Microsoft Surface

Supporting device needs
for Manufacturers

Microsoft Surface for Business offers a versatile device portfolio designed to be the optimal experience for Microsoft 365 and Windows 11 and empower your diverse workforce.

Modern device strategy for Manufacturers

Manufacturers need more help than ever from technology and digital tools to navigate global shifts. To manufacture a more resilient future, companies are using versatile devices to empower their information workers and frontline workforce to be more engaged and productive while adjusting rapidly to new and changing demands and maintaining an efficient production system and supply chain. Frontline workers can use modern devices and digital apps to improve the collection accuracy of production and quality data, connect virtually with technicians to accelerate equipment repairs, and reduce time spent on manual, paper-based processes and administrative activities. With some roles supporting manufacturing processes from other locations or home, companies have also enabled digital tools such as Microsoft Teams to empower employees to connect from anywhere.

[Westinghouse Electric Company](), one of the world's leading nuclear-energy innovators, wants to move toward net-zero carbon emissions. To do so, it needed to modernize its technology ecosystem to help operators overcome the challenges of aging plants and high maintenance costs. The company chose to go all-in on the Microsoft platform, from empowering its employees with Microsoft Surface devices to adopting Microsoft Azure cloud services, AI, and machine learning (ML) technology. The company's deeper relationship with Microsoft began with the deployment of Surface devices followed by Teams and Microsoft 365 E5 to their employees worldwide, giving them access to best-in-class productivity apps with advanced security, compliance, voice, and analytical capabilities. When the COVID-19 pandemic hit, employees could quickly shift to remote work while staying productive and connected.

Like Westinghouse, many organizations have combined a cloud strategy with a modern device strategy to take advantage of the synergies between Microsoft 365 and Surface, often realizing additional benefits including lower total cost of ownership, inclusive of direct savings, IT staff time savings, and employee productivity gains.[1] Light, mobile, and powerful, Surface devices deliver value and a premium experience that fits the needs of all personas in manufacturing, from shop floor workers, warehouse specialists, and field technicians to plant managers, product engineers, mobile sales representatives, and executives.

> " **Microsoft stood out as the only organization with a comprehensive suite of technology that covered all our needs under a single umbrella.** "
>
> *- Mike Abram: Chief Information Officer,*
> [*Westinghouse Electric Company*]()

Surface Go 4 + Surface Pen

The Surface family continues a tradition of Microsoft innovation

Microsoft Surface devices set the standard for premium devices in the PC industry. Elevating product craftsmanship with beautiful designs and high-end components, Microsoft is also raising the bar on security with a chip-to-cloud security solution and seamless device management down to the firmware.

This leadership is built on a long history of Microsoft innovation in the technology industry. From the beginning, Microsoft created Surface to be the device where the best of Microsoft comes together, powered by Windows. Microsoft's end-to-end, integrated portfolio of cloud solutions—Microsoft 365, Dynamics 365, and Azure, along with Microsoft Power Platform—is built on a foundation of security and privacy and helps organizations in every industry build resilience and improve the bottom line.

Innovative technology enables manufacturers to provide all employees, including frontline workers, with versatile devices and tools to improve employee engagement to drive new operational efficiencies.

Portfolio diversity

Microsoft has created new categories of hardware to support various workstyles and roles. For example, lightweight 2-in-1 devices feature tablet-to-laptop flexibility, combining the power of a laptop with the portability and touch interactions of a tablet. Microsoft also innovates on traditional design such as laptops that offer the power required for the most demanding apps and graphics and the flexibility to bring the device on the shop floor or work from home.

Hardware and peripherals

Meet face-to-face through 1080p video using PixelSense high resolution displays, Omnisonic speakers, and far-field mics that bring people together in realistic real-time detail, for more personal-feeling interactions and stronger collaboration. Beyond the keyboard and mouse, features such as touch, voice, LTE and 5G connectivity, and Surface Pen* ink inspire natural interactions. Expanding beyond the PC to large-screen devices, the Surface Hub 3 is a Microsoft Teams-certified meetings platform that can transform any space into a virtual team space and interactive whiteboard.

2-in-1 devices

Pro 9
The most powerful Surface 2-in-1

Go 4
The lightest Surface 2-in-1

Laptops

Laptop Studio 2
Our most powerful laptop

Laptop 5
The perfect everyday laptop

Laptop Go 3
An exceptional value laptop

Desktops

Studio 2+
All-in-one computer with strikingly large 28" display and touchscreen

Large screen meeting devices

Hub 3 50" or 85"
Digital whiteboard, Microsoft Teams-certified meetings platform, and collaborative computing device.

Empower frontline workers to help improve operational efficiencies

Factory floor and warehouse operations specialists and field technicians

To keep production going, frontline workers struggle to:

- Access change-of-shift notes and the latest task assignments from management

- Retrieve paper-based manuals for equipment and safety procedures

- Connect with others on the shop floor or in the field to quickly respond to operational disruptions

- Check inventory and supply levels in real time to manage the supply chain

- Communicate equipment repairs clearly with remote technicians using photos and videos

- Keep up to date on factory schedules, HR announcements, and company news

Surface helps frontline workers:

- Carry a device around all day via a lightweight design and extended battery life.

- Feel empowered with 2-in-1 form factor (tablet, laptop, kiosk) that adapt to the ways they need to work.

- Run full-featured desktop apps using powerful processors and Windows Pro OS to look up information and quickly respond to operational needs.

- Easily interact with digital forms using a high-definition PixelSense™ touchscreen.

- Go paperless and collect digital signatures on the spot using the Surface Pen.*

- Connect with operators or repair technicians at other locations with quality speakers, mics, and cameras and Microsoft Teams.*

- Sign in instantly using facial recognition, a secure PIN, or MFA through Windows Hello.

- Do more with Designed for Surface® accessories* such as durable cases and workstation kiosk stands.

- Deliver enterprise-grade protection for sensitive data.

* Sold separately.

For frontline workers such as factory floor and warehouse operations specialists and field technicians, we recommend:

On the move productivity

Choose Surface Go 4

Laptop-to-tablet flexibility that goes anywhere

Ideal for frontline workers who need a mobile, lightweight device powerful enough to run the apps they rely on while on the floor or in the field. Our lightest Surface starts at just 1.15 lb.[1] with a compact tablet-on-the-go design, HD 10.5" PixelSense™ touchscreen display, and all-day battery[2] life. Able to handle everything from mobile apps to comprehensive full feature desktop software. Optional LTE Advanced connectivity[3] available with the Surface Go 3 LTE model.

Learn More >

Need a more powerful 2-in-1 device?

Choose Surface Pro 9

The most powerful Surface 2-in-1

Tablet portability, laptop performance, and extended battery life [2] enable frontline workers to do more. Portable enough to carry all day, yet powerful enough to replace a laptop. Choose the performance floor specialists need for the work they do with either Intel® Evo™[5] or Microsoft SQ® 3 with 5G.[4] Type with a laptop-class keyboard and collect digital signatures with a pen[6] that's charged and always within reach. This Secured-core PC elevates Windows 11 security benefits for workers handling sensitive company data.

Learn More >

[1] Surface Go 4 starts at 1.15lb.; weight not including Type Cover.
[2] Battery life varies significantly based on usage, network and feature configuration, signal strength, settings and other factors. See aka.ms/SurfaceBatteryPerformance for details.
[3] Service availability and performance subject to service provider's network. Contact your service provider for details, compatibility, pricing, SIM card, and activation. See all specs and frequencies at surface.com. Availability may vary by market and configuration.
[4] 5G not available in all areas; compatibility and performance depends on carrier network, plan and other factors. See carrier for details and pricing.
[5] Surface Pro 9 with 12th Gen Intel® Core™ processors and storage of 256GB and above are built on the Intel® Evo™ platform
[6] Surface Pro Signature Keyboard and Slim Pen 2 are sold separately. Pen storage and charging available on select Keyboards.
* Sold separately.

Empower employees to help meet and generate customer demand

Plant operations managers, product engineers, and sales representatives

To grow sales and production, plant managers, product engineers, and sales reps struggle to:

- Effectively communicate with floor personnel and managers during disruptions

- Collaborate with peers in other locations

- Manage multiple programs, while coordinating with internal, external, and partner stakeholders

- Stay connected when on the plant floor or away from the office

- Run and manipulate large CAD and CAM files

- Work with complex data models

- Document and store sensitive information securely

Surface helps plant managers, engineers, and sales reps:

- Move easily around the plant and between customer locations with Surface ultra-portable design, extended battery life, and reliable Wi-Fi 6 or optional LTE Advanced or 5G connectivity.

- View and share forecasts or product diagrams in stunning detail with PixelSense™ touchscreen displays.

- Run critical business apps, imaging software, and communications apps (Microsoft Teams) concurrently without sacrificing performance or mobility.

- Look and sound great on every Microsoft Teams* call with high-end cameras, optimized microphones, and built-in Omnisonic speakers.

- Engage intently while using keyboard, pen, or dictation to take digital notes during meetings.

- Create the ultimate desktop experience by connecting to displays and docking station in the office or at home with Thunderbolt™ 4, USB-C® and USB-A ports.

- Deliver enterprise-grade protection for sensitive data.

For plant managers, product engineers and sales reps, we recommend:

On the move productivity

Choose Surface Pro 9
The most powerful Surface 2-in-1

Tablet portability, laptop performance, and extended battery life[1] enable plant managers and sales reps to do more. Portable enough to take anywhere, yet powerful enough to replace a laptop and even create a full desktop setup with multiple monitors. Choose the performance managers and engineers need for the work they do with either Intel® Evo™[2] or Microsoft SQ® 3 with 5G.[3] Type with a laptop-class keyboard and collect digital signatures with a pen[4] that's charged and always within reach. This Secured-core PC elevates Windows 11 security benefits for employees handling sensitive company data.

Learn More >

Need a more traditional laptop?

Choose Surface Laptop 5
For speed, style, and performance

With 12th Gen Intel® Core™ i5 or i7 processors, plant managers, engineers, and sales reps get fast, multitasking power to run the business apps they depend on. Perfect for those who want a traditional clamshell form factor with our signature ultra-slim design and either a 13.5" and 15" touchscreen. With USB-C® and Thunderbolt™ 4 ports, these employees can connect to external monitors in their office and at home. This Secured-core PC elevates Windows 11 security benefits for employees handling sensitive company data.

Learn More >

Need more power for CAD?

Choose Surface Laptop Studio 2
Our most powerful Surface laptop

Fuel inspiration and ideas on the most powerful Surface Laptop yet with 13th Gen Intel® Core™ processors built on the Intel® Evo™. Engineers can work seamlessly with software like Adobe® Premiere® Pro, Photoshop®, Lightroom®, Autodesk® AutoCAD®, Dassault SOLIDWORKS™ and more. Take digital notes during meetings like they would with pen on paper with Surface Slim Pen 2[5] on the vibrant, sharp 14.4" touchscreen[6]. Look and sound great on every Microsoft Teams* call, so employees can collaborate effortlessly.

Learn More >

Want an all-in-one, large screen device?

Choose Surface Studio 2+
Sleek, versatile all-in-one computer

Transform a workspace from desktop to digital canvas and work with digital pen on a vibrant 28" PixelSense™ touchscreen display. Craft 3D design and build models—the NVIDIA® GeForce RTX 3060 dGPU is built with the latest RT Cores, Tensor Cores, and streaming multiprocessors. With an 11th Gen Intel® Core™ H-35 Processor, lead video calls, open large files, and fly through presentations with ease. This Secured-core PC elevates Windows 11 security benefits for employees handling sensitive data.

Learn More >

[1] Battery life varies significantly based on usage, network and feature configuration, signal strength, settings and other factors. See aka.ms/SurfaceBatteryPerformance for details.
[2] Surface Pro 9 with 12th Gen Intel® Core™ processors and storage of 256GB and above are built on the Intel® Evo™ platform
[3] 5G not available in all areas; compatibility and performance depends on carrier network, plan and other factors. See carrier for details and pricing.
[4] Surface Pro Signature Keyboard and Slim Pen 2 are sold separately. Pen storage and charging available on select Keyboards.
[5] Surface Slim Pen 2 sold separately.
[6] Surface Laptop Studio 2 display has rounded corners within a standard rectangle. When measured as a standard rectangular shape the screen is 14.36" diagonally (actual viewable area is less).
* Sold separately.

Leading the organization in times of change

Executives and collaborative teams

To generate more business, executives and collaborative teams struggle to:

- Collaborate virtually with colleagues to set the vision for the organization

- Effectively share and communicate forecasts and budgets to executives and the board

- Stay connected and productive when working from home or traveling

- Effectively communicate company news to all employees

- Analyze trends and complex financial models to make well-researched decisions

- Make a good first impression on new customers

- Ensure sensitive customer data stays secure

Surface helps executives and collaborative teams:

- Run critical business software and productivity apps concurrently without sacrificing mobility.

- Meet stakeholders wherever with ultra-portable design, extended battery life, and reliable connectivity.

- View and share presentations and reports in stunning detail with PixelSense™ touchscreen displays.

- Look and sound great on every Microsoft Teams* call with high-end cameras, optimized microphones, and built-in Omnisonic speakers.

- Engage intently while taking digital notes during meetings.

- Make a great first impression using a premium device that also projects your company's premium brand image.

- Create the ultimate desktop experience by connecting to displays and docking station in the office or at home with Thunderbolt™ 4, USB-C® and USB-A ports.

- Deliver enterprise-grade protection for sensitive data.

For executives and collaborative teams, we recommend:

On the move productivity

Choose Surface Pro 9
The most powerful Surface 2-in-1

Tablet portability, laptop performance, and extended battery life[1] enable executives to do more. Portable enough to take anywhere, yet powerful enough to replace a laptop and even create a full desktop setup with multiple monitors. Choose the performance executives need for the work they do with either Intel® Evo™[2] or Microsoft SQ® 3 with 5G.[3] Type with a laptop-class keyboard and collect digital signatures with a pen[4] that's charged and always within reach. This Secured-core PC elevates Windows 11 security benefits for employees handling sensitive company data.

Learn More >

Do it all

Choose Surface Laptop 5
For speed, style, and performance

Conduct video calls, co-author proposals, and run enterprise apps and analytical models simultaneously with 12th Gen Intel® Core™ i5 or i7 processors. Choose the 13.5" size if executives are constantly on the move, or the larger 15" display if they need to multitask with split screens. With USB-C® and Thunderbolt™ 4, executives can connect to an external monitor at work and workstation at home. This Secured-core PC elevates Windows 11 security benefits for employees handling the most sensitive data.

Learn More >

Give remote participants a seat at the table

Choose Surface Hub 3
More inclusive meetings and richer collaboration

Give hybrid teams and remote participants a more inclusive way to meet with a modern, all-in-one collaborative canvas and Microsoft Teams-certified meetings platform. Make any space a teamwork space with a 50" or 85" large screen device that can be wall-mounted or mobile (with stand + battery[4]). Present to onsite and remote meeting participants simultaneously with AI-powered Surface Hub Smart Camera that auto frames the video feed for remote participants, giving them the best possible view of the room. Whiteboard budget and strategic plans using the Surface Hub Pen and Microsoft Whiteboard.*

Learn More >

Layered security with Microsoft Surface

Manufacturers need secure devices, and Microsoft Surface devices provide advanced security out of the box with tightly integrated hardware, software, firmware, and identity protection layers. Microsoft uses a layered security approach, with chip-to-cloud security that includes chips and components designed and built by Microsoft, factory security protocols and inspections, Advanced Windows Security features enabled by default, and comprehensive remote management controls.

Surface powered by Microsoft 365[3] also helps improve enterprise security by simplifying IT operations through its Enterprise Mobility and Security (EMS) platform, which includes products such as Windows Autopilot, Microsoft Entra, and Microsoft Intune. In addition, Secured-core PCs[1], now available on select Surface devices, are designed to elevate the benefits of Windows 11 security, providing additional hardware and software protection for employees that handle the most sensitive data in your organization.

Hardware

Most Surface for Business devices use TPM 2.0 chips to implement a secure and sandboxed environment for storing passwords, PIN numbers, and certificates. The new Surface Pro 9 with 5G and Microsoft SQ® 3 uses Microsoft Pluton architecture to protect sensitive data directly in the CPU, making it more difficult for attackers to access even if they have physical possession of a device. Surface devices are also designed to use Windows Hello for secure biometric authentication.
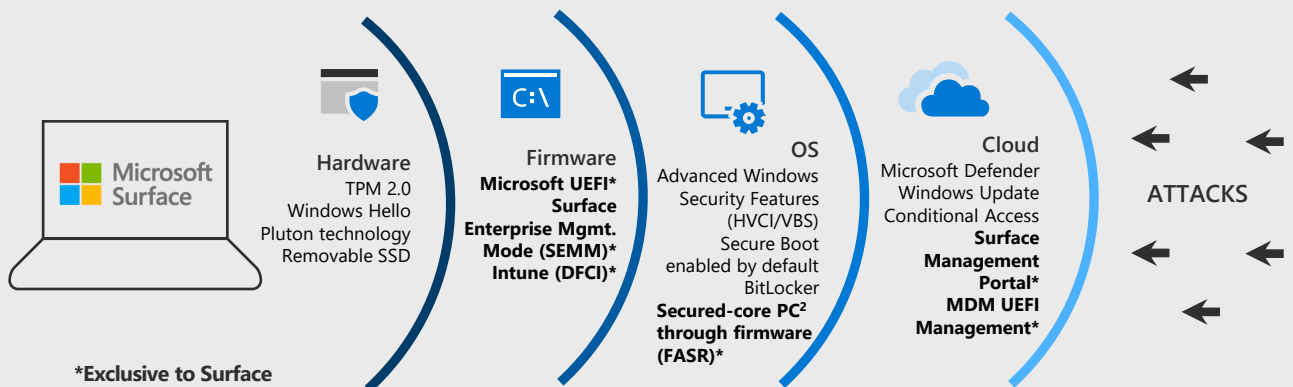
Firmware

Microsoft writes its own Unified Extensible Firmware Interface (UEFI)[2] which enables IT to manage firmware through Intune and Windows Updates and enable and disable hardware components through Surface Enterprise Management Mode (SEMM) and Device Firmware Configuration Interface (DFCI), so you can reduce risk at the firmware level.

While traditional UEFI implementations require physical configuration, DFCI securely enables zero-touch remote configuration of these settings and is built on Intune and authorized by Windows Autopilot. DFCI provides a straightforward way to easily configure hardware settings, such as disabling cameras and microphones, or disabling boot to USB on Surface devices. These settings cannot be bypassed by a physical attacker or from the Operating System-level because the checks happen even before the system boots an OS.

Operating System

Surface enables Windows 11 security features from the factory. Virtualization-based security (VBS) and Hypervisor Code Integrity (HVCI) help provide better protection against common and sophisticated malware by performing sensitive security operations in an isolated environment. BitLocker encryption protects your business information even on lost or stolen devices.

Microsoft Surface

Hardware
TPM 2.0
Windows Hello
Pluton technology
Removable SSD

Firmware
Microsoft UEFI*
Surface
Enterprise Mgmt.
Mode (SEMM)*
Intune (DFCI)*

OS
Advanced Windows Security Features (HVCI/VBS)
Secure Boot enabled by default
BitLocker
Secured-core PC²
through firmware (FASR)*

Cloud
Microsoft Defender
Windows Update
Conditional Access
Surface
Management
Portal*
MDM UEFI
Management*

ATTACKS

*Exclusive to Surface

Advanced deployment and management

IT teams need a modern approach to device management, one that seamlessly integrates all components, from the chip to the cloud. Surface has been designed with built-in support for simplified modern management of the entire device lifecycle.

Zero-Touch Deployment

Windows Autopilot automates all stages of the device lifecycle, both for IT and users. A Surface device can go straight from Microsoft to the end user completely configured. Surface devices are purpose-built for zero-touch deployment and optimized to provide the most straightforward, friction-free, and powerful interoperability with the diverse collection of Microsoft 365* capabilities.

> **No matter where our colleagues are in the world, they receive their device— delivered to their home if they prefer—turn it on, and follow a brief installation process. Everything else runs in the background, including our standardized Kulzer configuration.**
>
> *– Thomas Gessler: CIO, Kulzer GmbH*
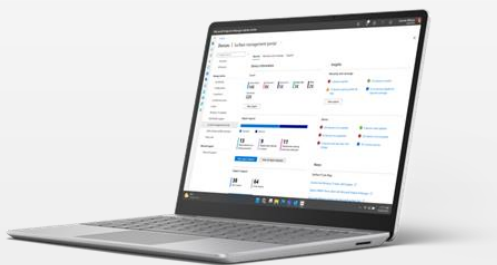
Surface Laptop Go 3 with
Surface Management Portal

Management during use and retirement

Every Surface component, from firmware to Windows 11 policy settings, can be managed by Microsoft Intune* and updated via Windows Update for Business. Using Intune, IT can also wipe a device clean, whether it was lost or stolen or assigned to a different user. After a wipe, the device is reset to the out-of-box experience, at which point proper credentials are once more required for setup if the device is redeployed. Surface Management Portal is a new centralized solution for IT admins to self-serve, manage, and monitor Surface devices at scale in Intune.

In addition, Surface includes purpose-built tools for diagnostics and tuning that can automatically fix issues, assist with troubleshooting, and optimize functionality from brightness control to battery usage. The Surface Diagnostic Toolkit (SDT) for Business, for example, enables IT administrators to quickly investigate, troubleshoot, and resolve hardware, software, and firmware issues with Surface devices — across the network.

Surface also integrates into the Microsoft 365 security stack to detect vulnerabilities across the globe and automatically protect devices—even while they are asleep. Surface devices implement a Modern Standby low-power state that allows devices to appear asleep, drawing very little power, but also listening for updates via Windows Update for Business and application data streams like email. This enables a Surface on battery power to achieve a long standby battery life while also staying up-to-date on application data, and automatic pushes of security updates even down to the UEFI.

Surface and sustainability

At Microsoft, we believe the needs of our customers can co-exist with the needs of our planet. Microsoft has a commitment to be carbon negative, water positive, and zero waste by 2030[1]. We know that Surface plays a key role in helping the company achieve these goals, which is why we have clear strategies and goals for embedding sustainability within our devices and our supply chain, making sustainability a core part of our product promise and design language. We know that we have less than a decade to make a difference by 2030, and that's why at Surface, we aim to create devices that reduce carbon impact across their lifecycles, reduce waste, and are built with integrity.

For example, we designed our Surface Laptop Studio to allow for "stamping," a lower-waste manufacturing technique that reduced our aluminum scrap rate for the product's base by at least 25%, a key contributor to the overall product carbon reduction of 30% versus its predecessor for Surface Book 3 13".[1] All Surface laptop and tablet devices are ENERGY STAR certified[3] with embedded efficiencies, getting us one step closer towards the 2030 target of being carbon negative. By 2025, our goal is for our packaging to contain zero single-use plastics, and by 2030 it will be 100% recyclable. Our Ocean Plastic Mouse and new Surface Slim Pen are the first of our products to ship in 100% recyclable and plastic-free packaging.[1]

Visit Surface sustainability to learn more.

To increase transparency for customers and stakeholders, we publish Life Cycle Assessment results that are contained in our Eco Profiles, along with information about the product's material composition, energy consumption, packaging, ecolabels, product recycling, and other environmental attributes. We also developed a new tool for our Commercial customers called the Surface Emissions Estimator.[2] The tool makes it easier for Commercial customers to understand the estimated emissions associated with a Surface device or accessories based on use and locations.

> **By 2030, we will divert at least 90 percent of the solid waste headed to landfills and incineration from our campuses and datacenters, manufacture 100 percent recyclable Surface devices, use 100 percent recyclable packaging (in Organization for Economic Cooperation and Development, OECD, countries), and achieve, at a minimum, 75 percent diversion of construction and demolition waste for all projects.**
>
> *- Brad Smith, President and Vice Chair, Microsoft*

Surface Laptop Studio in transition to Stage Mode with Black Surface Slim Pen 2

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[1] 2021 Environmental Sustainability Report | Microsoft CSR
[2] The Microsoft Surface Emissions Estimator is only available in certain markets and only applies to Surface devices currently for sale. Contact your Surface seller for more details.
[3] Download Eco Profiles for Surface devices.

Modern device strategy for Manufacturers

By choosing Surface, manufacturers can implement a modern device strategy for all employees. Surface is designed for mobile and flexible work and built for teams. With a variety of devices and price points that meet the needs of a diverse workforce, your organization can standardize procurement and provide a premium experience to all employees through thoughtfully designed and versatile devices, industry-leading security and remote management controls, and a commitment to sustainable business practices.

> **[During the pandemic] We used Microsoft technology [Surface and Microsoft Teams] to come up with quick, creative solutions that enabled us to keep product moving out the door without the risk of exposing our workforce to illness.**
>
> *- Mike Abram: Chief Information Officer, Westinghouse Electric Company*

Visit Surface for Manufacturing to identify which Surface devices are best for your employees.