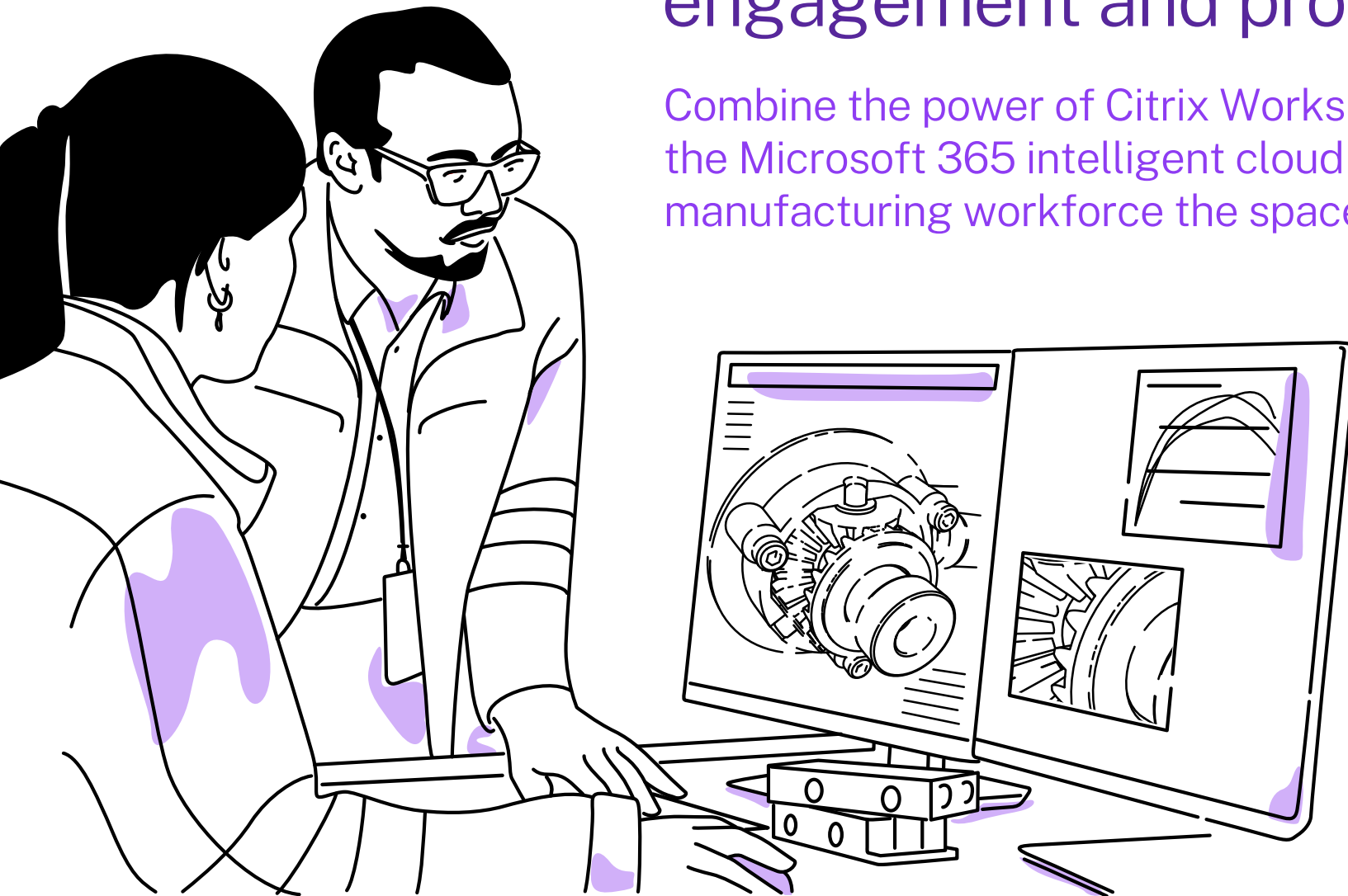# Build the future of manufacturing by driving engagement and productivity

Combine the power of Citrix Workspace and the Microsoft 365 intelligent cloud to give your manufacturing workforce the space to succeed

Navigate manufacturing complexity and challenges by providing a great worker experience

The events of 2020 transformed the manufacturing industry. As governments issued stay-at-home orders, manufacturers scrambled to enable remote workers, safely open and close plants based on changing local and regional requirements, and secure valuable data and processes. While demand plummeted for some companies, it exploded for others. Many firms experienced supply chain stress, material shortages, and distribution issues. As a result, manufacturers, material suppliers, and supply chain operators are rethinking their strategy, operating model, and processes to navigate a forever-changed reality.

Manufacturers are under more pressure than ever to enable flexible, hybrid work models. They want to accelerate innovation and operations and meet rising customer and worker expectations, while ensuring regulatory compliance in all the geographies they serve.

At Microsoft Ignite 2021, Microsoft CEO Satya Nadella described the new trends governing business. In our new digital world, ubiquitous computing will reign, and trust will be built into solutions by design. Organizations will maintain control over sovereign data, simplifying regulatory compliance. Workers will benefit from ambient intelligence, developing immersive experiences that customers love. Empowered creators will use Citrix and Microsoft tools and analytics to push the boundaries of what is possible, improving economic opportunity for everyone.[1]

The key to accomplishing these goals is providing collaboration and innovation tools that enable your workforce to work from anywhere, anytime. As a manufacturing organization, you can unlock potential for your people and customers as you build business agility, tenacity, and resiliency for what's next.
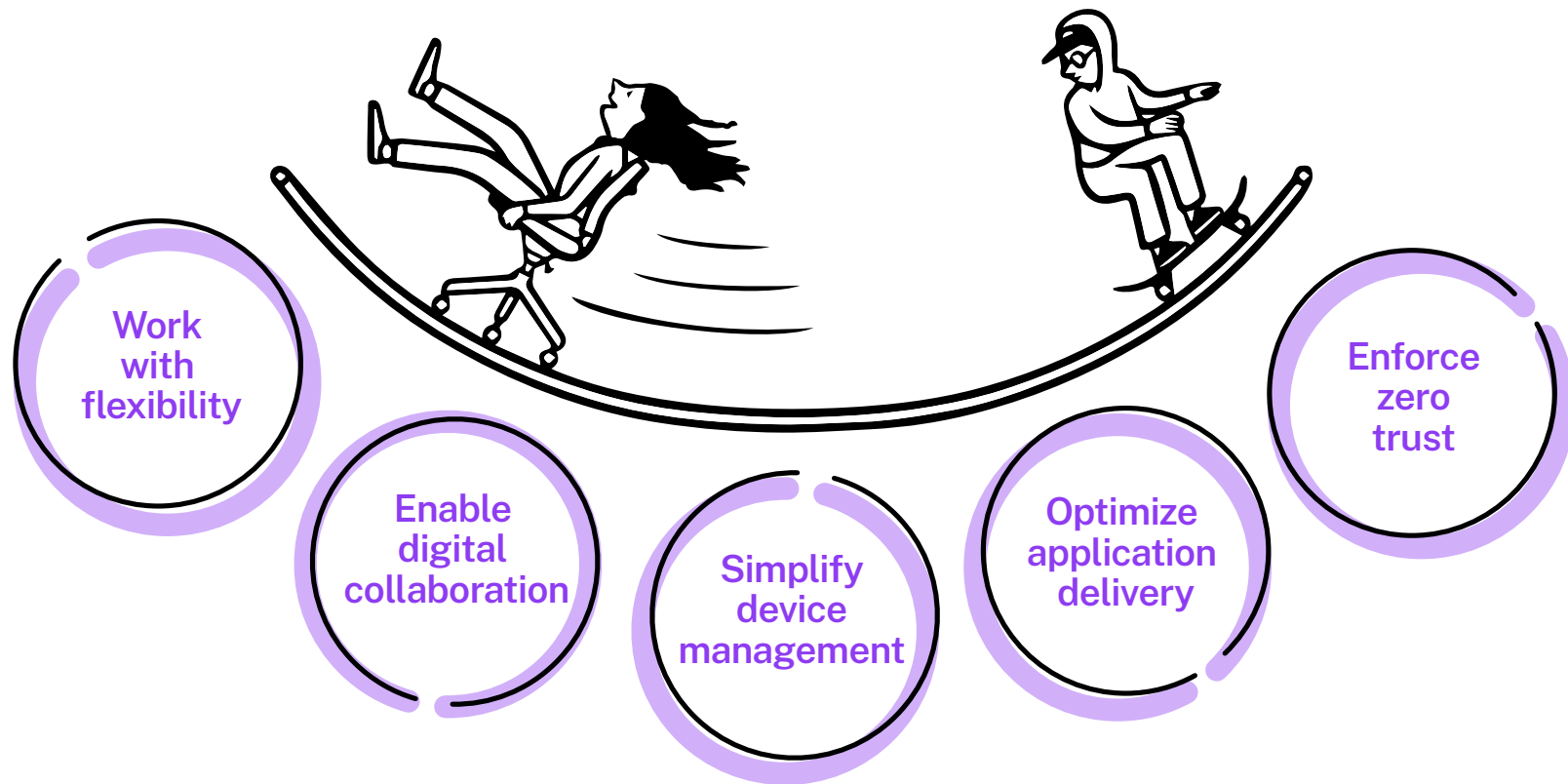
In this eBook, we explore key themes for the future of work and how Citrix Workspace and the Microsoft intelligent cloud will enable greater success for your organization.

- Delivering an intelligent platform for a world of work
- Operationalizing flexible, hybrid work models
- Scaling business growth with a hybrid cloud infrastructure

- Fueling collaboration with streamlined workflows
- Providing a consistent application and network experience
- Managing security with a zero-trust architecture

▶ **Let's take the journey together.**

Citrix and Microsoft: your partners for accelerating the future of manufacturing

Citrix Workspace and Microsoft

- **Work with flexibility**
- **Enable digital collaboration**
- **Simplify device management**
- **Optimize application delivery**
- **Enforce zero trust**

Citrix and **Microsoft** are better together, helping manufacturing organizations and their people reach their full potential. Together, we deliver an exceptional experience by putting people, rather than devices, at the center of our powerful, integrated platform. Your workers gain the space they need to think, explore, and grow. And when the pressure is on, digital workspaces and automated workflows quiet distractions, guiding users to the work that matters most.

Celebrating how far we've come with Citrix Workspace and Microsoft 365

The world has experienced a torrent of change. As manufacturers enabled remote and flexible work models at scale, it has strained networks and app delivery infrastructures, as well as IT organizations' ability to support them. Corporate private virtual networks were ill-equipped to handle exponential growth, accelerating organizations' race to the cloud.

Complicating this path is the fact that manufacturing organizations and their workforces have more stringent requirements than other industries. Manufacturers need to enable collaboration but must lock down a vast data wealth to prevent misuse. Designers require high-speed connectivity, resource-intensive 3D CAD design tools, and high-definition imagery to develop and model new products. And supply chain and operational teams need seamless digital workflows to automate key processes, putting their focus back on decision-making.

Despite these challenges, enabling flexible workstyles with hybrid cloud IT infrastructures, including digital workspaces, has been proven to work. Manufacturers and their workforces have sustained collaboration and productivity in new ways, driving transformation further and faster than anyone could have predicted.
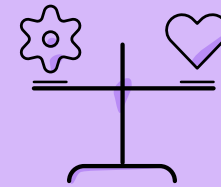
Remote work helps individuals take control of their workday

2 in 3 report an increase in productivity.

2 in 3 say it increases their job satisfaction.

4 in 5 say they have better work-life balance.[2]

Citrix and Microsoft 365 deliver an intelligent platform for manufacturing growth

Citrix Workspace enables people to work from anywhere, while providing them with a modern Windows desktop; **Microsoft 365** collaboration and productivity experience; and access to all the SaaS, web, and virtual apps they use. Our partnership with Microsoft also increases your flexibility with **Citrix Virtual Apps and Desktops Service**, enabling you to deploy on **Microsoft Azure** to gain enterprise-class virtual desktop infrastructure (VDI) capabilities.

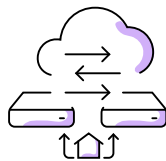## Work productively anytime, anywhere:

You gain a single, unified experience with Citrix Workspace and Microsoft 365. Workers benefit from faster logins; streamlined access to productivity, communication, and collaboration apps; and intelligent microapps that simplify routine processes.
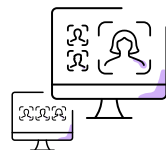
Simplify VDI management:

IT organizations can spin up new resources with Microsoft Azure alone, simplifying Windows 10 migration while gaining cost and efficiency advantages. Or they can tap Citrix Cloud and Azure to simplify management, increase elasticity and host more sessions on individual instances.

Scaling to meet demand:

Microsoft Teams has scaled to handle incredible demand for video, chat, and online collaboration. In addition, Citrix HDX Real-Time Media Engine optimizes Microsoft Teams, providing flawless voice and video and delivering an exceptional experience with minimal latency.

Collaborate seamlessly around the world:

Citrix Content Collaboration and Microsoft OneDrive speed innovation cycles, with a single sign-on, secure data access and storage, and digital workflows that speed feedback and approvals.

Deliver a consistent experience:

Citrix Application Delivery Controller (ADC) optimizes the application experience with availability, scale, performance, and security. Citrix SD-WAN breaks out Microsoft 365 and Teams to the nearest Microsoft 365 Front Door. Meet increased demand for Teams, while enhancing security, control and scalability. Content offloading enhances the Teams experience.

Secure endpoints everywhere:
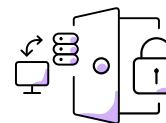
With Citrix Endpoint Management's native integration to Microsoft Endpoint Manager, you gain a wide range of app support and security policies. SSO to SaaS and web apps streamline access and dynamically launched isolated browsers protect corporate networks accessing untrusted apps or websites.

Envisioning the future of work in our new digital reality

As the pace of business and technology change increases, manufacturers and suppliers are shattering records everywhere. They're transforming business in real-time and building much-needed resilience to weather both planned and unanticipated change. As a result, IT is now forecasting far into the future: aligning investments and innovation to new trends, so that manufacturers and their partners can tap the full potential of the new opportunities that arise.

So, what's next?

Manufacturing IT leaders will develop hybrid infrastructures to support the development of digital business models, products and services, and experiences. At Ignite 2021, Microsoft CEO Satya Nadella said that we will witness the rise of:[3]

Ubiquitous and decentralized computing:
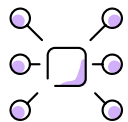
Advances in technology materials, semiconductors, and systems are fueling the fast-paced evolution of computing architectures, unleashing the exponential increase of compute capacity. In addition, manufacturers are pushing compute to the edge using the Microsoft Intelligent Cloud, to deliver a better user experience and enable easier processing of vast data sets for analytics.

Empowered creators:

Anyone can become a creator with Citrix Workspace and Microsoft tools, streamlined data access, and predictive and analytical capabilities. For example, users can build custom microapps in Citrix Workspace to simplify and automate everyday tasks. Manufacturing design teams can use Microsoft Mesh to team with experts and see, share, and collaborate on persistent 3D content, making it easier and faster to move from prototypes to full product development.

Sovereign data and ambient intelligence:

Edge and cloud computing will make it easier to improve data governance and providence, meeting regulatory requirements. Industry organizations will be able to tap multimodal streaming sensor data (including audio, video, and depth) and digital platforms to develop rich, immersive experiences,[4] aiding product prototyping and design, virtual assembly of materials, remote collaboration and training, machine testing and maintenance, and more.[5]

Trust by design:
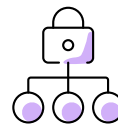
Trust will be built into solutions, simplifying the process of authenticating users, blocking threats, and evolving security to address the latest risks. Solution designers will adopt zero-trust security architectural principles for new tools and use ethical principles to govern the design, development, and deployment of artificial intelligence-driven apps. This will enable manufacturers to harness customer data securely, to customize digital products and services.

Flexible, hybrid work models are here to stay

So, the future of work is here and creating new possibilities. You can capture opportunity by unlocking the full human potential of your workers. Together, Citrix and Microsoft technology empower a better experience for all your users, so that they can think, collaborate, and innovate.

Citrix Workspace is a secure, intelligent, and high-performing digital workspace designed to help improve the employee experience by quieting distractions and guiding users to work that matters. It organizes, guides, and automates everyday tasks, boosting productivity and generating a sense of accomplishment. Citrix Workspace also gives IT more visibility and control for simplified management, security, and compliance.

With **Microsoft 365**, users can work anywhere, while using business data securely. That may mean working at home, joining in-person groups in the office, or creating physical-virtual groups of workers at any location. It also means partnering with cloud-based talent pools, contractors, and others to accelerate innovation. Whatever work looks like, flexible workstyles will be critical to winning and retaining the best talent. Organizations are evolving HR strategies, IT infrastructures, office space, and more to meet these new demands.

Citrix and Microsoft have jointly developed the **Citrix Optimization for Teams** to create a secure, unified collaboration hub with the performance of a local installation and the security and simplicity of a virtual app. When you combine Teams with Citrix virtualization, you can centralize control by managing Teams alongside other virtualized enterprise apps, improve security by storing data on the cloud, and maximize your existing Microsoft 365 subscription entitlements.

KEMET

KEMET uses digital workflows to remove distractions from employees' workdays

KEMET, a global electronics supplier, is building a better employee experience with Citrix Workspace. "The personalized feeds capability inside Citrix Workspace is one of the things that I jumped on immediately as being important to my users," says Chris Hall, Global VP of IT. In addition, Citrix Cloud is helping KEMET transition from its on-premises infrastructure to the cloud. "It gives my internal IT team the ability to manage that experience across geographies and across borders." [6]

# Citrix and Microsoft – operationalizing hybrid work models in manufacturing

Citrix and Microsoft technology and our connected roadmap drive continuous innovation for the world's organizations. Together, we help manufacturers and suppliers rethink their business and IT strategies, simplify remote work and collaboration, effectively navigate business-critical disruptions, and spur innovation and business growth.

Citrix Workspace taps your entitlements for Azure Virtual Desktop (formerly known as Windows Virtual Desktop) to deliver a secure digital workspace on any device, enabling more seamless growth and connecting global teams for continuous collaboration. Citrix and Microsoft help you simplify Azure migrations and gain new capabilities, while decreasing costs.

Since business demand is always changing, IT can scale up or down to meet burst or seasonal growth with the sustained scale afforded by Citrix ADC and Citrix SD-WAN. That ensures you can continue operating in any condition, while avoiding productivity issues due to latency or application glitches.

With growth and innovation comes potential risk. Citrix and Microsoft unified endpoint management and mobile application management help IT keep endpoints under control, including personal devices. Citrix Analytics enables IT to review user activity across applications, content, and networking. IT organizations can tap machine learning to identify suspicious behavior and enable automated responses.

Microsoft Security Graph API and Citrix provide a unified threat intelligence view across their hybrid cloud environment. Security administrators can use these insights to mitigate risk on an ongoing basis.
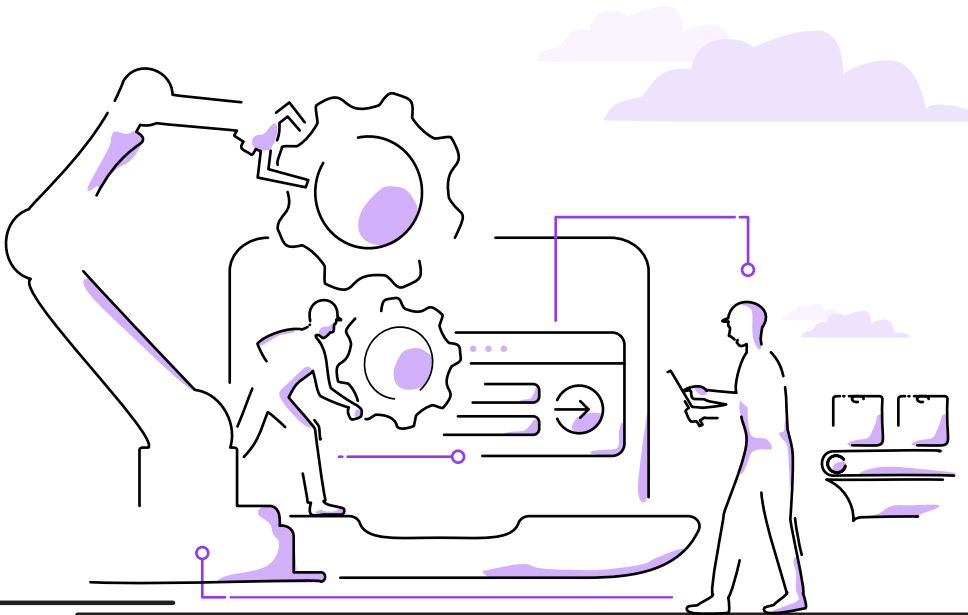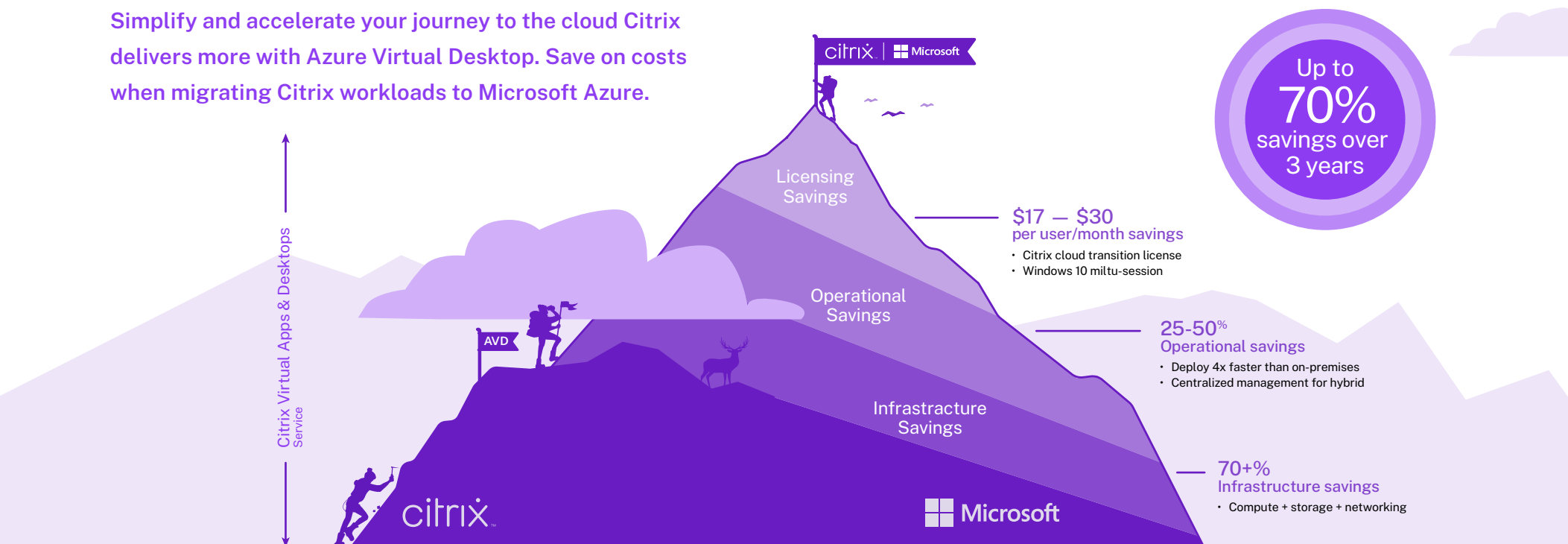
Enabling your IT organization to scale the business

It's likely that your manufacturing organization was among the 46 percent of businesses that increased their investment in their hybrid cloud infrastructure[7] to enable faster innovation and remote work models during the pandemic. Microsoft and Citrix provide joint tools and services to simplify and speed the transition of the Citrix Virtual Apps and Desktops service to Microsoft Azure, while still leveraging Azure Virtual Desktop investments. Citrix technology enables you to manage all your cloud investments in one place. It also simplifies capacity planning, allows for bursts, and controls costs.

IT can build the hybrid infrastructure that makes the best sense for your manufacturing organization with Citrix and Microsoft. You will be able to fully support Windows 10 multi-session desktops, available only as part of Azure Virtual Desktop, while managing your on-premises infrastructure. Using one view enables you to migrate apps to the hybrid cloud faster, as well as manage hybrid deployments more easily. Citrix IT admin tools for virtual and cloud apps provide rich capabilities, including image management, application layering, and advanced analytics.

Simplify and accelerate your journey to the cloud Citrix delivers more with Azure Virtual Desktop. Save on costs when migrating Citrix workloads to Microsoft Azure.

citrix | Microsoft

Up to **70%** savings over 3 years

Citrix Virtual Apps & Desktops Service

AVD

Licensing Savings

Operational Savings

Infrastructure Savings

citrix

Microsoft

$17 — $30 per user/month savings
- Citrix cloud transition license
- Windows 10 miltu-session

25-50% Operational savings
- Deploy 4x faster than on-premises
- Centralized management for hybrid

70+% Infrastructure savings
- Compute + storage + networking

Streamlined workflows make collaboration easier and more powerful

Ready to get to work? **Citrix Content Collaboration** enables internal-external groups to access, sync, and share files securely from nearly any file repository on any device. People just work better when they can access everything that they need in one place, while manufacturers value the ability to secure valuable data, whether it's business strategies, supplier lists, product designs and launch plans, or sales forecasts. In addition, workers can share massive files, such as CAD or 3D images, collaborating in a follow-the-sun model to finish and launch projects. Citrix Content Collaboration meets business demands by:

Supporting hybrid storage architectures:

Maintain flexibility by providing access to Microsoft OneDrive, SharePoint, and Windows network shares. Avoid costly migration programs, by continuing to store content on-premises, in the cloud, or across your hybrid infrastructure.
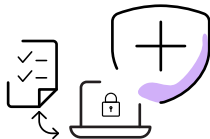
Providing secure file access:

Securely enable access to encrypted content on any device, supporting teams' flexible workstyles. Gain instant access to key documents in the same central console, streamlining workflow.

Accelerating workflows:

Focus your people on innovation, not busywork. Solicit feedback, review and address suggestions, request signoffs, and collect electronic signatures in a seamless, automated workflow.
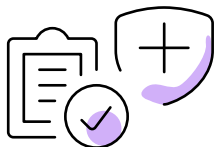
Maintaining regulatory compliance:

Gain enterprise-grade controls that protect your manufacturing organization from unauthorized access and data leaks. Audit, track, and log all access to data including personally identifiable information (PII), maintaining compliance with data sovereignty and consumer privacy regulations.

A consistent, scalable application and network management experience can unlock new levels of productivity

Providing seamless, ongoing access to applications and corporate networks has never been more important. In addition to unplanned outages, remote manufacturing workers are experiencing the impacts of network congestion, as more edge sites, bandwidth-intensive apps, and endpoints create latency. When virtualized, applications such as 3D CAD design tools put stress on corporate networks, which may degrade application performance and usability.

In addition, manufacturing organizations will want to tap the growth of 5G, edge computing, and Internet of Things applications. Manufacturing teams are eager to automate processes, develop customized digital products and services, and power new capabilities such as predictive maintenance. As a consequence, IT teams want to create a network performance model that will scale easily to handle billions of new endpoints.

Citrix Application Delivery Controller (ADC) and **Citrix Application Delivery Management (ADM)** simplify the delivery of applications across your hybrid, multi-cloud environment. You gain exceptional performance for both traditional and cloud-native apps.

Taking a software-centric approach to application delivery also increases IT's visibility and ease of management. IT gains a single pane of glass across the hybrid cloud, with insight into application and network health, performance, and potential issues. IT also benefits from operational consistency by using a single code base across formats, streamlining security, auto-scaling, and licensing.
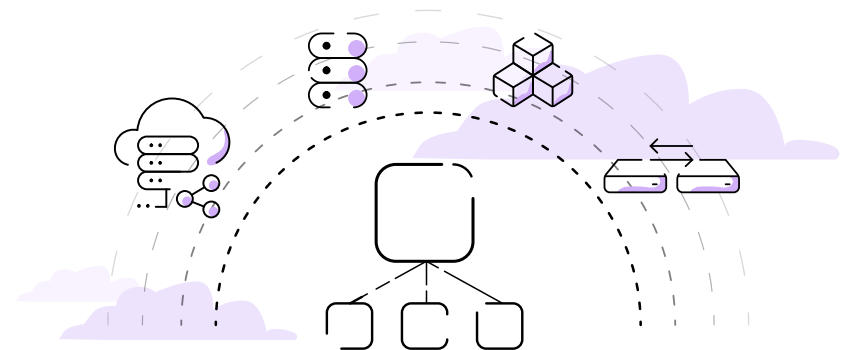
Citrix ADC ensures app performance and high availability in a remote-work world.

Citrix SD-WAN spurs application performance

Citrix makes the transition to **Microsoft 365** easy by optimizing network connectivity through a combination of automation and simpler configuration processes. **Citrix SD-WAN** follows Microsoft's recommendations to minimize latency and improve user performance for Microsoft 365 applications by providing direct and reliable connections for all office locations simultaneously. The Citrix solution leverages APIs containing published Microsoft 365 endpoint URLs and IP addresses to automatically learn and use the closest front door locations to users. This capability, in conjunction with the built-in stateful firewall, provides the ability to do local breakout of trusted, latency-sensitive Microsoft 365 and Microsoft Teams traffic over local ISPs for all your office locations.

Citrix SD-WAN enables you to offer a consistent user experience, wherever people work. You can deliver any desktop or app, including Windows, Linux, Web, or SaaS apps, anywhere, increasing your business flexibility. Citrix SD-WAN optimizes where application traffic is routed and how it uses bandwidth to deliver a low-latency experience workers love. It also extends security to the WAN edge and provides TLS security for direct breakout from branch offices to Microsoft 365.

How Citrix SD-WAN ensures the best Microsoft 365

1) Identifies Microsoft 365 traffic with a physical or virtual appliance.

2) Optimizes trusted traffic to the nearest Microsoft 365 front door.

3) Steers Microsoft 365 traffic directly to the Internet from branch locations.

4) Provides last-mile connectivity with local DNS to Microsoft 365 Cloud Front Doors.[8]

METRIE | Metrie Reduces Latency with Citrix SD-WAN

Metrie, the largest supplier and manufacturer of solid wood and composite molding in North America, needed to make all of its apps available and performing in a consistent and familiar way for users. "Citrix SD-WAN helped us to optimize connectivity to Office 365 and critical business applications, resulting in a much-improved end user experience. In technical terms, we've seen a 57% reduction in latency in branches for Office 365, lowered packet loss by 93%, and a 21% reduction in jitter," says Will Crichton, Director, IT Operations.[9]

Managing security with a zero-trust architecture

Security risks and threats are growing, challenging manufacturers' ability to keep pace. IT organizations have witnessed a rise in phishing, social engineering, ransomware attacks, and fraud attempts, among other threats. Manufacturers want to share vital information with partners and suppliers to accelerate product development and launches and minimize production delays, while also keeping intellectual property secure from unauthorized access.

In 2020, manufacturing was the second-leading industry for cyberattacks, experiencing 17.7 percent of all attacks. The top three threats were ransomware (21 percent), data theft (16 percent), and business email compromise (16 percent).[10]

Instead of blocking and tackling each threat, organizations are increasingly adopting a zero-trust model, which is based on the principle **"never trust; always verify."**[11] This includes explicitly and continuously validating identities, devices, and communication between micro-services to immediately detect and prevent unauthorized access attempts and enforcing least-privileged access principles. By so doing, IT can proactively reduce their organizations' attack surface.

Citrix and Microsoft help IT teams realize their goal of developing zero-trust architectures. **Citrix Secure Workspace Access** and **Azure Active Directory (AD)** provide contextual access management, while Azure AD maintains an up-to-date user and device inventory. Citrix Endpoint Management isolates and protects apps and content across devices and user sessions. Single sign-ons to SaaS and web apps protect the user experience, while integrated security policies and isolated browser sessions for untrusted apps and websites further enhance network security. Finally, Citrix Secure Internet Access, Citrix Gateway, and Citrix Analytics for Security provide a unified, cloud-delivered security stack, with secure remote access and proactive protection.

WORKLOADS

PEOPLE

DEVICES

ZERO-TRUST

DATA

NETWORKS
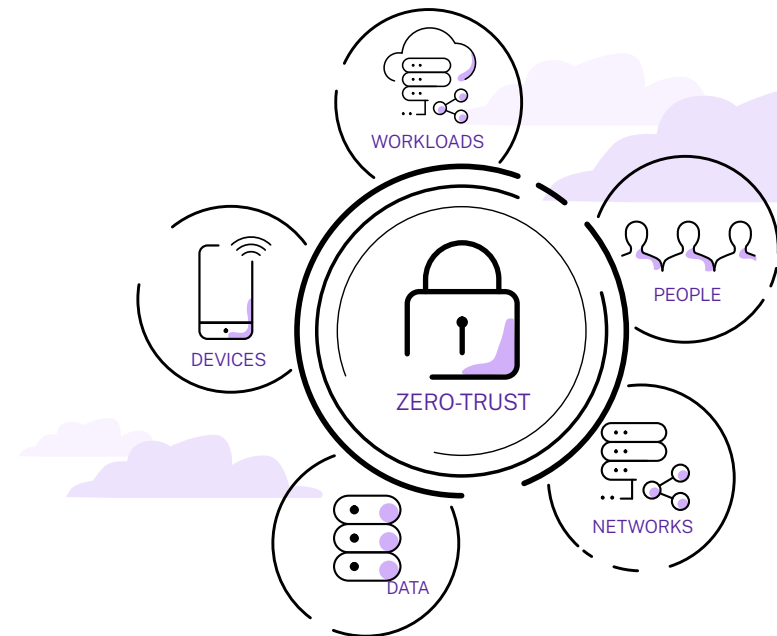
Integrated security tools from Citrix and Microsoft

Your manufacturing or supplier workforce uses multiple devices every day, from office workers at their desks, to field forces, supply chain teams, factory technicians, and more. As a consequence, your IT organization wants to strengthen endpoint management without harming productivity.

Citrix and Microsoft Unified Endpoint Management (UEM) keep your user experience and enterprise security rock-solid in any condition. Citrix and Microsoft UEM offers the widest range of app support and policies, triggering automated actions based on how, when, and where users access apps and data. We create a unified experience for all your technology, including Citrix Workspace, Microsoft tools, and other apps.
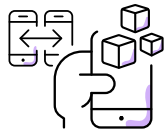
Offers 200+ mobile device management (MDM) and 70+ mobile app management (MAM) policies.

Uses Microsoft mobile application management and micro-VPN to enhance mobile security.
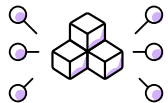
Manages every app and endpoint with one unified view.

Benefit from Azure AD Single Sign-on for a better user experience.

Citrix Endpoint Management was named to Gartner's Magic Quadrant for UEM[12] and the Expert Insights' 2021 Cybersecurity "Best-Of" award winners in the categories of Unified Endpoint Management (UEM) and Enterprise VPNs.[13]

Citrix Workspace and Microsoft 365 help manufacturers sustain intensity

When you deploy **Citrix Workspace** with **Microsoft 365**, you get the modern desktop, digital workflows, and intelligence you need to maximize worker engagement and productivity, unlocking new potential for your manufacturing organization.

Our digital workspace solutions enable your users to do their very best work. And our platform brings the user experience, IT flexibility, and security together to foster innovation, resilience, and business continuity – all while removing the limits of geography, devices, networks, and even clouds to deliver a better user experience.

In conclusion, Citrix and Microsoft offer your manufacturing business the opportunity to harness cloud services, scale and economics to deliver high-performing digital and virtualized workspace solutions. You can unlock the full potential of your workforce to create competitive advantage in the marketplace. IT is empowered to do more with simple processes and centralized visibility and control, enabled by Citrix Cloud. Finally, Citrix Cloud allows you to capitalize on existing investments, enable new scenarios and roll out new workloads to Microsoft Azure, easily driving business growth while meeting your cost objectives.
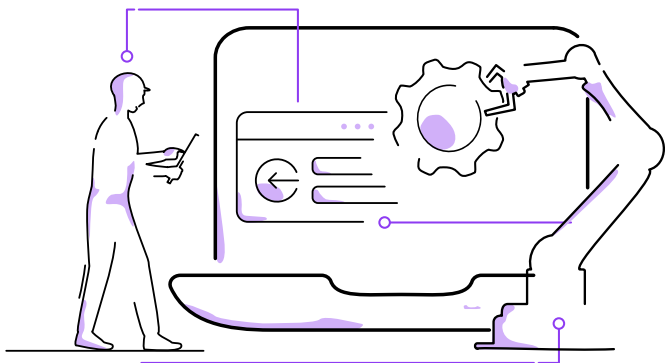
Evolve your intelligent workspace today.

▶ Learn more

▶ Try a demo

▶ Talk to an expert

Leading manufacturers rely on Citrix solutions

Top 10 automotive | Top 10 chemical | Top 10 computer and electronics | Top 10 aerospace and defense[14]

Sources

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3   Satya Nadella, Microsoft Ignite 2021 address, ibid

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5   "AR and VR in Manufacturing: Uses Cases and Benefits," blog, undated, Smartek and "For US manufacturing, virtual reality is real, webpage, undated PWC

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9   "Metrie delivers a prime user experience with Citrix SD-WAN," case study, Citrix, undated

10 IBM X-Force Threat Intelligence Index, 2021

11 "Transitioning to modern access architecture with Zero Trust, webpage, undated, Microsoft

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