

FORRESTER®



Communication, Collaboration, And Transformation: How Industrial Equipment Manufacturers Deliver Better Custom Solutions

Table of Contents

- 3 [Executive Summary](#)
- 4 [Key Findings](#)
- 5 [Improving Custom Project Execution Leads To Significant Benefits For Equipment Suppliers](#)
- 8 [Effective Communication Between Suppliers And Customers Is Fundamental To Project Success](#)
- 15 [Collaboration With Third Parties Requires Alignment Of Goals And Systems](#)
- 21 [Digital Transformation Enables Change](#)
- 24 [Key Recommendations](#)
- 26 [Appendix](#)

Project Director:

Josh Blackborow,
Market Impact Consultant

Contributing Research:

Forrester's Infrastructure & Operations
research group

ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit forrester.com/consulting.

© Forrester Research, Inc. All rights reserved. Unauthorized reproduction is strictly prohibited. Information is based on the best available resources. Opinions reflect judgment at the time and are subject to change. Forrester®, Technographics®, Forrester Wave, RoleView, TechRadar, and Total Economic Impact are trademarks of Forrester Research, Inc. All other trademarks are the property of their respective companies. [E-51491]



Executive Summary

As the manufacturing world becomes more digital, more connected, and more complicated, complex custom manufacturing projects increasingly require tight working relationships between equipment suppliers, their customers, and third-party contractors. Without effective communication and collaboration, custom projects are doomed to face overlong timelines, bloated budgets, and solutions that don't meet clients' unique needs, ultimately leading to suppliers failing to meet customer expectations.

In July 2021, Autodesk commissioned Forrester Consulting to evaluate the expectations of industrial equipment suppliers and customers regarding custom-engineered products and solutions for their clients. Forrester conducted two online surveys to explore this topic: one with 211 global industry equipment suppliers and the other with 205 global users of industrial equipment. We found that industrial equipment suppliers have many opportunities to improve how they meet clients' complex needs. This report examines the challenges and potential solutions for suppliers in three key areas: 1) client experience, expectations, and communication; 2) collaboration with third parties; and 3) digital services.

Key Findings

Improving custom project execution leads to significant benefits for equipment suppliers. Custom projects are now more important for clients, so the opportunity for custom equipment suppliers to meet clients' needs has grown. Our study found that suppliers that have invested in making improvements to their custom manufacturing project execution and offerings see benefits, including customer retention, new business wins, and internal efficiency.

Effective communication between suppliers and customers is fundamental to project success. Without strong lines of communication between equipment suppliers and clients, custom projects can derail. Our study found that suppliers struggle to manage client expectations around project timelines, budgets, and requirement conveying, which leads to increased costs, lost business, and damage to the brand.

Collaboration with third parties requires alignment of goals and systems. Many projects require external third parties for systems integration or construction. For suppliers, managing these relationships with third parties is crucial for a consistent customer experience. Our study found that integrating data and digital processes between all parties involved in the custom engagement is key.

Manufacturing is undergoing a digital transformation. Investment in digital technologies and services in manufacturing is booming. Suppliers ranked investment in digital technologies as the most common step their firms have taken in the past three years to meet clients' needs and where they will invest most over the next three years. Digital twins play a large role and are table stakes for custom manufacturing projects. However, clients aren't maximizing the value of this technology.

Improving Custom Project Execution Leads To Significant Benefits For Equipment Suppliers

For equipment suppliers, delivering fully customized equipment is more important than ever before. Eighty-one percent of surveyed clients cited the ability to develop fully bespoke equipment based on their unique needs as “Important” or “Critical.” And it’s only growing in importance, with 60% of buyers stating that a supplier’s ability to develop truly custom products is even more important today than it was three years ago. So it’s critical for equipment suppliers to effectively navigate the murky waters of custom equipment production.

In this study we will be examining the process of custom manufacturing projects, where suppliers need to improve, and where they can differentiate themselves from their competitors. However, to start off, it’s important to understand what suppliers have to gain. We found that:

- **Investment pays off.** Suppliers that have invested in making improvements to their custom manufacturing project execution and offerings see substantial benefits to the business. Suppliers reported their top areas of improvement over the past three years included delivering projects on time, delivering equipment that meets their clients’ technical specifications, improving customer service, and improving their ability to customize equipment to meet their clients’ unique needs (see Figure 1). These changes have directly led to improvements in manufacturing speed, customer retention, worker productivity, quality, and new business wins. Eighty-four percent of clients reported that they tend to work with the same group of suppliers with whom they’ve completed successful projects, so when suppliers gain client trust, they’re set up to create a continuous revenue stream.

81%

of clients cited the ability to develop fully bespoke equipment based on their unique needs as “Important” or “Critical.”



84% of clients said they tend to work with the same group of suppliers with whom they have completed successful projects.

Figure 1

**Areas Of Significant Improvement
In The Past Three Years**

○ Ranked top 6

Delivering projects on time	32%
Delivering equipment that meets our clients' technical specifications	27%
Improving our customer service	27%
Having ability to customize equipment/system to meet our clients' unique needs	26%

**Benefits From Making
Improvements**

○ Transformational/Significant benefit

Improved manufacturing speed	75%
Improved customer retention	74%
Improved labor/workforce productivity and quality	73%
Improved quality throughput and availability overall (OEE)	73%
Won new customers	72%

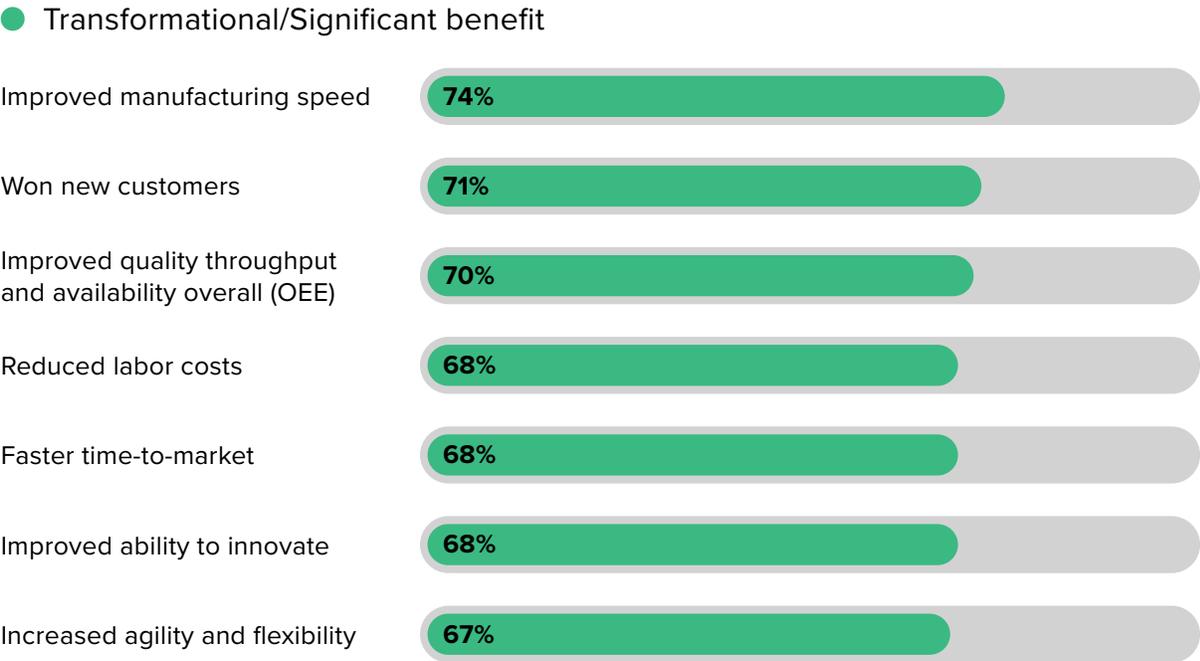
Base: 211 global industrial machinery suppliers (includes OEMs and systems integrators/engineering service providers)
Note: Showing top response options
Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

- **Improving collaboration with clients is a win-win proposition.** Improvements in the working relationship between clients and suppliers do not only benefit the suppliers. Clients cited that working with suppliers that met or exceeded their expectations resulted in significant improvements to the client's manufacturing speed, their ability to win new customers of their own, quality throughput, labor costs, and more (see Figure 2).

With these benefits in mind, this study examines how custom manufacturing suppliers can make improvements in three key areas:

- 1. **Client experience, expectations, and communication.**
- 2. **Collaboration with third parties.**
- 3. **Digital services.**

Figure 2
Benefits From Working With Suppliers That Exceed Custom Equipment/System Project Expectations



Base: 205 global users of industrial machinery that work with OEMs and systems integrators/engineering service providers
Note: Showing top response options
Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

Effective Communication Between Suppliers And Customers Is Fundamental To Project Success

Key Topic: Client experience, expectations, and communication

For custom manufacturing projects to succeed, they require an airtight working relationship between the clients, their equipment suppliers, and any other third-party contractors involved. However, our study found substantial gaps in the perceptions and expectations of suppliers compared to the clients they serve, and real flaws in the way suppliers and clients collaborate today. In surveying 211 suppliers and 205 customers of custom manufacturing equipment, we found that:

- **Suppliers and customers diverge in their expectations on project timelines.** Delivering a project in a timely manner is obviously a core component to creating strong customer experiences. Eighty percent of clients rated delivering projects on time as “Very important” or “Critical.” However, our study found that this is an area of fundamental mismatch in expectations between clients and suppliers. Despite suppliers rating their ability to deliver projects on time as the area they have made the most improvement in the past three years, it is still third in clients’ list of areas where suppliers need to improve most (see Figure 3). And only 21% of clients actually believe their suppliers will improve significantly on their delivery timelines in the next three years.

It seems that no matter how much suppliers feel like they improve in their delivery timelines, customers still don’t feel like their expectations are being met. This points less to an inability for suppliers to deliver projects in a timely way and more to the difficulty in setting realistic client expectations around timelines. In fact, suppliers rated clients having unrealistic time expectations as the most common and challenging issue in working with clients (see Figure 4). Suppliers are likely not conveying the potential for unforeseen challenges and delays to occur and are therefore not properly setting client expectations and setting themselves up for failure.

Only **21%** of clients actually believed their suppliers will improve significantly on their delivery timelines in the next three years.

Figure 3

Top-Ranked Areas Needing Improvement

TOP 5 AREAS OF SUPPLIER IMPROVEMENT IN THE PAST THREE YEARS*		TOP 5 AREAS OF NEEDED IMPROVEMENT TO MEET CLIENT NEEDS**	
1	Delivering projects on time	1	Ability to customize equipment/system to meet our unique needs
2	Delivering equipment that meets our clients' technical specifications	2	Energy efficiency
3	Improving our customer service	3	Delivering projects on time
4	Ability to customize equipment/system to meet our clients' unique needs	4	Meeting our expectations in terms of sustainability
5	Delivering equipment that interoperates well with equipment from other vendors	5	Digital services — real-time digital equipment modeling, services offered to help optimize performance

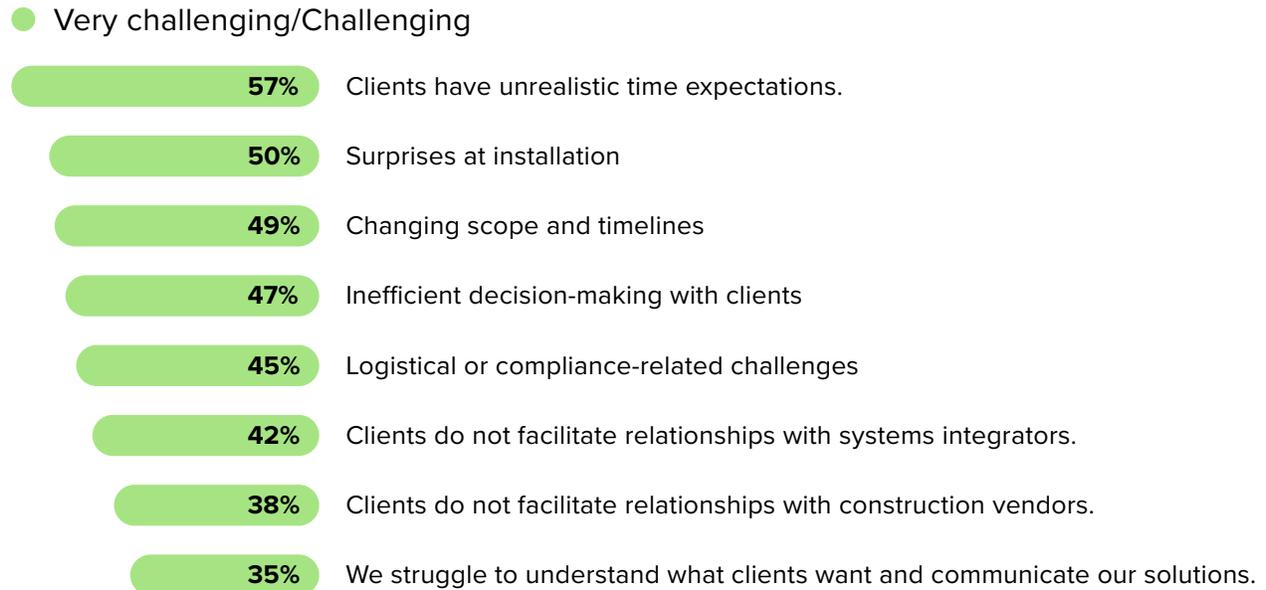
*Base: 211 global industrial machinery suppliers (includes OEMs and systems integrators/engineering service providers)

**Base: 205 global users of industrial machinery who work with OEMs and systems integrators/engineering service providers

Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

Figure 4

“In general, how challenging are each of the following potential issues to deal with when working with clients on custom projects?”



Base: 211 global industrial machinery suppliers (includes OEMs and systems integrators/engineering service providers)

Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

- Suppliers often complete projects outside of the stated budget, leading to customer frustrations. Like timely delivery, completing projects on budget is also fundamental to customer experience. However, while suppliers are confident in their ability to deliver projects on time, they are less confident in their ability to deliver on budget. Budgets expand as suppliers face execution errors (either their own or from third-parties) and as clients change project scope. Keeping projects within budget is the area where suppliers said they most often fall short of customer expectations today, and it's also the area in which they've made the least progress in the last three years (see Figure 5). And clients are acutely aware of this fact. In fact, clients rated projects going over budget as the most common challenge in their working relationship with equipment suppliers. So while this is partially a delivery problem on the part of suppliers, it also points, in part, to a lack of ability for suppliers to manage client expectations. If projects are going over budget so consistently, it's fair to say that suppliers aren't accurately estimating and communicating budget expectations to clients, including accounting for potential risk. Clients may also often not be accurately articulating their needs, but the bottom line for suppliers is they need to adapt midproject and continually manage expectations.

Figure 5

Lowest Areas Of Improvement Vs. Top Perceived Areas Of Client Expectation Shortfall

LOWEST 5 AREAS OF IMPROVEMENT IN THE PAST THREE YEARS		TOP 5 AREAS OF CLIENT EXPECTATION SHORTFALL	
21	Selling equipment that's highly recyclable	1	Keeping projects within budget
22	Providing digital twins more consistently	2	Lifecycle management offerings, such as predictive, preventative, or prescriptive maintenance
23	Lowering lifetime cost of equipment utilization	3	Meeting our clients' expectations in terms of sustainability
24	Lowering cost of equipment acquisition	4	Ability to customize equipment/system to meet our clients' unique needs
25	Keeping projects within budget	5	Low cost of equipment acquisition

*Base: 211 global industrial machinery suppliers (includes OEMs and systems integrators/engineering service providers)

**Base: 205 global users of industrial machinery that work with OEMs and systems integrators/engineering service providers

Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

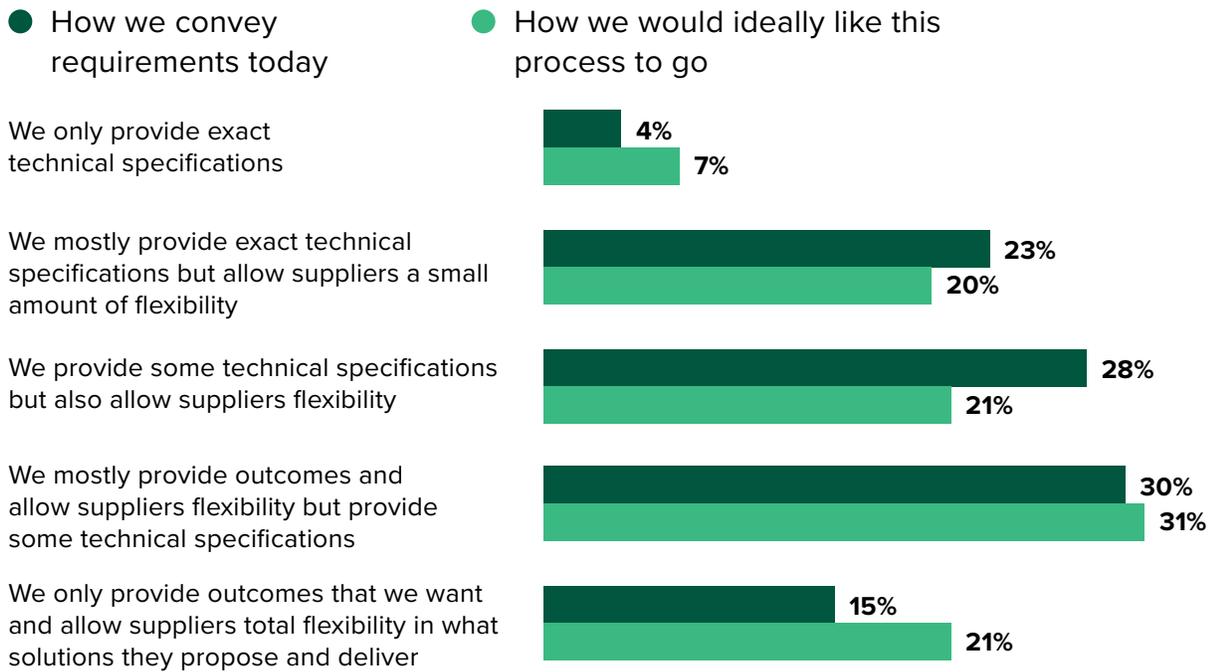
- **Strong communication begins in the requirement-setting process.** Communication between clients and suppliers can often break down at the earliest touchpoints in the relationship. Our study found that the process of conveying project requirements can be a particular point of contention. Clients displayed a real variety in the ways they prefer to convey requirements, spanning from providing exact technical specifications to only providing outcomes and allowing suppliers flexibility in the solutions they propose and deliver (see Figure 6). However, there is a clear preference from clients toward suppliers that can play a consultative role in the procurement process. Seventy-three percent said that they'd ideally give suppliers a say in the solutions they propose, and 74% said they select vendors that can offer project alternatives and innovative suggestions. Suppliers agreed: 75% said they prefer when clients allow them flexibility in the solutions they propose, and 81% said it's easier to deliver on client expectations when they do.

73% of clients said that they'd ideally give suppliers a say in the solutions they propose, and **74%** said they select vendors that can offer project alternatives and innovative suggestions.

But it's important to keep in mind that, while many clients do seek suppliers that can play a consultative role in the procurement process, this is not the case for every client or every situation, and most do not want to give suppliers carte blanche in what they propose. Based on our data, it does not appear as though suppliers are effectively catering to clients' needs in the procurement process. In fact, only 21% of clients said they usually use their ideal procurement arrangement today. Those who don't get to use their ideal arrangement are 75% more likely to say they find collaboration with equipment suppliers challenging and 63% more likely to have had delayed product releases due to suppliers being unable to meet their needs. To better meet their needs, suppliers need to communicate proactively and transparently with their clients to understand how clients prefer to engage with them, whether they're expecting a consultative voice from the supplier or someone who is just going to accurately meet technical specifications.

Figure 6

How Organizations Convey Requirements To Suppliers



Base: 205 global users of industrial machinery that work with OEMs and systems integrators/engineering service providers
Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

- Failure to communicate effectively and meet client expectations results in increased cost and loss of business for suppliers. Overall, suppliers are fundamentally struggling to effectively communicate with clients and manage expectations. Only 20% of suppliers said they consistently exceed customer expectations, and only 35% do so even occasionally. This has serious consequences. Poor customer experience is driven by a failure to communicate. We asked clients what they would do if their suppliers didn't improve significantly over the next three years in various capabilities, and for 64% of clients, there was at least one capability that if suppliers didn't improve, they would just abandon their supplier and look for a new one. The two areas that clients rated as the most likely reasons for them to leave their suppliers were communication and on-time delivery, while keeping projects within budget came in sixth (see Figure 7). Suppliers reported that their inability to meet client expectations has resulted in increased costs, erosion of profits, damage to the brand, loss of repeat business, and more.

Figure 7

How Organizations Will Respond If Suppliers Don't Improve



Base: 205 global users of industrial machinery that work with OEMs and systems integrators/engineering service providers
Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

Key Recommendation: Prepare for continuous change by emphasizing adaptability. Forrester describes a future fit organization as one that is adaptive, creative, and resilient. Geopolitical uncertainty, supply chain risk, and evolving customer expectations combine to create significant risk.¹ The organizations best placed to navigate this complexity are those that are not afraid to flex and adapt. Tightly defined and heavily optimized processes may be the first to crumble when assumptions change.

Key Recommendation: Prioritize communication from start to finish. The importance of effective communication is (unsurprisingly) understood by both suppliers of manufacturing systems and their clients, but it's also clear that neither group consistently gets it right. Roles and responsibilities need to be clear — and explicitly agreed-on — and all parties need to proactively communicate the right information at the right time. Like any other relationship, take the time to reach a shared understanding of how best you can communicate, and work hard to keep those channels open to address misunderstandings or disagreements before they have a chance to fester and derail the project. Poor communication between suppliers and clients, especially during the procurement process, engenders unpredictability during the project. Effective communication mitigates risk. Suppliers should focus on balancing adding value by providing a consultative view to their clients while also making sure to listen to their clients' unique needs. This kind of effective communication is significantly aided by shared digital ecosystems, which we'll elaborate on in the next section.

Collaboration With Third Parties Requires Alignment Of Goals And Systems

Key Topic: Collaboration With Third Parties

The relationship between clients and suppliers does not just come down to communication between them; the way both sides work with external partners, such as systems integrators, construction firms, and other third-party service providers, is also key. Clients know that improvements in these working relationships could be incredibly impactful to their business. Seventy-five percent said they would expect to experience significant or transformational benefits if they had better working relationships with equipment suppliers, while 73% would expect these benefits from better relationships with systems integrators and 68% from construction firms or general contractors. We found that these relationships need work, and they could be significantly improved with better digital collaboration processes.

SUPPLIERS AND CLIENTS HAVE DIFFERENT PRIORITIES WHEN IT COMES TO SYSTEM INTEGRATORS

There is a clear disconnect between suppliers and clients when it comes to the systems integration process. When suppliers were asked what they thought *clients* believed were the most important aspects to success during custom equipment purchases, they rated the systems integration process dead last. Clients, however, actually rated strong systems integration as the most important aspect to success in a custom purchase.

Clients want their problems solved as a complete package, which means they expect suppliers to deliver as seamless a systems integration process as possible. This is obviously a simpler proposition for suppliers when systems integration is handled in-house by either the suppliers or the clients. However, this process is not always handled in-house. There is often the need to work with a third-party integrator and, for suppliers, to effectively manage these processes when third parties are involved is crucial. Clients rated working well with systems integrators as the most important capability of equipment suppliers, further noting that it has grown in importance more than any other capability over the past three years. Those suppliers that have made improvements in their working relationship with systems integrators have seen reduction in operational costs, increased revenue, and greater customer acquisition (see Figure 8).

Figure 8

Top Supplier Benefits Of Improved Ability To Work With Systems Integrators

Base: 211 global industrial machinery suppliers (includes OEMs and systems integrators/engineering service providers)
Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

CAPABILITIES	
	1. Reduced operational costs
	2. Increased revenue
	3. Won new customers
	4. Increased capacity
	5. Improved asset performance

This improvement starts with a level of trust around the choosing of the third-party integrator. Sixty-nine percent of clients who prefer working with a third-party integrator said they prefer to choose that integrator themselves. However, the majority of suppliers reported that when working with a third-party integrator, it is more common for the *supplier* to choose it. This, once again, shows a lack of trust and communication on the suppliers' part that results in the process not going the way that clients prefer. And ironically, when suppliers allow clients to choose the third-party systems integrator, they are actually far less likely to have to deal with logistical challenges, experience surprises at installation, or feel like clients are inefficient with decision-making or have unrealistic time expectations (see Figure 9). And only 22% of suppliers said they significantly struggle to collaborate with third-party systems integrators their clients chose. When suppliers aren't doing systems integration themselves, communicating with clients around their preferences and collaborating effectively with third parties is crucial.

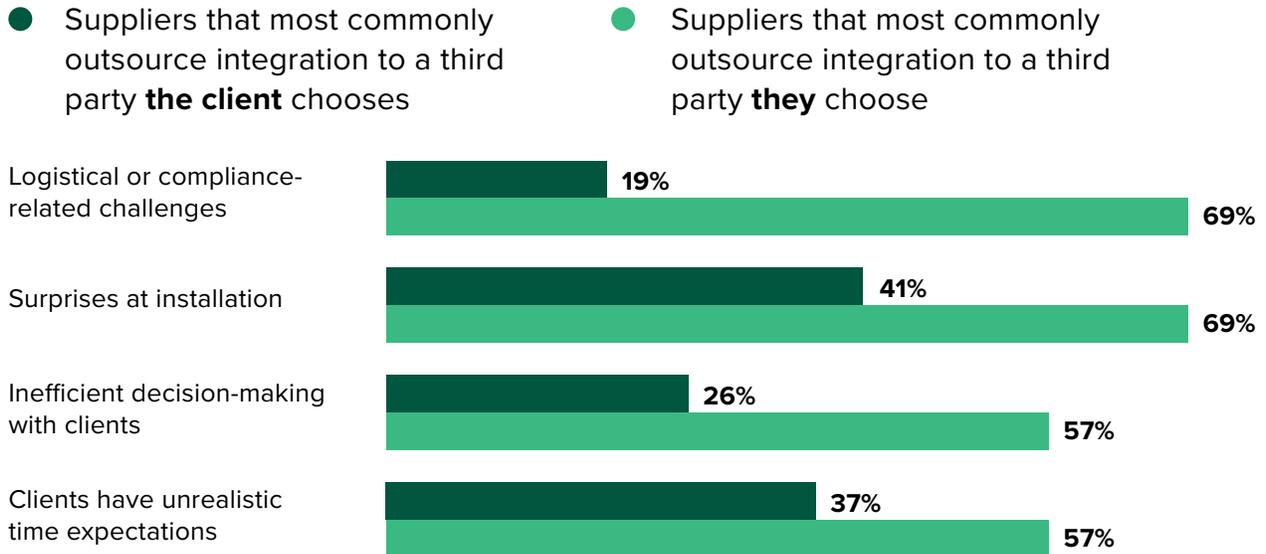
WORKING WITH CONSTRUCTION FIRMS IS CRITICAL TO PROJECT SUCCESS

Just like with systems integration, the process of collaborating with construction firms as part of custom projects is fraught with mistrust and miscommunication between the clients and suppliers. Eighty-six percent of suppliers said they prefer to manage the collaboration between themselves and construction firms, and 82% believed they are effective at doing so. However, clients aren't as sure — they ranked suppliers'

Figure 9

Top Issues When Working With Clients On Custom Projects

(Showing sum of “Common” and “Very common”)



Base: 211 global industrial machinery suppliers (includes OEMs and systems integrators/engineering service providers)
Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

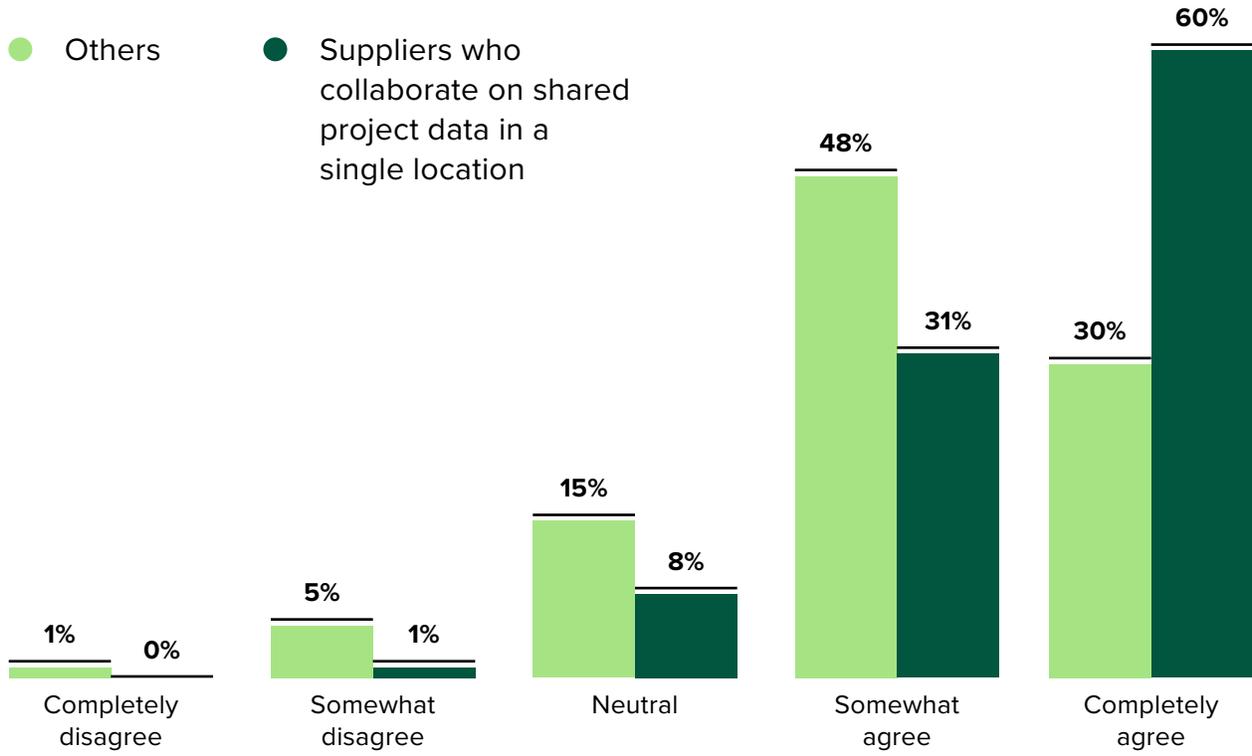
inefficient working relationship with construction firms third in terms of their biggest challenges in their working relationship with equipment suppliers. The relationship between clients and suppliers needs to improve so when clients prefer to manage relationships with construction firms, suppliers can still be an effective partner by collaborating and proactively sharing project information without feeling the need to fully manage the process.

EFFECTIVE WORKING RELATIONSHIPS BEGIN WITH A STRONG DIGITAL ENVIRONMENT

Our study found that a core issue plaguing the relationships between clients, their suppliers, and third parties was their digital collaboration ecosystem. More than three-quarters of suppliers said it is easier for them to manage change with clients that collaborate in the same digital environment, yet only 34% said that all types of project data are fully integrated into a single location for all to access. Those who have the data in a single location improve their collaboration not only with clients, but also with third-party contributors like construction firms (see Figure 10).

Figure 10

Are Organizations Effective At Collaborating With Construction Firms?



Base: 211 global industrial machinery suppliers (includes OEMs and systems integrators/engineering service providers)
Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

Use cases extend beyond the simple provisioning of a single source of truth to begin driving key project management processes, such as commissioning, inspection, and sign-off. Clients understand the importance of this as well. Seventy-nine percent said they care about their suppliers' ability to integrate into their digital processes and workflows, while 78% said they require a shared collaboration platform between their suppliers and their subcontractors. When it comes to collaboration with contractors, 58% would ideally like to collaborate in a way where data is integrated into a single model on a shared collaboration platform and construction is coordinated. However, while there has been movement toward this type of collaboration model in the past three years, only 14% do this today (see Figure 11). For those who have this type of model in place, it is a significant competitive differentiator, and for the rest of suppliers, it's time to get on board.

Key Recommendation: Spend time getting the digital foundations right.

While they rarely manage it today, both suppliers and their clients recognize the benefits of working in a shared digital infrastructure. There’s a single place to look for plans, contracts, and progress to date. Contractors, subcontractors, and the client all work off the same information; if plans change, everyone knows about it. Do the preparatory work to align data models and formats so that data doesn’t just sit in one place but is actually interoperable. That will pay off, reducing scope for misunderstanding and opening up opportunities to automate shared processes throughout the project.

Figure 11
How Firms Coordinate With Construction Firms

● Three years ago ● Today ● In an ideal world

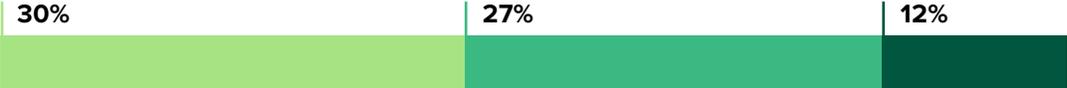
Data is integrated into a single model on a shared collaboration platform, and construction/installation is coordinated.



Data is integrated into a single model, and construction/installation is coordinated.



Data is integrated into a single model.



Data is exchanged but not integrated



No coordination



Base: 211 global industrial machinery suppliers (includes OEMs and systems integrators/engineering service providers)
 Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

Key Recommendation: Build relationships with third parties. Third-party contractors play an important role in holding together these complex projects, and clients are clear that they expect their suppliers to get better at working with these firms. Suppliers have a lot to gain from nurturing relationships with systems integrators and construction firms, as well as building trust in their ability to see projects through to a successful conclusion. In situations where the client wishes to use their preferred third-party vendor, suppliers should have the flexibility and confidence to meet their clients' needs by working closely with the third party and adding value to the process.

Digital Transformation Enables Change

Key Topic: Digital Services

Just like many other sectors, manufacturing is grappling with the potential to bake digital tools and services into everything they do. Forrester's research explores a challenge as manufacturers make the shift from physical to digital solutions, the physical items they've always made don't go away, but instead increasingly become augmented and extended by digital capabilities that do everything from monitor the performance of individual machines to drive entirely new service-based business models. In this study, we found:

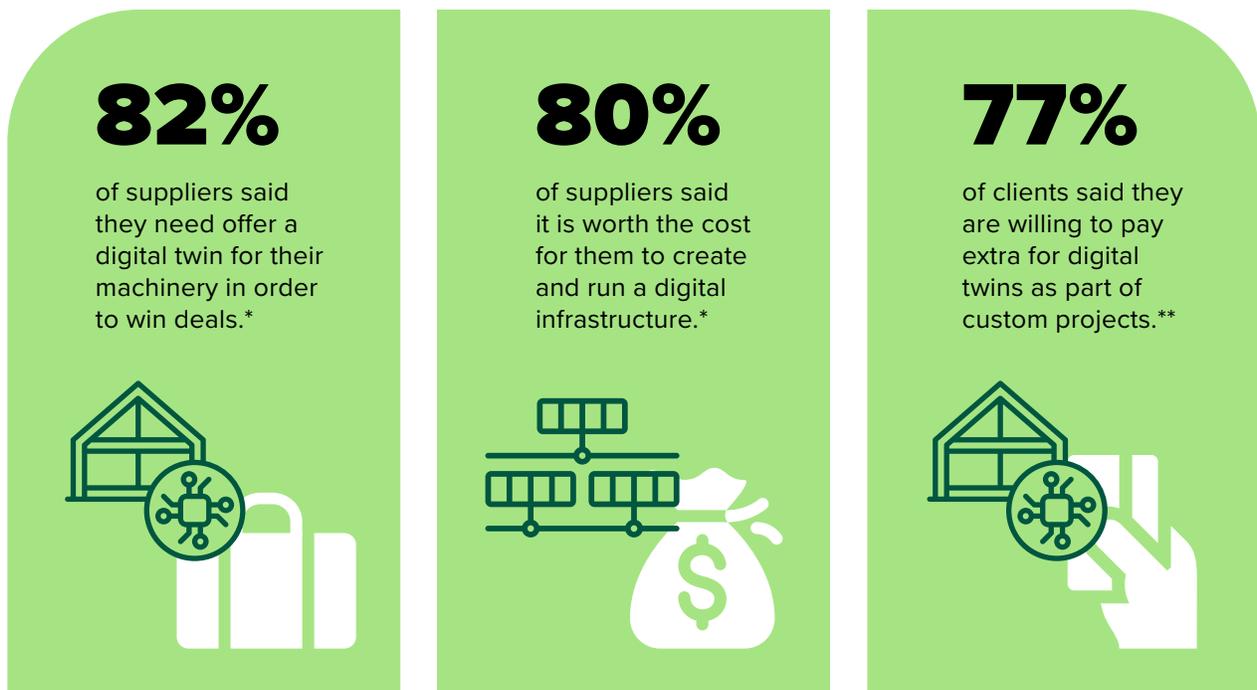
- **Investment in digital services is booming.** Manufacturing suppliers are investing heavily in modernizing their offerings and becoming more digital. Suppliers ranked investment in digital technologies as the most common step they've taken in the past three years to better meet clients' needs and the area they plan to invest in most heavily over the next three years. Digital technology investments include both the development of new digitally enabled equipment offerings as well as embedding digital processes into internal systems. Those suppliers that have improved their ability to deliver digital services over the past three years reported increased revenue, increased agility and flexibility, reduced operational costs, improved customer retention, and more. By deeply baking digital thinking and digital processes into the way that a company approaches its business, it becomes possible to transform that business with digital services — augmenting the physical products on which its reputation is based.²



A digital twin stores information about a physical thing's state and behavior, offering a model of what the physical thing is doing in the present, and predicting how it might change in the future.

- **Digital twins have become table stakes for custom manufacturing projects.** For manufacturing, an increasingly important component of digital services is digital twins. Digital twin delivery has become ubiquitous, with 82% of suppliers saying they usually offer digital twins as part of custom delivery projects. In fact, providing digital twins has become a crucial part of the ability to sell custom projects. Eighty-two percent of suppliers said they need to offer a digital twin for their machinery to win deals; 80% said it's worth the cost for them to create and run a digital infrastructure; and 77% of clients said they are willing to pay extra for digital twins as part of custom projects (see Figure 12). Providing digital twins also ranked fourth on the list of capabilities clients want to see their current supplier improve.

Figure 12



*Base: 211 global industrial machinery suppliers (includes OEMs and systems integrators/engineering service providers)

** Base: 205 global users of industrial machinery that work with OEMs and systems integrators/engineering service providers

Source: A commissioned study conducted by Forrester Consulting on behalf of Autodesk, July 2021

- **Suppliers have a role to play in helping clients maximize value from digital twins.** While digital twins are a standard delivery component of custom manufacturing projects, clients struggle to actually utilize digital twins to their fullest potential and maximize their value. Seventy-five percent of clients agreed that it is challenging to integrate multiple digital twins, while 59% said they find it challenging to build a holistic digital twin strategy. This is likely due in no small part to the challenges suppliers and clients face in the systems integration process. By combining multiple assets, stakeholders, or processes, the potential value of digital twins increases, but so does the complexity of implementation.³

Key Recommendation: Invest in digital twin competencies and services and ensure your clients get the most out of them. There's room to establish a digital handover process. Suppliers have a critical role to play in these industrial projects, and they need to take as much care packaging and delivering the digital outputs of a project as they already do in delivering the physical buildings, machines, and other assets. Document data dictionaries and process workflows clearly and transparently. Show your client how to use the data generated during construction and configuration. Show your client how to ask the right questions, begin exploring digitally enabled predictive maintenance, optimize asset utilization, and more. Done well, this approach will likely generate additional services sales for suppliers.

Key Recommendations

Complex manufacturing projects require a close — and trusting — relationship between clients, equipment suppliers, and other third-party contractors. However, our study found a consistent set of issues with the current relationships between suppliers and their clients. Often, both parties recognize that these issues exist, but they're not coming together to do what needs to be done to consistently put future projects on more-solid footing.

Forrester's in-depth surveys of suppliers of custom industrial equipment and their clients about the state of custom manufacturing yielded several important recommendations:

Prepare for continuous change by emphasizing adaptability.

Forrester describes a future fit organization as one that is adaptive, creative, and resilient. Geopolitical uncertainty, supply chain risk, and evolving customer expectations combine to create significant risk.⁴ The organizations best placed to navigate this complexity are those that are not afraid to flex and adapt. Tightly defined and heavily optimized processes may be the first to crumble when assumptions change.

Prioritize communication from start to finish.

The importance of effective communication is (unsurprisingly) understood by both suppliers of manufacturing systems and their clients, but it's also clear that neither group consistently gets it right. Roles and responsibilities need to be clear — and explicitly agreed on — and all parties need to proactively communicate the right information at the right time. Like any other relationship, take the time to reach a shared understanding of how you can best communicate, and work hard to keep those channels open to address misunderstandings or disagreements before they have a chance to fester and derail the project. Poor communication between suppliers and clients, especially during the procurement process, engenders unpredictability during the project. Effective communication mitigates risk. Suppliers should focus on balancing adding value by providing a consultative view to their clients while also making sure to listen to their clients' unique needs.

Spend time getting the digital foundations right.

While they rarely manage it today, both suppliers and their clients recognize the benefits of working in a shared digital infrastructure. There's a single place to look for plans, contracts, and progress to date. Contractors, subcontractors, and the client all work off the same information; if plans change, everyone knows about it. Do the preparatory work to align data models and formats so data doesn't just sit in one place but is actually interoperable. That will pay off, reducing scope for misunderstanding and opening up opportunities to automate shared processes throughout the project.

Build relationships with third parties.

Third-party contractors play an important role in holding these complex projects together, and clients are clear that they expect their suppliers to get better at working with these firms. Suppliers have a lot to gain from nurturing relationships with systems integrators and construction firms and building trust in their ability to see projects through to a successful conclusion. In situations where the client wishes to use their preferred third-party vendor, suppliers should have the flexibility and confidence to meet their clients' needs by working closely with the third party and adding value to the process.

Invest in digital twin competencies and services and ensure your clients get the most out of them.

There's room to establish a digital handover process. Suppliers have a critical role to play in these industrial projects, and they need to take as much care packaging and delivering the digital outputs of a project as they already do in delivering the physical buildings, machines, and other assets. Document data dictionaries and process workflows clearly and transparently. Show your client how to use the data generated during construction and configuration. Show your client how to ask the right questions, begin exploring digitally enabled predictive maintenance, optimize asset utilization, and more. Done well, this approach will likely generate additional services sales for suppliers.

Appendix A: Methodology

In this study, Forrester conducted two online surveys. The first consisted of 205 global users of industrial machinery, and the other consisted of 211 global suppliers of industrial machinery. These surveys were conducted to evaluate expectations for what is being delivered, how it is delivered, and changes both parties would like to see. Survey participants included decision-makers from suppliers who are responsible for insights into industrial machinery, and users involved with the purchase or implementation of the industrial machinery in use. Respondents were offered a small incentive as a thank-you for time spent on the surveys. The study began in June 2021 and was completed in July 2021.

Appendix B: Demographics/Data

Industrial machinery supplier demographics

TOP THREE REGIONS	
United States	27%
United Kingdom	19%
China	15%

SIZE	
Fewer than 500 employees	13%
500 to 999 employees	18%
1,000 to 4,999 employees	40%
5,000+ employees	28%

TITLE	
C-level	11%
Vice president	23%
Director	32%
Manager	34%

TOP FOUR INDUSTRIES	
Construction/building equipment	31%
Manufacturing/materials	25%
CPG	16%
Automotive/marine/rail	12%

Industrial machinery user demographics

TOP THREE REGIONS	
China	31%
United States	25%
United Kingdom	16%

SIZE	
Fewer than 500 employees	4%
500 to 999 employees	23%
1,000 to 4,999 employees	44%
5,000+ employees	28%

TITLE	
C-level	10%
Vice president	42%
Director	48%

TOP FOUR INDUSTRIES	
Manufacturing/materials	17%
CPG	15%
Electronics	14%
Automotive/marine/rail	13%

Note: Percentages may not total 100 because of rounding.

Appendix C: Endnotes

¹ Source: “Future Fit Firms Outpace The Competition,” Forrester Research, Inc., April 6, 2021.

² Source: “Use Data From The Industrial Internet Of Things To Deliver Customer-Centric Business Models,” Forrester Research, Inc., August 2, 2021.

³ Source: “Grasp The Challenge Of Implementing Digital Twins At Scale,” Forrester Research, Inc., May 18, 2020.

⁴ Source: “Future Fit Firms Outpace The Competition,” Forrester Research, Inc., April 6, 2021.

A photograph of a modern industrial factory floor. The scene is filled with complex machinery, including robotic arms and conveyor systems. The equipment is primarily yellow and grey, with some blue accents. The floor is light-colored, and the ceiling has exposed pipes and lighting fixtures. The overall atmosphere is one of a busy, high-tech manufacturing environment.

FORRESTER®