



DIGITAL TRANSFORMS PHYSICAL

Why Manufacturers Are Switching to SaaS

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WHITE PAPER





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Executive Summary

It used to be that organizations had to be in part of the tech space to hear the term "software as a service" (SaaS), but today it has become commonplace. It has infiltrated many aspects of business and powers the infrastructure behind popular platforms like Salesforce, Google Docs, Microsoft Office 365, Dropbox, and Slack.

SaaS is shifting from being an optional investment to an essential one. And there are a whole host of reasons why: flexibility, cost of ownership, security, scalability, and improved collaboration.

Where SaaS has not been prevalent, until recent years, is in manufacturing and industrial software. Programs like computer-aided design (CAD) and product lifecycle management (PLM), which are the backbone of product development, have been slow to make the transition to SaaS. This, however, is changing. We are seeing an inflection point in technology, attitudes, and availability toward manufacturing-focused SaaS solutions.

A prudent leader, however, might want to know more before committing resources toward this infrastructure shift. SaaS is not simply a change in IT thinking (software and hardware infrastructure) but increasingly reaches into areas of employee focus, satisfaction, workplace strategy, as well as core business goals.

Methodology

To support this white paper, PTC contacted 76 individuals and asked them a series of 28 questions on various topics surrounding the evolution of work, with a focus on software-as-a-service (SaaS) and cloud operations. All respondents were full-time decision makers (director level and above) working in a variety of industries throughout the US.

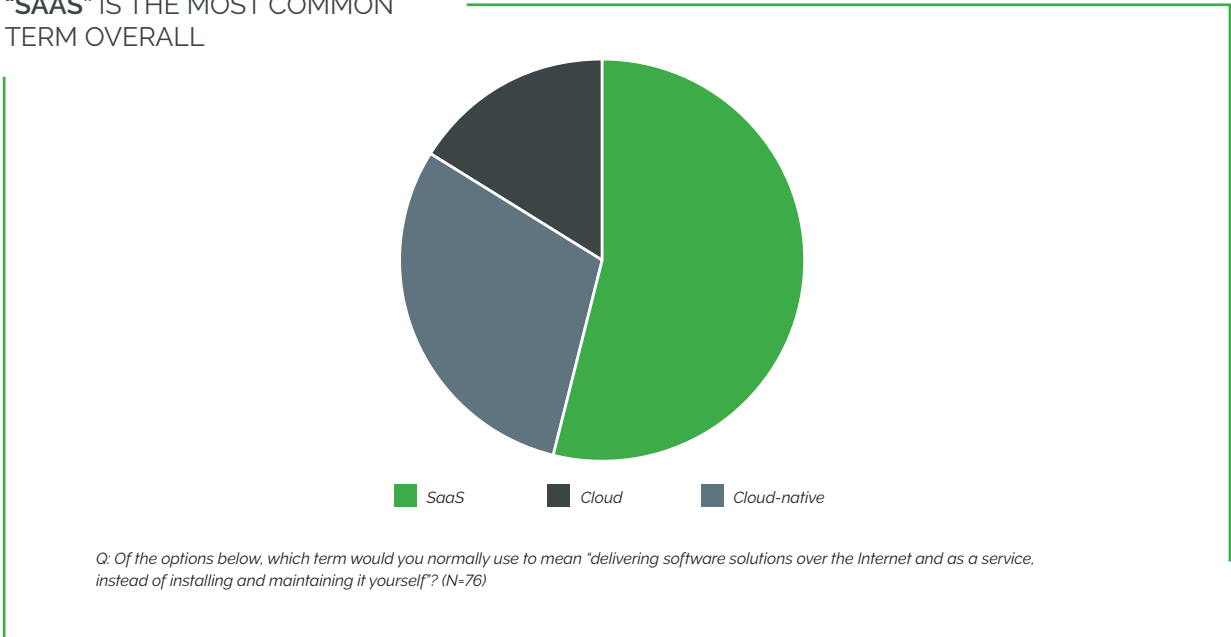
Survey data was gathered and compiled in March-April 2022 and reflects respondents' viewpoints and understanding of key issues at that time.

Terminology

As much of this survey centered around developing concepts concerning the cloud and SaaS, respondents were asked to choose a term to describe "delivering software solutions over the Internet and as a service, instead of installing and maintaining [them] yourself." Respondents had to choose SaaS, cloud, or cloud-native. Responses indicate that, across numerous industries, the term SaaS is most commonly used, with 54% stating it as the preferred choice.

Figure 1

"SAAS" IS THE MOST COMMON TERM OVERALL



That said, PTC acknowledges that these three terms are not interchangeable. To this end, we are providing the current working definitions:

- **Cloud:** Short for cloud computing, cloud refers to the online on-demand availability and delivery of various software services – notably computing power and storage options. These services can be accessed by any authorized user but are typically maintained and overseen by a third-party provider.
- **Cloud-native:** A cloud-native application is designed and developed with cloud computing functionality as the principal component. These software applications run on various types of cloud, including public, private, and hybrid models. Since they are developed exclusively for the cloud, there is rarely an on-premises equivalent capable of delivering a completely identical experience.
- **SaaS:** Software-as-a-service is a subscription purchase model wherein the user purchases and renews their purchase at various intervals (typically monthly or annually). In exchange, the user is supplied with a continuously updated and maintained software product, one that frequently and consistently improves itself to maintain various security and usability standards.
- **On-premises:** Typically refers to software applications that are installed, maintained, and updated at the same physical location where they are being used. With on-premises, the end user bears the majority of responsibility for the solution's upkeep and effectiveness.

The COVID-19 Acceleration Toward Decentralization

Workers have had the ability to be remote for decades but, despite advancements in internet speed and online infrastructure, organizations were slow to commit to hybrid or remote-based workflows. Gallup even found that certain companies – including [Federal Agencies](#) – were scaling back remote efforts as late as January 2020. Then the pandemic arrived in force and the discussion altered from “can remote work actually...work” to “I need remote work to work right now.” The data we gathered from respondents reflects this abrupt shift toward flexible work policy.

Before COVID-19, 70% of respondents reported requiring employees to report to work on-site with few exceptions. Unsurprisingly, this number plummeted and is currently 7%, with only 8% expecting a return to on-site “normalcy” once the pandemic challenges are fully overcome. Not only did Covid accelerate the movement out of the office for many workers, it has created a reality where the vast majority of knowledge-based and other, similar employees do not ever expect to return to the office full-time.

Figure 2

WORK IS LEAVING THE OFFICE

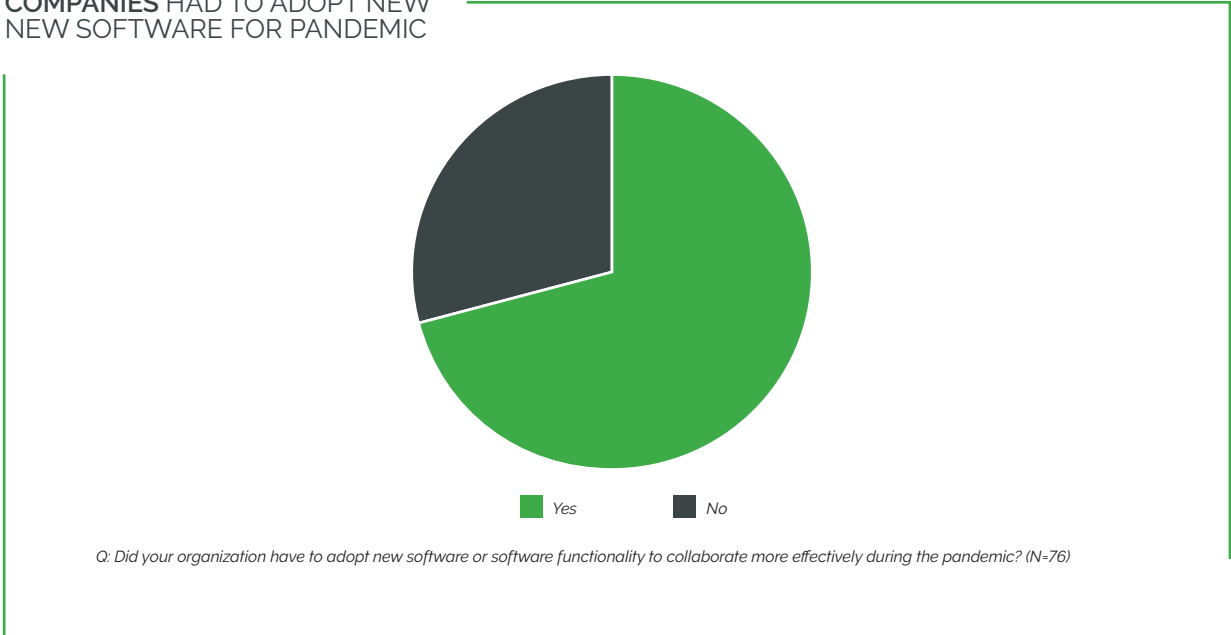


While the shift away from on-site work is perhaps, at first glance, purely cultural – the ramifications go far beyond social dynamics. Workplaces have long chosen software and hardware that's designed for operation in an office environment. The shared understanding was, regardless of specifics, people would generally be in one location: a centralized work environment. Every internal purchasing decision was made with the express goal of maximizing efficiency in this model. When the pandemic came, suddenly this seemingly reliable model no longer functioned.

As a result, not only were workers relocated, but many organizations had to re-invest (some very significantly) in new software and new software functionality. Almost three-quarters (71%) of respondents said they adopted new software solutions to better collaborate remotely. The pandemic prompted a massive recalibration of priorities for organizations and, as it became clear that it would not end within six weeks or even six months, [data from McKinsey](#) – along with numerous other research – proved this investment only deepened.

Figure 3

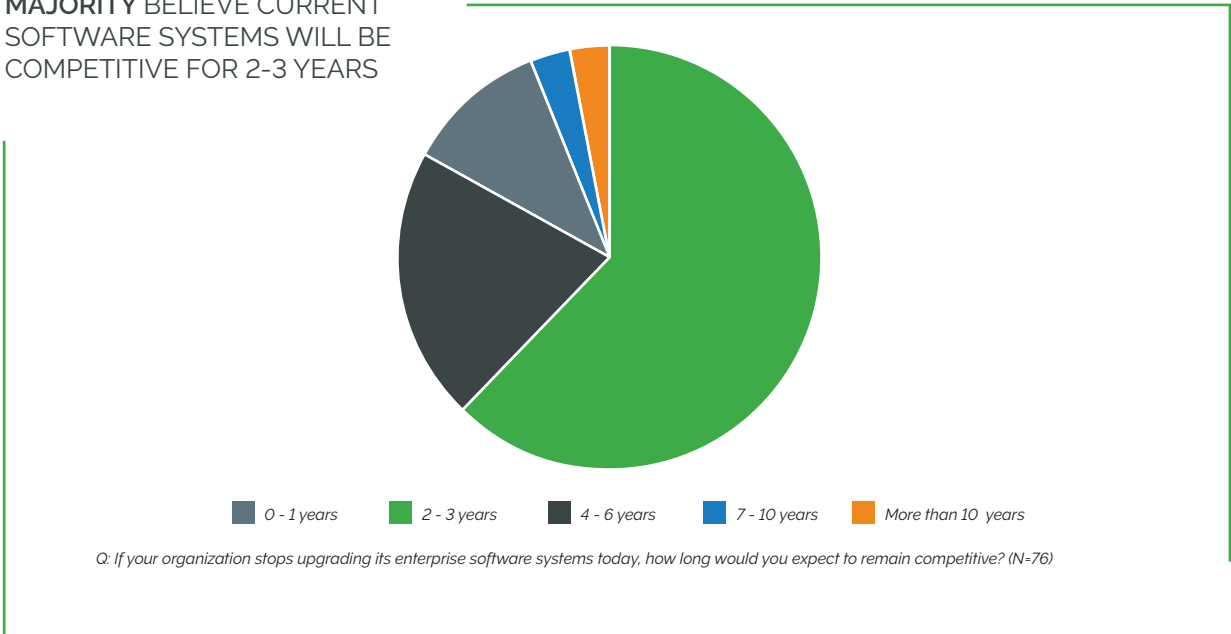
COMPANIES HAD TO ADOPT NEW SOFTWARE FOR PANDEMIC



The longevity of the pandemic is important, as software (like any purchase) comes in cycles. No system can be perfect forever, and 74% of respondents stated they would only be competitive for a maximum of three years if they stopped upgrading software systems. The pandemic has been part of daily operations for over two years, and other challenges – including rising property costs, extreme weather, and additional health concerns – remain to keep organizations from thinking about a full-scale return to on-site work.

Figure 4

MAJORITY BELIEVE CURRENT SOFTWARE SYSTEMS WILL BE COMPETITIVE FOR 2-3 YEARS



Decentralized work was a slow trickle before the flood of the pandemic forced a massive acceleration toward flexible operations. Businesses in basically every industry now have new priorities, both in terms of people and in terms of finance, that will keep up the evolution. The length and severity of the disruption seems to prove a lasting change rather than a blip, and this is incredibly important for SaaS adoption.

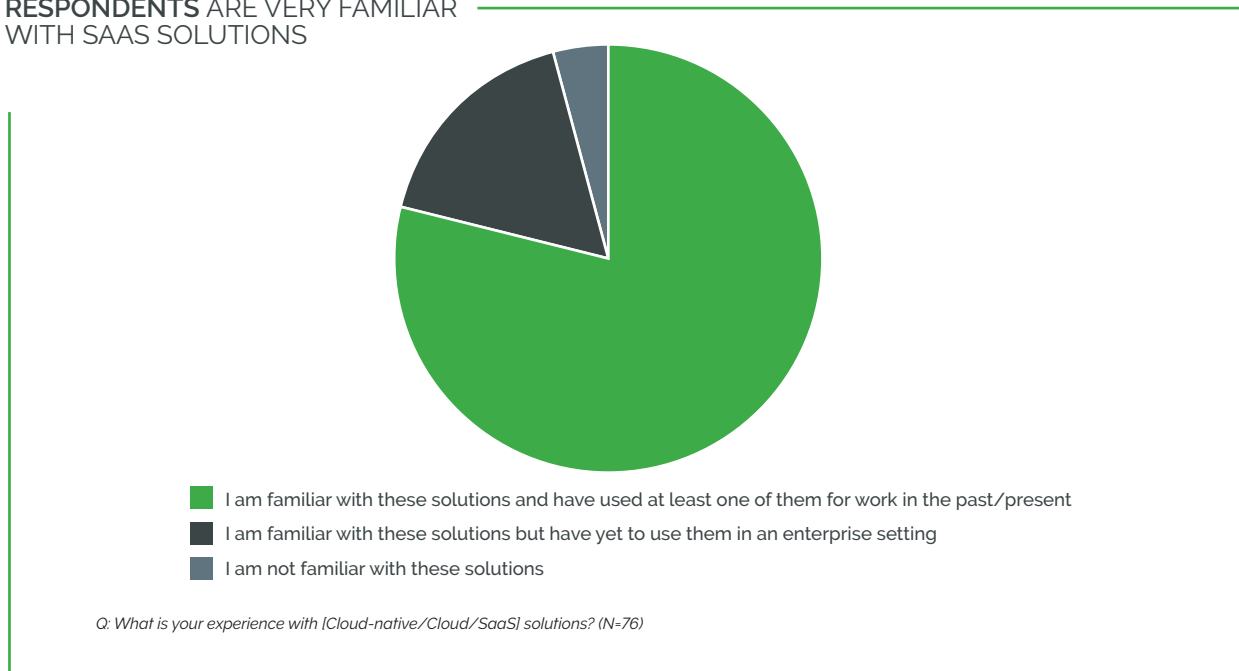
Why SaaS Matters to Digital Transformation

SaaS is and has been a part of our daily lives for awhile. Think of Gmail. Gmail is, essentially, simple SaaS. It is run on a server, through the cloud, controlled by a third party that provides services to the specific user or users with proper access authorization. Gmail can be accessed anywhere there is an internet connection and is updated regularly – whether these improvements are focused on features, user interface, or security. In short, almost everyone has already been using at least one SaaS solution for years, for exactly the reasons it is so beneficial in so many areas now.

Organizations recognize SaaS when they use it. About 80% of survey respondents said they were familiar with SaaS solutions and have used at least one of them in the past or in the present. Another 17% stated they felt familiar with SaaS but had yet to use it in an enterprise setting. Given the Gmail example, it is interesting to wonder how many of these have used a SaaS solution without realizing it.

Figure 5

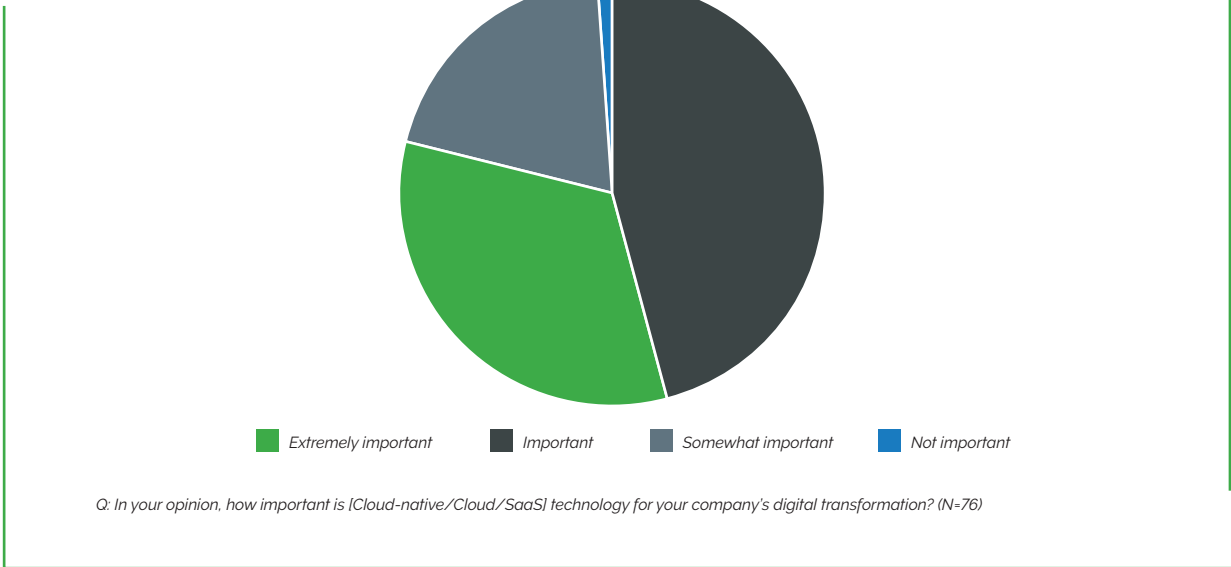
RESPONDENTS ARE VERY FAMILIAR WITH SAAS SOLUTIONS



The effectiveness of SaaS, especially in relation to larger digital transformation (DX) efforts, is evident in respondents' views, as well. When asked if they considered SaaS important to DX efforts and strategies, 79% listed it as important, with 33% saying it was extremely important.

Figure 6

SAAS IS SEEN AS AN IMPORTANT PART OF DX



All of this makes sense when considering what SaaS really represents, which is an effective way to decentralize work operations without sacrificing software performance. Authorized users are kept on one uniform, consistently updated solution, regardless of location. The conditions created by the pandemic have shaped an environment where this type of platform is not just preferred but, in many cases, essential to doing business without disruption.

The Human Side of Embracing SaaS

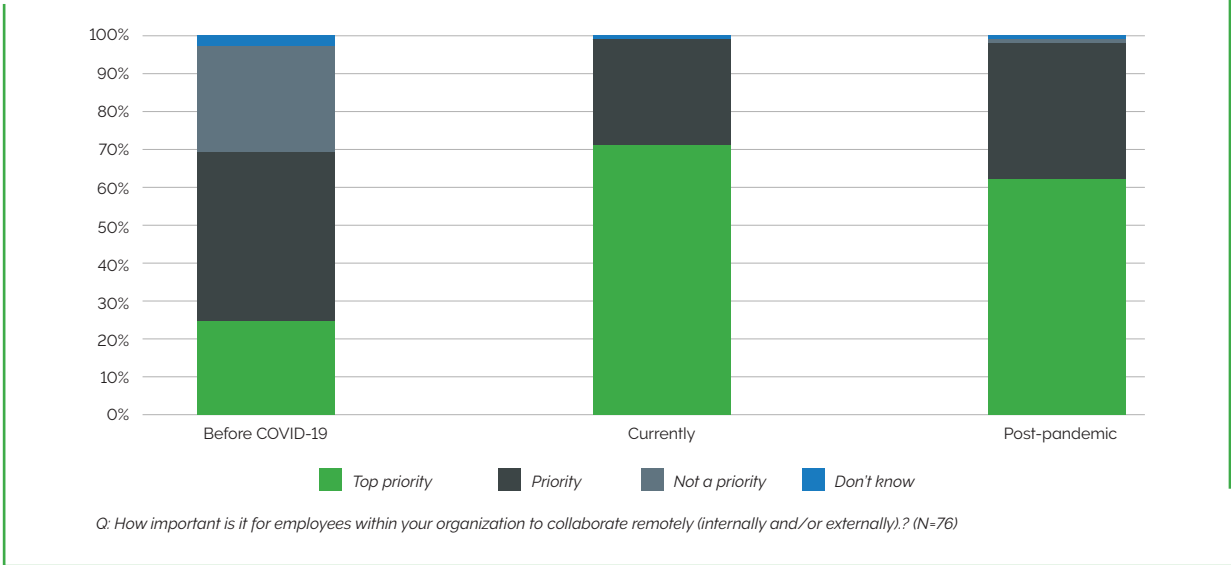
There are numerous positive benefits that come from embracing SaaS, especially where employees are concerned. While many used to balk at the idea of majority or full-time remote work, the new majority believe that, for knowledge workers, flexibility is an essential benefit going forward.

Gartner research showed 43% of employees (and 47% of knowledge workers in particular) stated **they would seek other jobs** if required to work fully on-site. This is not simply about employees threatening to leave, however. Data has shown real positive benefits of allowing and empowering flexible work. Additional Gartner data found 55% of employees **became high performers** when provided "radical flexibility" - or control over where, when, and with whom they worked.

While this has numerous benefits, the shift does not come without its challenges: chief among them is remote collaboration. The ability to work and communicate without locational restraints is currently seen as a priority for 71% of respondents, and this number would only decrease to 62% should the pandemic completely vanish in the future.

Figure 7

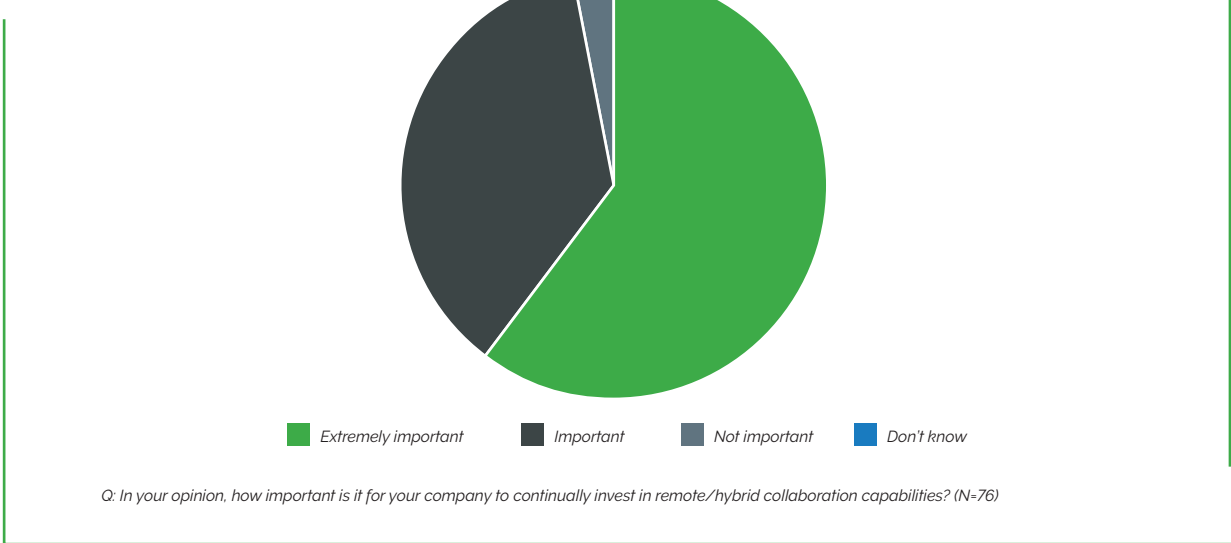
THE IMPORTANCE OF REMOTE COLLABORATION IS HERE TO STAY



The next question clarified this point further by asking respondents how important it is for organizations to continually invest in remote and hybrid collaboration capabilities going forward. A whopping 98% said it was important, with 61% describing the priority as extremely important. Clearly these executives and decision makers recognize the benefits of shoring up their remote collaboration technology, rather than resting with the platforms they may have adopted in haste when the pandemic hit.

Figure 8

COMPANIES WILL KEEP INVESTING IN REMOTE/HYBRID COLLABORATION CAPABILITIES

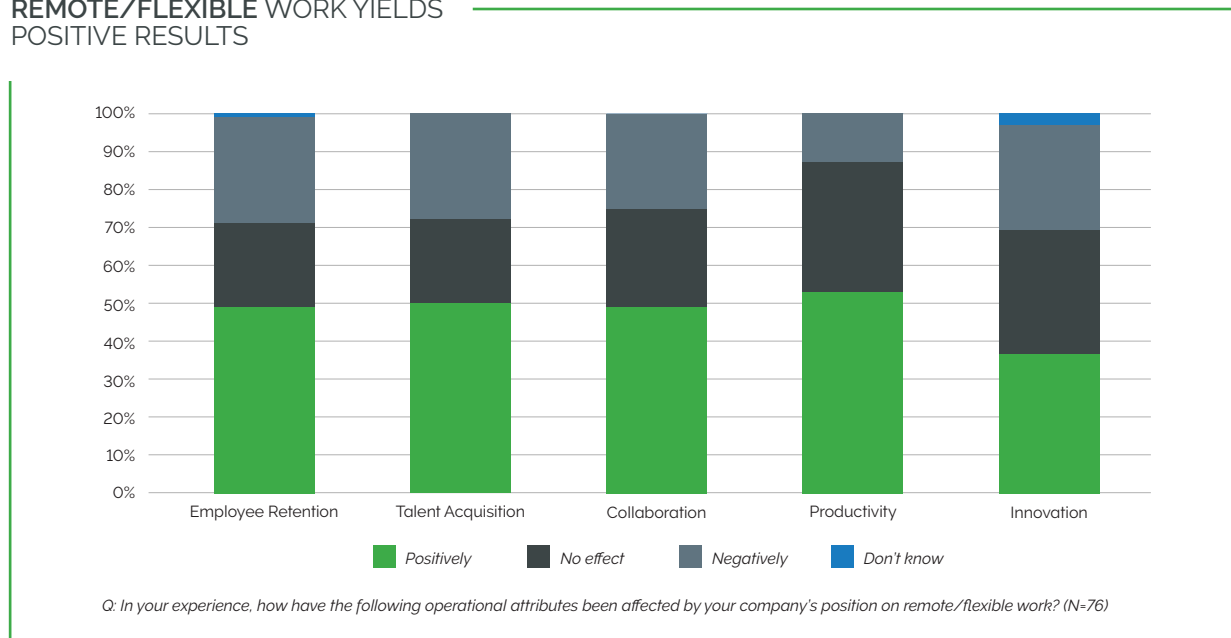


The benefits are there, especially when it comes to employee well-being. The bulk (49%) of respondents said that their position toward remote and flexible work had positively impacted employee retention, with 50% saying it helped in talent acquisition. Given the increasing scarcity of specialized workers, their contentment is taking a rising priority with many organizations. That said, the improvements do not stop there. Just under half (49%) believed flexible attitudes toward remote and hybrid work improved collaboration, with 53% stating productivity also improved.

The only area where an organization's position regarding remote and flexible work seemingly had no clear positive impact was innovation, where only 37% (still the largest segment) said it benefited. While it is too early to say definitively whether remote and hybrid work will benefit or hinder innovation, we think it is important to remind readers of the state of these SaaS technologies. Many of them are in infancy. For instance, hardly anyone had heard of Zoom before March 2020. Since its rise to prominence, Zoom and other similar providers have been working on developments to create stronger, more robust virtual collaboration and working spaces.

Figure 9

REMOTE/FLEXIBLE WORK YIELDS POSITIVE RESULTS



Many of the standard, traditional definitions of work and the workplace are being questioned, led in large part by developments in SaaS. Without SaaS solutions, organizations would have to make major financial and personnel investments before any real level of remote collaboration was possible. While almost 66% may worry that remote work challenges company culture (according to data gathered by the Society for Human Resource Management (SHRM)), the fact remains that employees love flexibility. McKinsey research showed roughly 80 million Americans enjoying flexible work conditions, with many reporting they wanted more time working from home. These worries from executives will likely fade (at least to some extent) over time, especially as new and more comprehensive remote work platforms enter the market. Regardless, the shift away from centralized work is real and increasing. SaaS involvement around remote collaboration solutions will not only be advisable but likely essential in the short-term future.

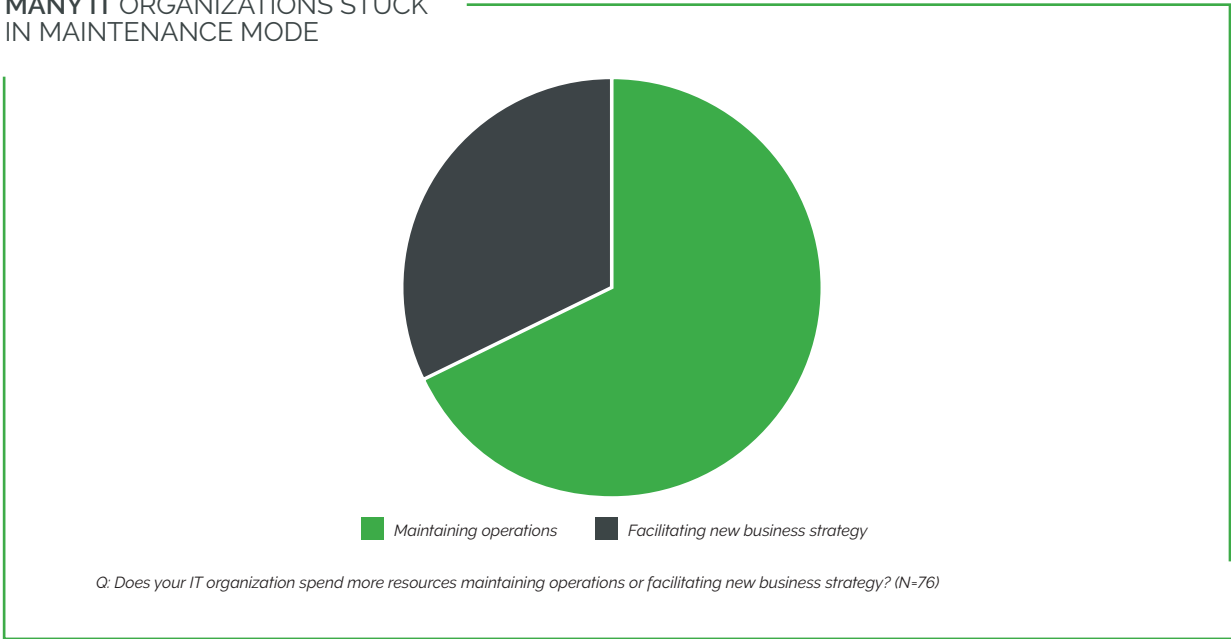
The Financial Considerations of Embracing SaaS

Of course, the shift to SaaS is not all for the good (or rather the remaking) of employee culture and well-being. There are sizeable financial benefits to consider as well. It seems impossible to make such a sweeping statement like "SaaS saves money" when there are so many variables. The cost of the solution itself is obviously one – and one that changes with nearly every vendor. There are also investment costs, training costs, disruption time – all components that suggest SaaS is not innately more or less expensive than current on-premises offerings.

All of this, however, fails to take into consideration the time of employees, namely IT departments. When asked to intuitively judge whether their IT organizations spent more resources maintaining operations (upgrading software, managing hardware utilization, etc.) or helping to facilitate new business strategies, 68% said it was the former. This means that most of the highest paid, most specialized workers within a company function like digital janitors, cleaning up the continuing mess while ensuring all essential functions will still work tomorrow. When considering how much business is done in the digital realm, it is impractical to relegate such an incredible amount of talent to only maintain the status quo. IT has gone beyond such custodianship.

Figure 10

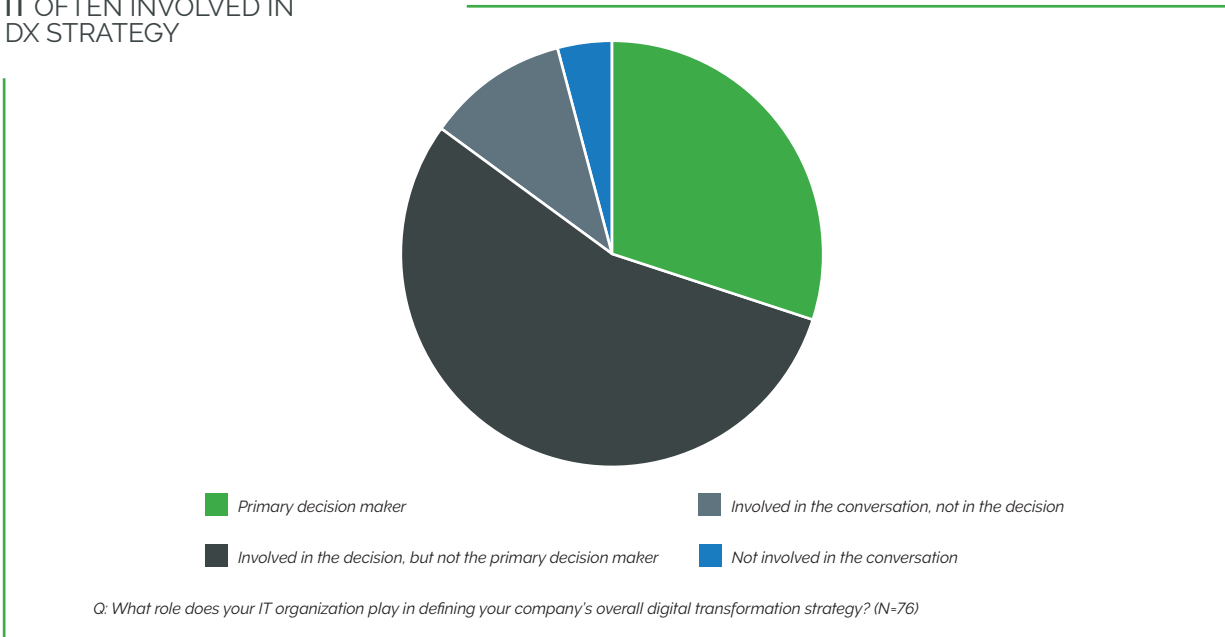
MANY IT ORGANIZATIONS STUCK IN MAINTENANCE MODE



This shift is evident when asked how IT departments interact with overall DX strategy. A sound majority (85%) said that IT was at least involved with the decisions – with 30% saying they were the primary decision maker. IT is shaping how organizations evolve in today's landscape but likely do not have the available resources to participate more actively. While it is important to have specialized experts at the table making the initial decision, this cannot and should not be their only involvement. IT can be instrumental in selling the solution, both by outlining its practical applications as well as training/educating unsure employees on its viability.

Figure 11

IT OFTEN INVOLVED IN DX STRATEGY



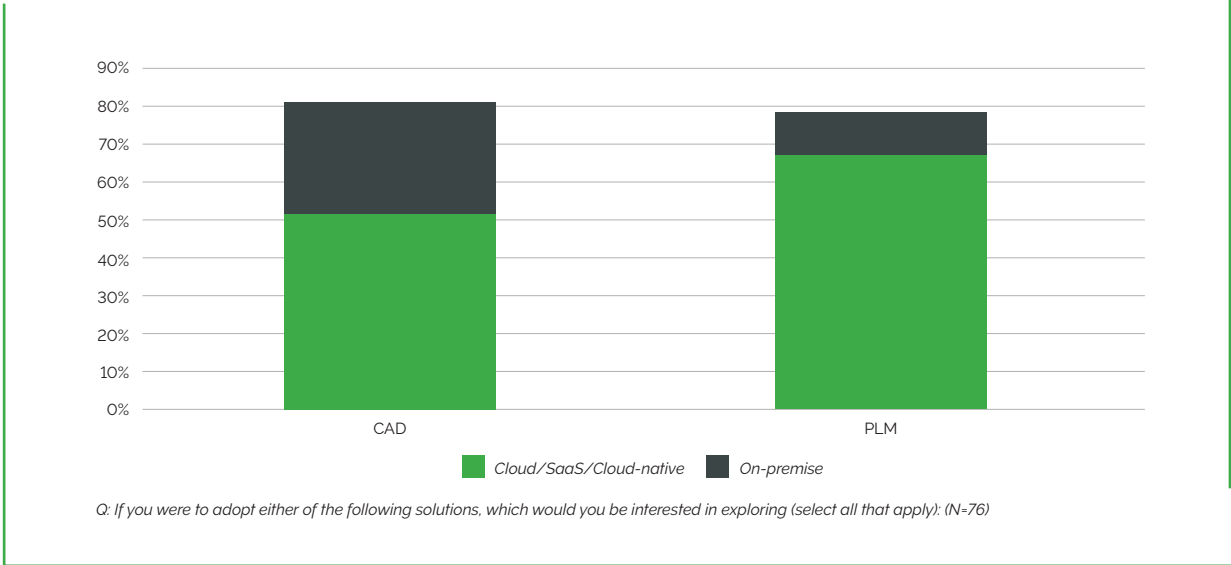
It is through SaaS that many organizations will free their IT departments to become more active, engaged, and impactful players in ongoing digital transformation efforts. SaaS takes the maintenance away, as its platforms are upkept by a third party. Updates, when they do go out, are much more uniform – which keeps the organization working on stable ground, rather than one department questioning why it cannot do what others around it can. The burden of IT is removed without sacrificing any key capabilities. If time is money, then the IT department must be freed, and SaaS is the key.

SaaS and CAD and PLM

This wide range of improvements have led many in CAD and PLM to strongly consider SaaS over on-premises alternatives. In prior years, this shift was unimaginable. The computing power required alone would make performing complicated processes like CAD design or PLM management impossible. Improvements to online infrastructure, however, have not only made the impossible possible but it is commonplace. Vast amounts of computing are now routinely done in the cloud as opposed to on-premises hardware. This improvement opened the platform's viability – as many organizations want to give their engineering staff the same level of freedom and flexibility as other knowledge workers share.

Figure 12

COMPANIES WANT TO ADOPT SAAS OVER ON-PREMISE



That said, PTC is not saying on-premises does not have a future. We do, after all, have on-premises platforms like Creo and Windchill that will not be going away anytime soon. We do, however, also offer cloud-native CAD (Onshape) and PLM (Arena) solutions, specifically designed to help those organizations without established manufacturing and IT infrastructures innovate and create products faster and with stronger levels of remote collaboration. Windchill recently received a cloud version through [Windchill+](#) and further enhancements on existing solutions are expected soon. Regardless of where an organization is on its digital journey, PTC's diverse product portfolio has been designed to ensure we can aid clients looking to innovate and improve their overall workflows and performance.

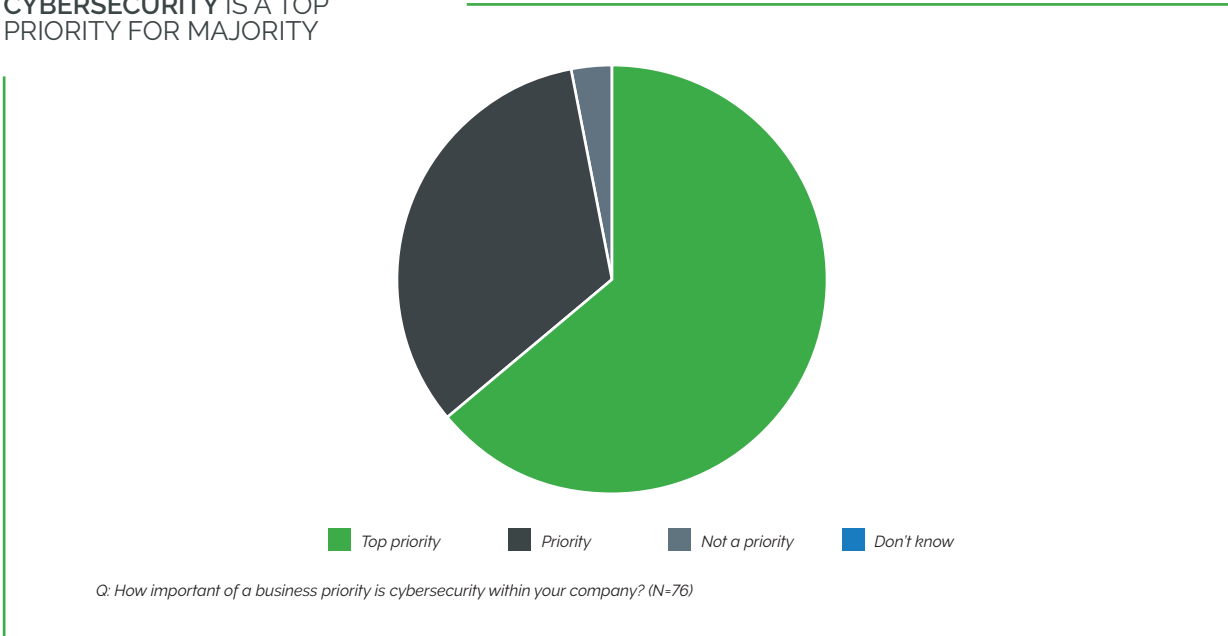
It is clear, based on data like the chart above, that organizations working with CAD or PLM not considering SaaS may be left behind as the benefits of SaaS solutions are just too numerous to ignore.

SaaS in the Coming Digital Landscape

SaaS is not a new concept, but its recent innovations have made it not just applicable but essential to the manufacturing space. Yet there is one more benefit to SaaS to touch on in this whitepaper: security. We at PTC believe that SaaS will do wonders in the fight against cyberattacks, and in ensuring a greater standard of data security across organizations. What we feel confident saying now is this: Cybersecurity is a priority to many organizations now and this will not change in the future. Moving to SaaS will ensure this priority is met as thoroughly and continuously as it needs to be to ensure vital data is always protected.

Figure 13

CYBERSECURITY IS A TOP PRIORITY FOR MAJORITY



SaaS is already a cornerstone of digital transformation. The pandemic highlighted the numerous benefits SaaS solutions can bring to organizations, while showcasing many previously unknown and under-valued capacities for remote collaboration. In this new environment, being decentralized will be the norm, not the exception. For organizations looking to scale quickly, hire the best people, and ensure a consistent level of work regardless of location, SaaS offers potential too great to ignore.



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