manufacturers are even having trouble hiring entry-level positions that do not require expertise. **The talent shortage is not new – but it’s getting worse.”**

CNN

Challenge 2: Staff Shortages

It's not just an employee skills deficit that is challenging process manufacturers; many are also short-staffed.

Our survey revealed that 35% of process manufacturing organizations are concerned about recruiting and retaining enough people to keep their business operations running smoothly in 2022. And the pandemic is a major influencing factor on these concerns.

While the market is much more stable (and profitable) now than in 2020 and 2021, it's been a turbulent time for process manufacturing. Many organizations were forced to shut factories or scale back production during the pandemic, as a result of social distancing requirements and fluctuating customer demand. And lack of job certainty drove professionals out of the industry.


According to Made in America, 578,000 manufacturing jobs were erased in 2020. And while many manufacturers are now in a position to recruit again, a large proportion of those lost workers have found jobs in other industries.

Staffing shortages are also being compounded by process manufacturing's rapid 'bounce back' from the height of the pandemic. Manufacturers operating in sectors like personal care and CBD are dealing with high levels of customer demand, and they simply can't put sufficient people power in place to keep pace with market appetite.

How Can Process Manufacturers Overcome Staffing Shortages?

To address labor shortages, manufacturers need to look at how staffing gaps can be filled quickly in the short-term, and how a sustainable stream of people can be welcomed into the industry in the long-term.

Many process manufacturers are focused on outsourcing to fix the immediate deficit. Our research found that 53% of organizations are planning to mobilize temporary staff in 2022, while 49% will increase their reliance on third parties such as contract development manufacturing organizations (CDMOs). We've already seen pharmaceutical manufacturers leaning on CDMOs to increase vaccine production during the pandemic.



44% of process manufacturers want to automate more tasks in the next year.

But outsourcing isn't always the most commercially viable solution, and contract workers place much higher training and support demands on permanent staff. Which is why digital transformation plays a critical role in managing staffing requirements as well as skills shortages.

Almost half (44%) of process manufacturers want to automate more tasks in 2022, and 31% are interested in using robotics to digitize low value, repetitive tasks, relieving the burden on staff. Greater investment in smart manufacturing software will enable process manufacturers to manage their existing workforce more effectively, increasing job satisfaction and career progression – to stop more people leaving the industry.

Digital skills are highly transferrable, and 42% of organizations are striving for less rigid job descriptions. By upskilling existing employees to work more dynamically, they can take up new roles within the business to fill operational gaps.

Challenge 3: Maintaining Inventory

It's not been an easy 24 months for manufacturing operations. Fluctuating demand and major supply chain disruption have made it hard to reliably access to raw materials and ingredients, which has significantly impacted on-time delivery rates.

4 in 10 process manufacturers admit to struggling with maintaining inventory levels as a result of market conditions, with 77% saying supply and inventory challenges have compelled them to extend lead times on customer orders. 54% have even cancelled some orders to focus on their higher value customers.


Inventory management is a critical issue for process manufacturers because many organizations are working with volatile or perishable ingredients. These have a limited shelf life, and they may also need to be stored in precise conditions to ensure quality, safety and compliance. As a result, delays and disruption greatly increase the chance of spoilage.

Inventory management is a critical part of the industry's drive for greater sustainability. Process manufacturers are under increasing pressure to limit waste and meet aggressive environmental, social and governance (ESG) targets.



“Optimizing the performance of **industrial processes** is a **complex endeavor**. Operations teams must manage trade-offs among throughput, yield, energy consumption, and environmental impact. And the various levers at the **disposal of these teams** may **reinforce or undermine one another.**”

McKinsey



76% of process manufacturers admit to **having siloed operational data.**



How Can Process Manufacturers Manage Inventory Better?

Simply ordering more materials is not an economically or environmentally-friendly solution to process manufacturing's inventory management problem. However, just in time (JIT) manufacturing may not be the best future model for batch production.

Having seen first-hand the challenges with running a lean operation, there is a strong argument for moving from JIT to 'just in case manufacturing' – but increasing stock levels impact profitability.

With this in mind, a better solution for process manufacturers is to gain a clearer understanding of current and future customer requirements; something that smart manufacturing software is able to achieve quickly and accurately.

The trustworthy data in place, organizations can balance demand with availability. Yet 76% of process manufacturers admit their data is too siloed, while 72% have significant gaps in their business insight.

Digital manufacturing solutions do more than just generate the data needed to improve ingredient management and re-ordering. They centralize recipe and formula management, so organizations can capture changes and modify batch sizes, to reduce wastage while maintaining quality control.


And for manufacturers dealing with perishable or volatile substances, improved inventory management enables them to use ingredients in order of expiration date, to both improve safety and make batch manufacturing processes more sustainable.

Challenge 4: Upstream Supply Chain Disruption

We've already mentioned the impact of material availability on inventory management, and upstream supply chain disruption is proving so problematic that it's worth discussing as its own challenge.

It's been an incredibly frustrating 12 months for supply chain logistics, and third (34%) of process manufacturers say their supplier lead times were still longer than usual at the end of 2021.

Illness, social distancing and self-isolation have all impacted workforce availability, which has then affected the movement of sea and land freight. In addition, extraordinary events like extreme weather conditions, international political changes and the Ever Given shipping container blocking the Suez Canal have further exacerbated supply chain issues.




“The pressures of **covid have forced companies big and small to re-evaluate how resilient their manufacturing operations truly are, and many have concluded they need to have **factories closer to home.**”**

Bloomberg

The major problem with supply chain management is that both struggling and thriving businesses can be equally impacted by ingredient shortages.

With disruption across global trade routes, process manufacturers have been forced to reevaluate their supplier relationships. Many have been compromised by reliance on a small number of suppliers, especially if those providers are based overseas – in China particularly.

Process manufacturers have also been affected by material shortages in other industries. For example, chronic semiconductor shortages are slowing down automotive manufacturing, which is impacting workflow within companies supplying chemicals for vehicle production.



88% of process manufacturers plan to **add new suppliers to their portfolio over the next 12 months.**



How Can Process Manufacturers Improve Supply Chain Management?

Current disruption has highlighted the need for greater supply chain resilience and agility, with 98% of organizations believing technology innovation can add huge value in this area. However, two critical factors must be addressed to make sure digital transformation delivers results.

The first change area is data visibility. We've talked about operational intelligence driving better inventory management, which will make ingredient requirements easier to calculate. But process manufacturers also need to understand the impact of supplier capabilities on their production schedule – and share this information business-wide.

If a delivery of raw materials is delayed or cancelled, manufacturers should immediately understand which orders are affected and put contingency plans in place to meet as many orders as possible. They should also be able to prioritize orders unaffected by the issue, to maintain pace of production.

The second critical area of change is supplier management. 88% of process manufacturers are either in the process of adding new suppliers to their portfolio or plan to do so within the next 12 months, while 85% want to spread orders across a wider number of suppliers.

For many organizations, this will include investment in nearshore sourcing, to avoid an over-reliance on China and other international regions affecting future availability. Local suppliers may not be the cheapest option, but diversifying networks is pivotal to maintaining material availability in a turbulent global market.

Challenge 5 – Finding New Business & Customers

Every process manufacturer has experienced sales peaks and troughs in the past two years, as the pandemic and other global events disrupted traditional demand patterns.


For more than a third (36%) of process manufacturing companies, finding new businesses and customers is their number one priority for 2022 – not just to recover from recent disorder, but to mobilize new revenue opportunities and drive long-term growth.

Our research revealed that many process manufacturers are already in a growth mindset; 38% describe themselves as being in a state of prosperity post-pandemic, while a further 29% have fully recovered from setbacks created by Covid-19. But 1 in 5 organizations are still struggling financially.

At both ends of the spectrum, the hunt for new business presents challenges.

Within prospering companies, intense market competition is pushing process manufacturers to produce goods quicker, without compromising on quality control or profit margin. Meanwhile, struggling manufacturers are being forced to look at new avenues for replacing lost revenue streams.

Adaptability will prove critical to supporting the process manufacturing sector's growth over the next 12 months. Companies must evolve recipes and formulas to keep pace with current requirements, at the same time as identifying customers, sectors and regions that could generate new income streams.



“Those manufacturers that maintained a status quo partly due to a fear of the unknown or making the wrong digital bets were passed by, and their customers moved on to organizations that could take advantage of the next normal of a digital world.”

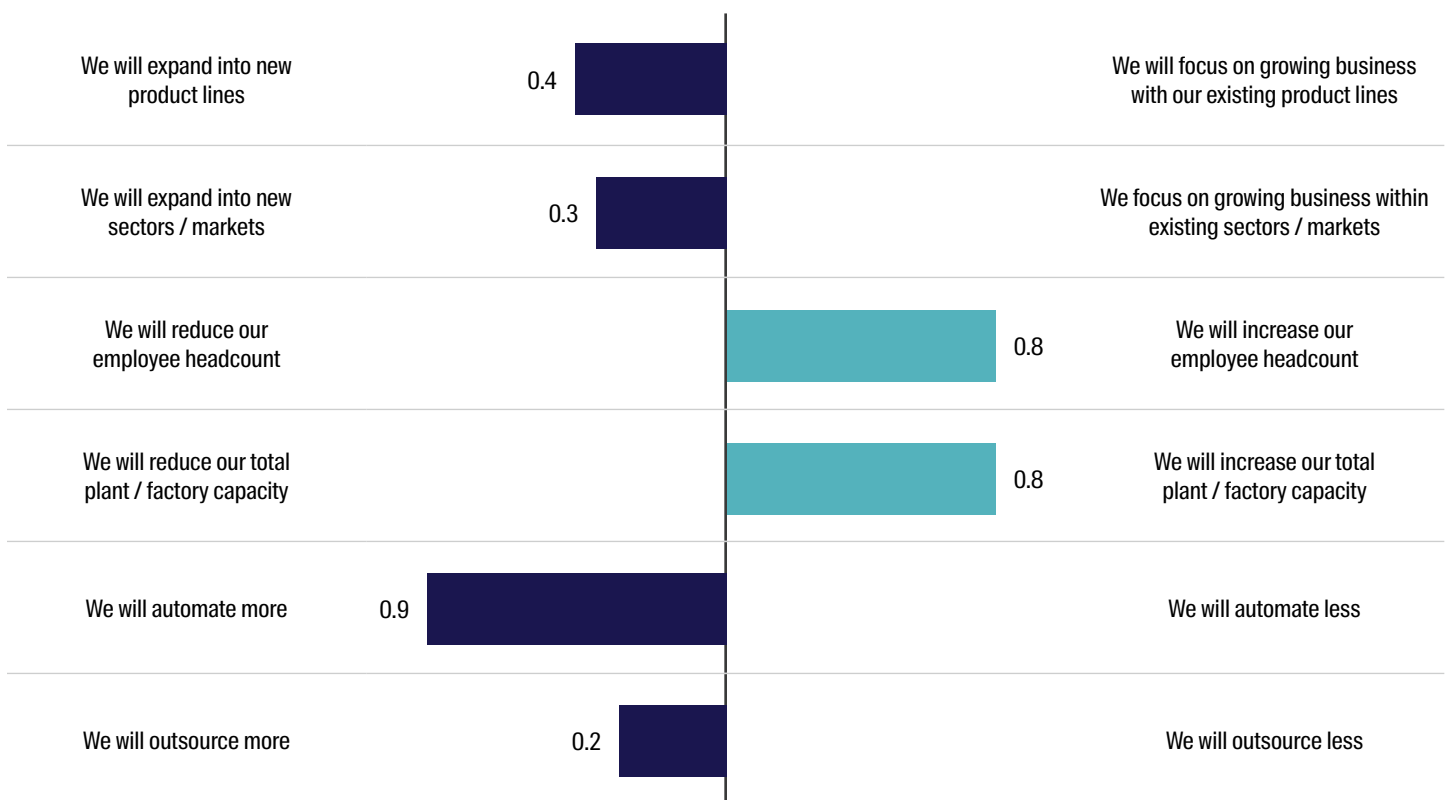
IDC

How Can Process Manufacturers Capitalize on New Business Opportunities?

Market volatility has served two timely reminders for process manufacturers: it's never a good strategy to put every egg in the same basket, and existing revenue streams aren't guaranteed forever.

In response to these lessons, organizations are looking to diversify their customer base; expanding product lines and entering new markets are high on process manufacturers' priority lists. Meanwhile, 28% of the organizations we surveyed say they plan to put greater resource into R&D over the next 12 months to accelerate business growth.


How will you achieve your business growth objectives over the next three years?



The challenge for process manufacturers is validating and pursuing new business opportunities alongside current workload, to ensure that new opportunities yield profitable growth without compromising established relationships.

Many process manufacturers will be looking beyond their traditional remit to find suitable areas for expansion. Personal care products, nutraceuticals and CBD production have all experienced significant sales growth in the past 12 months and are attracting wider interest as a result.

Our research revealed that 91% of process manufacturers have expressed an interest in entering the legal cannabis market. But with multiple companies going after the same opportunities, efficiency, quality and reliability of service will be critical to attracting and retaining customers in increasingly competitive business areas.



33% of process manufacturers struggle to meet industry regulations.



Challenge 6: Meeting Industry Regulation and Compliance

While all manufacturers have standards and certifications to meet, process manufacturing is among the most highly regulated sectors. So it comes as no surprise that managing industry compliance is a major business challenge.

Non-compliance can have serious financial, operational and reputational consequences for process manufacturing organizations. Yet 33% told us that they struggle to meet industry regulations – with CBD manufacturers finding it most difficult.

This comes as no surprise, as the legal cannabis is both incredibly legally complex and constantly evolving. For example, New Mexico recently introduced [new cannabis laws](#) requiring manufacturers to provide a diagram of their work premises and install security video cameras, as well as agreeing to destroy any tested batches that are found not to comply with state health and safety standards.

Meanwhile, CBD manufacturers creating edible goods are finding that the efficacy of active ingredients is being affected by production processes and temperature. Consistent, compliant products are not easy to achieve.

How Can Process Manufacturers Manage Industry Compliance?

Traceability is critical to the future of process manufacturing regulation, and many companies are already reinforcing their capabilities in this area.

50% of organizations we surveyed are improving their forward and backward tracing capabilities, while 51% are planning to increase quality checks over the next 12 months.

Digital transformation plays a pivotal role in product compliance, as it's much easier to achieve lot traceability and automate quality control checks if end-to-end operations are managed through a single smart factory solution. There's no need to jump between systems or collate multiple data streams to ensure that product composition, packaging, labelling and distribution methods meet industry legislation.

Some organizations are also looking at how their production model can support better regulation – for example, moving from batch manufacturing to a continuous production model in order to fix issues quicker and reduce wastage as a result of non-compliant products.


One manufacturer that has already transitioned to this approach is AstraZeneca. Dafni Bika, AstraZeneca's Global Head of Pharmaceutical Technology and Development, told [Industry Week](#) that “with continuous manufacturing, we can use identical equipment for clinical and commercial production. This means we will see greater flexibility on batch size, enhanced control strategies and real-time release of products.”



Optimizing Your Process Manufacturing Business: Where To Start

As the research headlines we've shared demonstrate, 2022 is set to be a positive year for process manufacturing. Many organizations have a clear idea of the operational and business vulnerabilities they need to address to secure economic prosperity; the biggest challenge is deciding where to start.

For most process manufacturers, putting strategies in place to prioritize improvements and mitigate risk will form part of a wider digital transformation plan. One that uses smart manufacturing software to overcome core problems and enhance operational efficiency, output and innovation.



“Manufacturing production facilities of the future will **encourage a symbiotic relationship between human and machine**, with ICT-enabled tools and advanced wireless networks **enhancing production employees’ capabilities.**”

Ericsson

Investing in holistic solutions like process manufacturing ERP software will make these broad-ranging objectives easier to achieve, because process automation and data intelligence are integrated into a single technology platform. As [Manufacturing Global](#) notes, “manufacturers can look at every key business activity, ensuring that all stakeholders have access to a 360 degree of their customers and operations in order to make effective decisions fast.”

And fewer solutions reduce the training requirements placed on manufacturing employees, making cultural change easier to achieve. A streamlined approach to digital transformation will upskill the existing workforce and drive new, tech-savvy talent into the process manufacturing industry.



Aptean Process Manufacturing ERP: Driving Industry Innovation

To drive performance and meet changing industry expectations, Aptean has developed a specialist enterprise resource planning (ERP) solution for process manufacturers.

Aptean Process Manufacturing ERP software manages complex formulas and recipes with precision, using real-time data to:

- › Increase production accuracy
- › Ensure compliance with regulatory reporting
- › Improve quality control with integrated testing processes
- › Enable complete forward and backward lot traceability (including recall management)
- › Streamline processes, reduce costs and make more informed decisions

About our research study

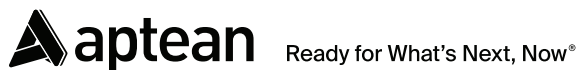
Aptean and B2B International surveyed 275 North American discrete and process manufacturers in October 2021.

B2B International is a global, full-service market research firm, specializing in researching B2B markets. Helping clients achieve their business goals by making smarter decisions driven by insights.



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Contact us at info@aptean.com or visit www.aptean.com for a free product demo.



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To learn more about Aptean and the markets we serve, visit www.aptean.com.