Sample Financial Services Company Report

IT Assessment Report September 26, 2018

Prepared For: Japan Tester 10 Bean Test Co. Ltd



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This is a sample report, intentionally made to be long and full of many pages of advisory content. Hope you enjoy it!



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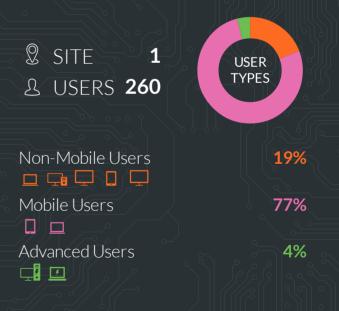
Sample Financial Services Company Report

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As an established financial services company, your IT must navigate change management, support users, maintain infrastructure and strengthen security. This report will help you navigate upcoming priorities and make the right device choices for your workforce.

YOUR IT USER PROFILE



Improving Customer Experiences and Security

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93% [of financial services industry firms] agree or strongly agree that the objective of their digital strategy is to improve customer experience and engagement.

2016 Digital Business Global Executive Study

Preparing for Faster Customer Response



In financial services – where disruptive innovation and competition can come from almost anywhere – enabling your workforce with modern PCs can accelerate your response to customers and help to reduce risk exposure.

Respond Faster to Customers

Machine learning and artificial intelligence (AI) are making big strides in the digital transformation of financial institutions to become more customercentric. According to IDC, 2018 will be the year when many wealth management and capital markets firms will leverage AI to manage funds. The advanced analytics needed for machine learning or AI to be effective puts a high demand on storage, network and PC performance.

On Cyber Risk Mitigation

Business-grade PCs such as Lenovo's ThinkPad and ThinkCentre range of devices include hardwarebased multi-factor authentication (MFA) features that are almost impossible to hack. This ensures that only the users with the right access levels can operate the PC. MFA requires two or more layers of authentication, which can include any combination of PIN number, password, phone proximity, location or a biometric factor such as fingerprint or facial recognition.

Equipping the Future of Financial Services

We believe that IT departments at financial services organizations can relieve the following pain points by modernizing workforce PCs:

- Regulatory compliance RegTech solutions are mostly cloud based and are delivered as software-as-a-service (SaaS) solutions to help businesses minimize risk and comply with regulations efficiently and less expensively. The cornerstone of every RegTech SaaS company is data security. For Financial services as their business depends entirely on their client's data, the need to safeguard sensitive information is mandatory. One of the most direct routes to improving this risk posture is to give employees business-grade PCs built to protect against security attacks.
- Accelerating technology adoption Cloud is underpinning most of the next generation technologies. Endpoint devices are an important aspect of the Cloud ecosystem. Most organizations today are realizing the importance of providing endpoint devices specific to the job requirements. But beyond choosing the right device for the job, the endpoint device strategy is critical because it also decides the security readiness of your organization.



Your priorities & issues

Respond to Customers Faster

As financial services firms pursue new digital tools, workers will need powerful business-grade devices. Audit user job roles to determine which devices optimize their workflow. Some users need faster access to customer information, some need processing power for big data analysis and visualization, and others need high-capacity storage. Learn more on page 30



HOW CAN WE HELP...

- 1 Lenovo's range of mobile and desktop workstations provide the power and flexibility to run advanced big data and financial analysis workflows, with large memory arrays, multi-processor options and vast storage capacity.
- 2 Our mobile device portfolio comes with hardware-enhanced identity protection such as Intel® Authenticate, and Windows 10 Pro security features like Windows Information Protection and BitLocker to protect devices and data.
- 3 Lenovo's commercial-grade devices offer powerful dual-band WiFi, WWAN (4G) connectivity and high-quality cameras and microphones for conferencing and presenting.

Securing Endpoints to Protect The Organization

Financial services organizations will always be high-value targets for cyber-attacks. As hacking methods grow more sophisticated with social engineering and brute-force cracking, endpoint device security and user education become even more important. Equip your workforce with devices that address two core pillars of security: user access control and data protection. Learn more on page 31



- 1 Business-grade PCs such as Lenovo's ThinkPad and ThinkCentre range of devices include hardware-based multi-factor authentication (MFA) features that are almost impossible to hack.
- 2 If a device is lost or stolen, they also need physical protection. Smart USB protection blocks the data transfer capability of the USB port. A chassis lock can deter theft of components and data.
- 3
- Lenovo systems with Intel® Remote Secure Erase offer a secure, cost-effective way to protect data and sanitize devices in just seconds.

Lenovo

Your priorities & issues

The Challenges of Regulatory Compliance

Because most financial transactions are digital, much of the responsibility to monitor compliance falls on IT. The emergence of RegTech may also be straining your current resources, as many RegTech applications are extremely data-intensive. As the regulatory environment grows more complex, endpoint devices will play a greater role in compliance. Learn more on page 32



HOW CAN WE HELP...

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- If a device is lost or stolen, they also need physical protection. Smart USB protection blocks the data transfer capability of the USB port. A chassis lock can deter theft of components and data.
- 3 Lenovo systems with Intel® Remote Secure Erase offer a secure, cost-effective way to protect data and sanitize devices in just seconds.

Accelerating Technology Adoption

Financial technology (FinTech) can help you become more efficient and get closer to customers. All FinTech is essentially based on two building blocks; Cloud and Big Data. Cloud systems require your endpoint devices to be secure, preventing unauthorized access or misuse of your systems. Big Data requires adequate compute power to process and endpoint devices for analysts to effectively visualize and make sense of the data. Learn more on page 33

HOW CAN WE HELP... Our extensive device port assessment of WiFi network

- Our extensive device portfolio has hardened security features from data encryption, to user authentication and real-time threat assessment of WiFi networks.
- 2 Lenovo's range of workstations provide the power and flexibility to run advanced big data and financial analysis workflows.
- 3 Lenovo has a range of displays optimized for analysts working with large amounts of data, with high contrast ratio and colour gamut.



Your priorities & issues

Improve Performance & Limit Risk with Less Preloaded Software

Unlike software that is essential to productivity and security, unnecessary preloaded apps can get in the way of a smooth user experience. For financial services organization, this can cause issues on devices related to security, storage and performance. Devices that come with fewer preloaded apps can benefit your IT team and your organization. Learn more on page 34



HOW CAN WE HELP...

- In the past four years Lenovo has removed nearly all preloaded applications from business devices, leaving just 3 to 6 high-value items plus Windows 10 standard apps from Microsoft.
- Those remaining apps provide essential functionality. For example, Lenovo Vantage helps users easily customize settings, migrate or transfer files, update software and drivers, run diagnostics and more.

Replace BYOD with a Choice of Company-Owned Devices

With a Bring Your Own Device (BYOD) program in place you have less control over company data. As a financial services organization your devices are at greater risk, especially with the rise of ransomware attacks. So when it comes to PCs, offer employees a choice of company-owned devices instead of a BYOD program. In this way, you can select devices with common productivity standards and enhanced security features. Learn more on page 35



- 1 Offer employees more choice with our wide range of devices. Each has the support services and security features needed for financial services. For example, access prioritized tech support, and the latest data security technologies.
- 2 Simplify PC deployment with Advanced Deployment Services. Whether joining a domain, installing software or migrating data, this service enables end users to setup and customize devices themselves, reducing the burden on IT.



Your priorities & issues

Developing your Cloud infrastructure

In financial services, data protection and data access are under constant scrutiny. As one of the most targeted industries for cyber-attacks, the threat is very real. We recommend an IMS strategy (Identify, Match and Secure), as you mature your Cloud infrastructure: (1) Identify your business goals, (2) Match with the right Cloud infrastructure, (3) Secure endpoint devices. Learn more on page 36



HOW CAN WE HELP...

Lenovo can help secure endpoint devices that are the gateways to your cloud infrastructure. Our wide portfolio includes technologies such as multi-factor authentication (MFA) with fingerprint readers and infra-red cameras; and full-disk encryption protecting your data if a device is lost or stolen with cloud credentials stored onboard.

Get More Out of Your Microsoft 365 Deployment

Cloud-based productivity suites such as Microsoft 365 enable financial industry IT departments to protect against security threats, simplify endpoint manageability and enhance collaboration across teams. It is important to ensure your endpoint devices are properly equipped to optimize these features. Learn more on page 37



- 1 Many of our PCs and tablets have the latest encryption chips integrated, supporting use of BitLocker. This Windows 10 Pro feature enables users to encrypt all data stored on the device.
- 2 Upgrade your PC web conferencing experience with Office 365 and by sourcing Lenovo devices with 720p or 1080p web cams, and dual array mics with noise-reduction technology.
- 3 Leverage Microsoft 365's "inking" features to dramatically improve collaboration, creativity and communication, using Lenovo touchscreen devices with digital pens.



Your priorities & issues

Building a Device Choice Program

Your planned program, where employees are offered a choice of company-owned devices, can improve end user satisfaction and flexibility, at the same time ensuring data and device security. As you prepare to implement this program, security, vendor selection and user satisfaction will be high priorities. Learn more on page 38



HOW CAN WE HELP...

- Our extensive portfolio of devices have the hardened security features that financial services firms need from data encryption, to user authentication and real-time threat assessment of public WiFi networks.
- 2 We can help you recycle old devices, ensuring that data is properly destroyed, assets are disposed of in an environmentally responsible way, and providing you with cash to reduce the overall cost of new device acquisition.

Protecting Financial Data in an Era of Advanced Threats

Two major factors that contribute to IT's need to shore up endpoint security are cyber attacks and regulatory compliance. Financial services organizations lead all industries in malware attacks. In both situations, IT teams can better protect financial data by equipping end users with business-grade Lenovo PCs designed with chip-level hardened security. Learn more on page 39



- 1 Many of our devices have multiple security features to protect user identities, devices and the data on them. Ask us today about our multi-factor authentication, encryption and other security features.
- 2 Our range of screen privacy filters fit to new and legacy device screens, helping prevent others from seeing confidential information.
- Lenovo's Online Data Backup (OLDB) solution enables enterprises to securely store confidential information in the cloud with a simple, automatic backup process.

Lenovo

Your priorities & issues

Device Management is No Longer Optional

With the growing number of mobile devices available, there's no doubt there's increased security exposure for financial services organizations, which are already subject to higher data security standards than most sectors. Device management allows IT to remotely manage company and employee-owned devices and apps, increasing the protection of your network and systems. Learn more on page 40



HOW CAN WE HELP...

- Some ThinkPad and ThinkCentre devices have Intel® Active Management Technology, which lets IT manage devices remotely even if they are shut down, or if the OS image is corrupt.
- Leverage our partnership with MobileIron to move to an Enterprise Mobility Management solution that incorporates identity, context and privacy enforcement into mobile device management.

Boost Digital Transformation Initiatives with the Right Devices

Digital technologies are helping financial organizations adapt their workflow so they can respond to customers faster. Empowering employees with the right tools to handle new financial industry technologies - from artificial intelligence to cognitive analytics - will be crucial to success. Continue your transformation journey by determining the appropriate devices for different users. Learn more on page 41



- Smart endpoint devices that are adaptable, connected and productive. From convertible devices that are both tablet and laptop, to dual-band WiFi and 4G data connectivity, to the legendary ThinkPad productivity keyboard our device portfolio will help your teams work effectively from anywhere.
- 2 A range of devices with hardware-enhanced identity protection such as Intel® Authenticate, and Windows 10 Pro security features like Windows Information Protection and BitLocker to protect devices and data.

10 **Test Co. Ltd**



Your priorities & issues

Moving to Windows 10 Pro for Greater Security and Manageability

Migrating to Windows 10 Pro holds more urgency in the financial industry compared to other sectors; its stronger security posture helps IT with data security and regulatory compliance. New devices with Windows 10 Pro unlock significant productivity benefits and an intuitive OS experience for users familiar with Windows 7 or 8. Learn more on page 42



HOW CAN WE HELP...

- 1 Our devices leverage and harden the Windows 10 security architecture with features such as Match On Chip fingerprint reader, Infrared (IR) cameras for facial recognition, TPM chips for encryption, WiFi security, and more.
- 2 Compared with a 5-year-old PC, a modern Windows 10 device is 65% faster at multitasking. When it comes to refreshing your existing devices, Lenovo offers an unrivalled portfolio.

Move Beyond Passwords to Multi-Factor Authentication

Financial services firms that are not yet using multi-factor authentication (MFA) may be exposing their data to greater risk. Not only is MFA more secure, it also provides a better user experience because employees do not need to remember a password to access devices. Learn more on page 43



HOW CAN WE HELP...

- 1 Lenovo has a range of devices with integrated MFA features like fingerprint readers and IR cameras. By authenticating users through several means, you are making your organization much more secure, and reducing reliance on complex passwords.
- 2 Lenovo's Match on Chip Fingerprint Reader, available on many ThinkPads, stores biometric credentials on a separate chip, making it harder for malicious code to capture authentication data.



ThinkPad Glance utilizes face and eye-tracking to automatically lock and unlock a device based on the presence of the user.

Lenovo

Your priorities & issues

Optimizing Energy Efficiency in End-User Devices

Power efficiency initiatives can help financial services firms reduce energy costs and achieve sustainability goals. Computers tend to use the most energy of all office equipment, and inefficiencies can impact device performance through overheating and lower battery life. Learn more on page 44



HOW CAN WE HELP...

- We have a range of workstations with 80 PLUS Gold and Platinum power supply ratings, ensuring financial analysts and other advanced users have the performance they need while improving power efficiency.
- 2 ENERGY STAR® certified ThinkVision monitors and ThinkCentre AIO models are, on average, 25% more energy efficient than those without the certification.
- 3 Consider Lenovo devices that use solid-state drives (SSDs) for storage. SSDs help cut energy costs on desktops and provide longer battery life on laptops.

Flexible Computing for Modern Financial Industry Workspaces

Security and compliance should be at the forefront of any workspace optimization initiative by financial firms. Even if security and compliance limit financial workers' mobility options, modern devices and accessories now exist to optimize workspaces while promoting flexibility. Learn more on page 45



- 1 Micro desktops and thin clients are common in customer-facing financial environments. For example, Lenovo's ThinkCentre Tiny has a footprint smaller than a laptop for mounting under a desk or placing behind a monitor.
- ² "Hot-desking" is gaining popularity in the financial industry—where 48% of assigned workspaces are unoccupied throughout a day—to increase utilization of existing space. In a hot-desking scenario, Lenovo's docking solutions allow several users to connect their laptop and share the same desk and peripherals at different times.



Your priorities & issues

Develop a Blended Tech Support Strategy for Financial Services

Financial services workers demand a lot from IT. To respond to customers faster, users want more powerful hardware. Meanwhile, a dangerous cyber-attack landscape creates a greater need for data security and regulatory compliance assistance. It can be challenging for financial IT teams to expand the scope of tech support services to be both proactive and responsive to all your end user needs. Learn more on page 46



HOW CAN WE HELP...

- 1 Lenovo's Premier Support service offers direct access to Advanced Level 2 engineers, bypassing basic troubleshooting. They can support a range of software applications and Lenovo hardware, freeing up your staff from routine support tasks, and at a price that's more affordable than outsourced IT.
- 2 With Lenovo's On-site Warranty service, if a problem can't be solved remotely, we will send a technician to your location to repair a device.

Improve Productivity with Web Conferencing & Smarter Tools

Most financial services organizations want to make it easier for employees and clients to meet anywhere, any time. To respond to customers faster, or train clients or employees online instead of onsite, web conferencing is now the norm for collaboration when participants aren't physically in the same place. Learn more on page 47



- 1 Look for device features that make meetings engaging and productive. Many Lenovo devices come with dual array microphones that improve audio clarity, and webcams that ensure visibility in a range of lighting environments.
- 2 Enhance the meeting room experience through smart solutions. ThinkSmart Hub 500, a Skype Room System device with audio and video connected, provides a one-button start every time.
 - Some Lenovo devices include a sliding cover over the webcam to address privacy concerns.



Your priorities & issues

Selecting the Right Docking Solution

Docking stations make it easier for employees working in financial firms to connect a notebook to external displays and peripherals, so that they can multitask across different applications. With many docking solutions available, look for docks that not only fulfill end user needs, but also simplify IT asset management. Learn more on page 48



HOW CAN WE HELP...

- Talk to us about your endpoint devices from the latest USB-C enabled devices to older notebooks, we can advise you on the best docking solution for them.
- 2 Our mechanical docks cater to a variety of user needs, whether connecting multiple displays to view several charts simultaneously or physical security for devices accessing sensitive information.
- Many Lenovo docks support PXE boot, Wake-on-LAN and MAC address pass-through, making remote IT asset management easy.

Office Ergonomics

With many employees spending long hours at a computer, providing a healthy environment is crucial for well-being and productivity. Many financial services organizations invest in ergonomic office chairs and larger displays to help mitigate common health risks like back pain and eye strain. However, there are other factors that can contribute to improved well-being. Learn more on page 49



- 1 Consider mounting displays on adjustable arms so that employees can better position them for comfortable viewing. The Lenovo Adjustable Height Arm is suitable for any VESA-compatible monitor or Lenovo all-in-one PC.
- 2 Most Lenovo devices have anti-glare screens, reducing reflective light so that users don't have to lean into the screen to see it more clearly. Similarly, Lenovo has a range of devices with high contrast ratio displays that appear clearer, whatever the surrounding light conditions.

Recommended for Non-Mobile Users

50 NON-MOBILE USERS

Whether they work primarily in an office or in a customer-facing environment, financial professionals prefer Lenovo because of the wide variety of devices in our portfolio. With a range of devices available at every level of performance, you can deliver an optimal user experience in any workspace.



- still more likely to use a desktop as their primary device
- 70% are not given a choice about the device they are issued at work..... but 1 in 3 would prefer their organization to give them some choice
- 1 in 3 use their devices for data analysis

Source: Lenovo workplace user research

ThinkPad X1 Tablet (3rd Gen)

Whether it's administration or a customer-facing rep - so many finance roles would benefit from this laptop / tablet combo, and not just because of the built-in security features like drive encryption and user authentication. The 13" touchscreen comes with a digital pen for taking notes, drawing or annotating docs. And it has both front (2MP) and world-facing (8MP) cameras.



Why We Recommend

- 1 The tactile feel of a ThinkPad keyboard in an ultra-slim design, with red trackpoint and 3-button clickpad. You can set the keyboard at 2 different angles for typing. Customers are saying this is the only 2in1 that feels like a laptop.
- 2 Has an 8th Gen Intel Core[™] processor and up to 1TB PCIe SSD; multitask productivity applications and cloud-based apps as you would on any laptop.
- **3** Optional touchscreen and optional digital pen which attaches to the side of the tablet, making it less likely to be lost.

Key Specifications

- up to 8th Gen Intel Core i7 processor
- 13.0"" QHD+ 3K (3000 x 2000) IPS multi-touch
- touchscreen and optional ThinkPad Pen Pro

$Recommended \ Accessory: Lenovo^{{}^{\rm M}} \ Kensington {}^{\rm R} \ MicroSaver {}^{\rm R} \ Cable \ Lock$

Cut-resistant cable lock to protect against device theft; 5ft/1.5m cable anchors to desk, table or any fixed structure

Tamper-resistant, disk-style lock provides near-impenetrable theft protection, but still allows users to pivot and rotate devices

Fits a wide range of devices and docking solutions based on the Kensington slot design. Dual head locks available to lock 2 devices to one cable



Recommended for Non-Mobile Users

ThinkPad T480/T580

Office-based users will get a major boost in productivity with this top-selling business laptop. From the ThinkPad keyboard and trackpoint famed for precise feedback and accurate typing - to the processor, storage and graphics technologies, everything about this laptop has been designed to help users work more efficiently.



Why We Recommend

- 1 With up to 1TB of storage space, and a Thunderbolt[™] 3 port for high-speed data transfer, users will never run out of space for storing financial reports, credit ratings and other important data that must be backed up offline.
- 2 Credit analysts work with sensitive financial information. The TPM chip keeps data encrypted and the optional fingerprint reader wards off any unauthorized attempts at accessing the device.
- **3** Supports web conferencing with integrated 720p HD webcam and dual array noise cancelling mics. ThinkShutter privacy cover enables the camera to be physically blocked.

Key Specifications

- up to 8th Gen Intel Core i7 processor
- 14.0"" screen, up to WQHD (2560x1440) / 15.6"" screen, up to 4K (3840x2160)
- optional touchscreen

Recommended Accessory: ThinkVision P27u

27" 4K (3840x2160) monitor with multi-color gamut (>99% Adobe RGB, 97% DCI-P3). Pre-calibrated with factory calibration reports provided



2x HDMI, 1x DisplayPort, 4x USB 3.0, 1x USB Type-C

Lift, Tilt, Pivot, Swivel stand for viewing comfort

ThinkCentre M910z

This 23.8" all-in-one computer has been designed for commercial use, with productivity, security and remote management features built in, plus easy servicing and upgradability. Features include a high-quality camera and mic array to enhance web conferencing, an antiglare screen coating, HDD and SSD storage technologies, and an onboard TPM chip to enable encryption of all sensitive financial and customer data which may be stored on the device.



Why We Recommend

- 1 Optional Intel Optane[™] memory accelerates the files and applications used most frequently; turning your employee's computing habits into productivity advantages. Frequently used applications will open faster, complex spreadsheets will be ready for editing more quickly.
- **2** The optional UltraFlex stand supports height adjustment, tilt and swivel, enabling greater comfort for users.
- **3** Configure this PC with a wide range of processor and storage options to suite your performance needs and budget.

Key Specifications

- up to 7th Gen Intel Core i7 processor
- 23.8"" screen, FHD (1920x1080)
- optional touchscreen

Recommended Accessory: Lenovo Stereo USB Headset

Over-the-head headphone with adjustable headband and boom arm with microphone

Optimized for VoIP applications like Skype and Lync with a 180-degree mic

Connects to your PC via USB port



Recommended for Non-Mobile Users

ThinkCentre M920q Tiny

A premium desktop PC that's no bigger than a book, yet packed with the performance, connectivity and remote management features every office needs. Because of its small size, there is great flexibility in how and where it can be used; for example, locate in meeting rooms to power large displays or mount under users' desks with the optional bracket.



Why We Recommend

- 1 6x USB ports ensure printers, scanners and other peripherals can be connected directly to the device. View budget plans, complex spreadsheets and accounting or trading software in 4K resolution across 3 displays.
- **2** Optional ThinkCentre Tiny Storage Unit connects to the side of the device, providing a DVD burner or secondary storage drive.
- **3** 96% smaller than a traditional desktop fits on or under a desk, mounted behind a monitor or on a wall.

Key Specifications

- up to 8th Gen Intel Core i7 processor
- Intel HD Graphics
- up to 32GB DDR4-2400 memory

Recommended Accessory: ThinkCentre Tiny Storage Unit

Made exclusively for ThinkCentre Tiny, this expansion box can be configured with a DVD burner, DVD ROM or 2nd HDD

Must be attached to a ThinkCentre Tiny VESA Mount (sold seperately) alongside a ThinkCentre Tiny PC



ThinkSmart Hub 500

Boost productivity with a solution that replaces conference phones and gets meetings started quickly. When users enter the room, it will detect their presence, wake up connected displays and show their meeting on the built-in touchscreen. Press a button to join and start sharing content using the Skype or Lync app on their devices – no wires or dongles required. Remote participants without Skype can be dialled in directly from the on-screen keypad.



Why We Recommend

- 1 Deploy Skype Room Systems on-premise, or cloud-based using Office 365 Enterprise. Once Skype infrastructure in place, setting up this device is easy - simply create Skype user credentials for the Hub and enter them into the device.
- 2 Connect 1 or 2 large displays to show content and video feeds from remote participants. Connect optional cameras via USB. The cable management bay secures everything in place, preventing removal.
- **3** 2 omni-directional mics and dual 4W Dolby® Audio speakers ensure everyone, whether remote or in the room, can be heard.

Key Specifications

- 360° rotatable 11.6" touchscreen
- 2 omni-directional mics and dual 4W speakers
- 2x HDMI out, 1x HDMI in, 1x ethernet

Recommended Accessory: Logitech MeetUp

A premier Conference Cam with up to 170° field-of-view and Ultra HD 4K optics

 ${\sf MeetUp}{}^{\prime}{\sf s}$ integrated audio and 3 beamforming mics optimized for huddle room acoustics

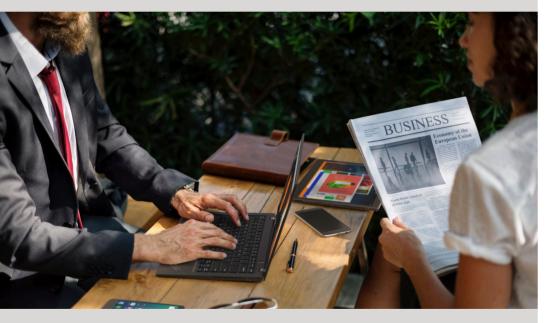


Compact design minimizes cable clutter

Recommended for Mobile Users

200 MOBILE USERS

Financial professionals who often work remotely or travel for client meetings and industry events prefer Lenovo PCs to stay connected and productive on the go. Our decades of experience informs how we engineer the ideal balance of hardened security, powerful performance, long battery life and sleek, lightweight designs.



- typically 1 in 5 users frequently travel for work
- 76% use a notebook or 2in1 as their primary device
- Compared with the average user, they are 50% more likely to desire a touchscreen device
- 60% regularly work in coffee shops

Source: Lenovo workplace user research

ThinkPad X1 Tablet (3rd Gen)

Ideal for finance professionals because of its security features like onboard data encryption and optional fingerprint reader, this is an ultra-portable laptop and tablet in one. The thin keyboard connects to the screen with 2 height modes for typing in comfort. The 13" touchscreen comes with a digital pen for taking notes or annotating docs.



Why We Recommend

- 1 Has an 8th Gen Intel Core[™] processor and up to 1TB PCIe SSD; multitask productivity applications and cloud-based apps as you would on any laptop.
- 2 13" QHD+ screen with adjustable angle for working or watching video, high contrast ratio to improve visibility in any light, all strengthened by Corning Gorilla® Glass.
- **3** Optional touchscreen and optional digital pen which attaches to the side of the tablet, making it less likely to be lost.

Key Specifications

- up to 8th Gen Intel Core i7 processor
- 13.0"" QHD+ 3K (3000 x 2000) IPS multi-touch
- touchscreen and optional ThinkPad Pen Pro

$Recommended \ Accessory: Lenovo^{{}^{\rm M}} \ Kensington \\ {}^{\rm R} \ MicroSaver \\ {}^{\rm R} \ Cable \ Lock$

Cut-resistant cable lock to protect against device theft; 5ft/1.5m cable anchors to desk, table or any fixed structure

Tamper-resistant, disk-style lock provides near-impenetrable theft protection, but still allows users to pivot and rotate devices

Fits a wide range of devices and docking solutions based on the Kensington slot design. Dual head locks available to lock 2 devices to one cable



Recommended for Mobile Users

ThinkPad X380 Yoga

This flexible notebook features a 360° hinge, so it can be used as a laptop or a tablet, depending on the needs of your mobile users. All-day battery life will keep them going through long workdays and airport layovers, while several security features to help safeguard sensitive financial data.



Why We Recommend

- 1 The 360° hinge enables this device to be used in four modes tablet, laptop, tent, and stand. This versatility ensures that wherever financial professionals are working from, it won't impede productivity.
- **2** With up to 12.5 hours on a single charge, users can respond to sudden market changes or urgent client requests even on the move.
- **3** This convertible laptop offers the perfect level of mobility, weighing just 1.43kg (3.17lbs), and making work on the go effortless for mobile users.

Key Specifications

- up to 8th Gen Intel Core i7 processor
- 13.3"" screen, FHD (1920x1080)
- touchscreen and dockable ThinkPad Pen Pro

Recommended Accessory: ThinkPad Active Backpack

Extremely lightweight 0.46kg design

Stretch side pockets for water bottle and other gear

Protective compartment for computer storage, air-mesh back panel for comfort



Lenovo Tablet 10

A Windows 10 tablet that's built for business use, with NFC support, USB-C docking, remote management, security and productivity features. Attach the optional keyboard to the 10.1" tablet to create a basic notebook. Use the optional digital pen for taking notes, signing docs, or sketching.



Why We Recommend

- 1 IT admins and users can easily activate the onboard TPM chip to protect financial data from unauthorized access. It can be used with Windows BitLocker to encrypt all data on the device.
- 2 Stay connected even where WiFi may not be available; the optional 4G WWAN module uses the cellular network for data connectivity.
- **3** Minimal preloaded applications mean maximum battery life and responsiveness for users, and faster deployment for IT admins.

Key Specifications

- up to 6th Gen Intel Pentium N5000 processor
- 10.1" screen, up to WUXGA (1920x1200)
- touchscreen & integrated Active Pen

Recommended Accessory: ThinkPad USB-C Dock

Connects to PC via USB-C cable and provides power

1x USB-C, 2xUSB2.0, 3xUSB3.0 ports (including 1x always-on for charging devices)

2x DisplayPort 1.4 (1x VGA also available). Supports 1x display at 4K or 2x FHD displays



Recommended for Mobile Users

ThinkPad L380 Yoga

For mobile employees in the finance industry this convertible includes a security feature to encrypt data on the device in the event it is lost or stolen. The touchscreen and onboard digital pen offer greater flexibility than a regular laptop. Battery life is up to 12.5hrs, and it can be quickly recharged to 80% capacity in just one hour.



Why We Recommend

- **1** The 360° hinge enables 4 user modes laptop for productivity, tablet for capturing notes or reading documents, tent and stand for making 1:1 presentations, discussing ideas with colleagues or reviewing video.
- 2 Designed to survive common mishaps, including spills and drops; MIL-SPEC testing for durability, and featuring a spill-proof keyboard that channels liquids away from sensitive electronic components.
- **3** Users can rely on this notebook to handle extensive multitasking of web-based applications and popular software titles.

Key Specifications

- up to 8th Gen Intel Core i7 processor
- 13.3"" screen, up to FHD (1920x1080)
- touchscreen and dockable ThinkPad Pen Pro

Recommended Accessory: Lenovo USB-C to VGA Adapter

Turns a USB-C port into a VGA port for connecting to a wide variety of displays, projectors or TVs with VGA input

Mirror your primary display or extend your display to double your workspace



Plug and play with no external power or extra drivers required

ThinkPad E480/E580

A mobility solution that delivers the quality for which ThinkPad is renowned, at a price that's optimized for almost any budget. With optional AMD Radeon[™] graphics, 8th Gen Intel Core[™] processors and 14" or 15.6" displays, it's fully equipped to keep users productive when working remotely, and includes a TPM solution to enable encryption of any sensitive financial information stored on the device



- **1** Poor WiFi reception is a common pain point of mobile travellers using public hotspots. This device features dual-band optimized WiFi antennae which will improve range and performance in certain conditions.
- 2 Active Protection System detects sudden movements and stops the hard drive spinning until the device has stabilized, preventing data errors caused by the bumps and shocks of mobile use.
- **3** Enhance productivity and collaboration with the integrated HD720p HD webcam and dual array microphones for audio and video conferencing.

Key Specifications

- up to 8th Gen Intel Core i7 processor
- 14.0"" / 15.6"" screen, FHD (1920x1080)
- Intel HD Graphics / optional AMD Radeon RX 550 2GB

Recommended Accessory: ThinkPad USB 3.0 Pro Dock

Connects to PC via USB cable

 $5 \mathrm{x}$ USB ports (3x USB3.0 including 1x always-on for charging mobile devices, 2x USB2.0)

1x DisplayPort, 1x DVI (supports up to 2 displays at 2048x1152 or 1x display at 3840x2160)



Recommended for Advanced Users

10 ADVANCED USERS

Financial services professionals who put high demands on their hardware and software prefer Lenovo PCs because they're thoroughly engineered to optimize productivity and efficiency. Traders, financial analysts and other workers who depend on technology to inform decision-making need the performance, reliability and quality for which Lenovo is known.



- 1 in 3 use their devices for graphic design
- 20% use 2+ monitors, but twice as many believe it would make their work more efficient if they did
- 1 in 3 claim that colleagues ask them for help with their devices and SW only half are currently happy with the devices they have available at work

Source: Lenovo workplace user research

ThinkPad P52

Setting a new performance standard for mobile workstations, this 15.6" device can be configured with a 6-core Intel® Xeon® E processor and the VR-ready NVIDIA Quadro® P3200 graphics card. Install up to 64GB of ECC memory, protecting high-value financial data from memory errors. For financial industry professionals multi-tasking applications, it supports direct connection to multiple displays. There's optional 4G WWAN connectivity too, for use at locations where WiFi may not be available.

Why We Recommend

- 1 Productivity is assured with the legendary ThinkPad keyboard for superior comfort and typing accuracy, dedicated number keypad and backlit keys. Connect to peripherals quickly when at a desk using the new side docking connector compatible with Lenovo docking solutions.
- **2** High contrast ratio screen is ideal for data visualization. Multicore processor options enable users to handle complex spreadsheets and statistical software with ease.
- **3** Supports up to 4 independent displays enabling more comfortable multi-tasking or specialized use cases.

Key Specifications

- up to 8th Gen Intel Xeon processor
- 15.1"" screen, up to 4K (3840x2160)
- up to NVIDIA Quadro Pascal GPUs, up to 3000 for VR

Recommended Accessory: ThinkPad Ultra Docking Station

Side-mounted mechanical docking connection provides rapid charging power. Security Lock secures device to your desk with a single key. Supports IT network features (e.g. vPro, PXE boot, Wake-On LAN)

2x USB-C, 4x USB3.1 ports (including 1x always-on) 2x DisplayPort 1.4, 1x HDMI 2.0, 1x VGA



Recommended for Advanced Users

ThinkStation P720

A dual-processor workstation for financial modelling or trading. Supporting up to 26 processing cores and 384GB of ECC memory, entire data models can be loaded into RAM for faster processing. Three PCIe x16 slots support the most powerful graphics cards, still with space for an NVIDIA NVS card to support 8monitor arrays. Patented Tri-Channel cooling directs airflow over key components, reducing the need for additional fans which increase the risk of system failures.



Why We Recommend

- **1** Supports up to 12 storage drives and has RAID configurations to optimize performance and provide redundancy. If using high-end processors for complex financial modelling, install up to 9x M.2 PCIe SSD storage modules.
- **2** Optimized to reduce power consumption, with Energy Star®, GreenGuard and EPEAT® Gold certifications. Power supply is 80 PLUS Platinum qualified.
- **3** Minimal preloaded applications mean a more responsive device for users, and faster deployment for IT admins.

Key Specifications

- up to 2x 150W Intel Xeon Scalable processors
- up to 3x graphics and GPU computing adapters
- up to 384GB DDR4-2666 ECC memory

Recommended Accessory: Lenovo Professional Wireless Keyboard & Mouse Combo

Wireless keyboard & mouse combo with reliable 2.4 GHz wireless connection

Slim keyboard & number pad with noise-supression design, dedicated media controls & adjustable tilt legs



Mouse has 5-button design for both left & right hand comfort, and 4 way scrolling through spreadsheets & docs

ThinkPad P52s

This lightweight mobile workstation combines ThinkPad productivity features with professional NVIDIA Quadro® graphics. It features the latest 8th Gen Intel® Core™ processors and a 15.6" 4K or FHD display. Financial industry professionals who compute complex data on the move, can keep this device powered for up to 26hrs on a single charge using the secondary battery combo. And with mobility comes connectivity – optional 4G WWAN assures internet access through a cellular network.



Why We Recommend

- 1 Advanced users like data analysts and financial brokers may connect to multiple displays and storage devices; this workstation includes the new side-docking connector opening up access to Lenovo's extensive range of docking solutions.
- **2** Match-on-fingerprint reader enhances security and avoids the frustration of typing passwords. Optional Smart Card Reader. Optional Infra-Red camera supporting facial authentication.
- **3** Integrated 720p HD webcam and dual array mics for web conferencing. Privacy cover enables the camera to be physically blocked.

Key Specifications

- up to 8th Gen Intel Core i7 processor
- 15.6"" screen, up to 4K (3840x2160), optional touchscreen
- NVIDIA Quadro P500

$Recommended \ {\it Accessory: ThinkPad Thunderbolt 3 Workstation \ Dock}$

Connects to workstation via Thunderbolt 3 cable and provides up to 230W of power $% \left(\mathcal{A}^{\prime}\right) =0$

5x USB3.1 (1x always-on for charging mobile devices), front-facing Thunderbolt 3 port for 40Gbps data transfer

 $2 \mathrm{x}$ DisplayPort, 1x HDMI, 1x VGA - connects up to 2x 4K displays or 3x FHD displays



Recommended for Advanced Users

ThinkStation P520c

Compared with entry-level workstations, this device is more powerful and has a bigger memory capacity to support financial analytical workloads. The cooling system supports 18-core Intel Xeon® W processors and dual NVIDIA Quadro® graphics cards using only 3 fans, which means greater reliability with less moving parts that could fail. Up to 6 storage devices are supported, which can be RAID configured to improve performance and redundancy in the event of a drive failure.



Why We Recommend

- **1** Lenovo Performance Tuner enables users to fine-tune power management, BIOS, processor priority, graphics features and more. Save settings in software-specific profiles or use the predefined profiles created by our experts for popular applications.
- **2** This device has a reduced footprint compared with a typical desktop workstation, saving desk or floor space.
- **3** Handle statistical software, big data analysis and much more, thanks to multicore processor options, ulta-fast storage configurations and error-free ECC memory.

Key Specifications

- up to 140W Intel Xeon W processor
- up to 1x NVIDIA Quadro P5000 + 1x Quadro P2000, or up to 2x Quadro P4000
- up to 128GB DDR4-2666 ECC memory

Recommended Accessory: ThinkVision P32u

31.5" 4K (3840x2160) monitor with multi-color gamut (>99% Adobe RGB, 97% DCI-P3). Pre-calibrated with factory calibration reports provided

2x ThunderBolt 3 in/out supporting daisy chain connection to a 2nd 4K display, 2x HDMI, 4x USB



Lift, Tilt, Pivot, Swivel stand for viewing comfort

ThinkStation P330 Tiny

The world's smallest workstation – a micro device with proprietary cooling system and miniaturization technologies. It can support financial professionals juggling complex spreadsheets, and other data-intensive applications. Packed inside is an 8th Gen Intel Core[™] processor, optional NVIDIA Quadro® graphics and up to 2TB of high-speed storage via 2x M.2 PCIe SSD modules. Not just a desktop workstation, this is also an



ideal compute edge device, enabling IoT solutions and integrations into other OEM equipment.

Why We Recommend

- 1 Optional accessories include: ThinkCentre Tiny Storage Unit which connects to the side of the device, providing a DVD burner or secondary storage drive. Under Desk Mount Bracket enabling secure mounting under a desk, worktop, or integration into other equipment.
- **2** Supports up to 6 independent displays enabling more comfortable multi-tasking or specialized use cases.
- **3** An incredible 98% smaller than most workstations, fits on or under a desk, mounted behind a monitor or on a wall.

Key Specifications

- up to 8th Gen Intel Core i7 processor
- up to NVIDIA Quadro® P1000
- up to 32GB DDR4-2666 memory

Recommended Accessory: ThinkCentre Tiny Storage Unit

Made exclusively for ThinkCentre Tiny, this expansion box can be configured with a DVD burner, DVD ROM or 2nd HDD

Must be attached to a ThinkCentre Tiny VESA Mount (sold seperately) alongside a ThinkCentre Tiny PC



Lenovo

Premier Support

prioritize your business with Premier Support

Bypass basic troubleshooting and experience shorter waiting times, reduced repair times, and higher first-time fix rates.



Your direct line to a real expert: talk directly with Advanced Level 2 technical support agents located in your country. Each case will be dealt with end to end by the same support agent.



Don't wait for parts and fixes: Premier customers get next business day onsite repairs. When an onsite visit is needed, we will accurately diagnose the problem beforehand, so an onsite technician will arrive prepared with the correct replacement part.

Do your end users frequently have software support needs? Premier provides one point of contact for hardware and software issues. We support how-to questions and assist with hot fixes for a range of software in your organization. Point your users direct to our agents for help with Windows, Microsoft Office, many Adobe products, Chrome OS, Quickbooks, SUSE LINUX, Norton, Skype and many more.

Do your users travel internationally? Users can find support when they are travelling overseas; phone numbers for Premier Support around the world can be found by entering your product serial number on support.lenovo.com

Premier Support is ideal for organizations with limited technical resources, or with geographically dispersed employees, high IT dependency or worldwide operations.

Increase employee satisfaction with access to professional technical staff that will get straight to solving their problems, offer priority replacement parts, software support and international coverage.

IT teams can spend less time on basic troubleshooting and mundane tasks, enabling them to focus on more critical projects like digital transformation initiatives, upgrades to infrastructure, security audits and more.

We look forward to welcoming your organization to our Premier Support network, where your business is prioritized, always.

"

talk directly with Advanced Level 2 technical support agents located in your country - each case will be dealt with end to end by the same support agent



Warranty Extensions

customizable warranty services for your business

How often do you refresh your technology? The majority of organizations are replacing devices every 3 to 5 years, but most new devices come with standard warranties of only 1 or 2 years. This means organizations need to manage unplanned expenses when devices are out of warranty; no surprise that 50% of businesses* claim to purchase extended warranties.

But the reality is more complex; increasingly we see customers extending the warranty support of existing hardware for some users, while at the same time purchasing new devices more frequently for others. This 'hybrid' replacement cycle demands greater flexibility in how warranties are provided. As a result, Lenovo offers a broad range of warranty services:

• **Purchase additional warranty periods** from 1 to 5 years; buy the warranty extension at the same time as new devices OR at any point afterwards

- **On-site Service:** if the problem can't be resolved over the phone, a technician will be dispatched to arrive on-site, typically the next day.
- Mail-in Service: parts and labour repair coverage, where you are responsible for shipping to us
- **Depot Service:** parts and labour repair coverage, where shipping is paid for by Lenovo (typical turnaround time is 7-10 days including shipping)
- **Expedited Depot Service:** parts and labour coverage with expedited turnaround (typical turnaround time is 3 days including shipping)

Talk to us about your replacement cycles and how we can customize a warranty package for your unique needs.

* Lenovo Service & Warranty study, Nov 2017

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50% of businesses claim to purchase extended warranties





Expedited Depot

minimize downtime, enhance operational efficiency

When uptime and productivity are essential to your business operations, every extra hour spent waiting to get your system issues resolved could prove costly.

Lenovo's **Expedited Depot** service speeds up our standard 7-10 businessday turnaround time. Once the defective or damaged systems are sent in for servicing, we will normally get the repaired system **back by the 3rd business day**.



Priority support: save time and money by having Lenovo support available to address issues quickly.

Reduce downtime: achieve maximum up-time and productivity with a wait-time of just 3 days rather than 7-10 days of standard depot/courier.



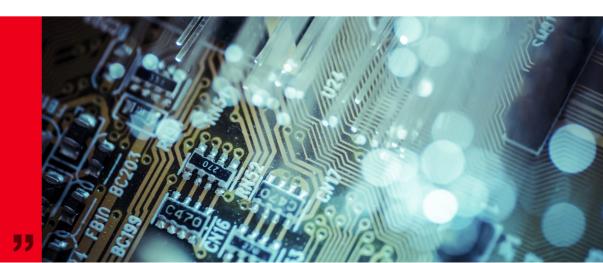
Avoid unplanned operational expenses: accurately budget for IT expenses at the time of PC purchase.

With Expedited Depot, you get **front of the line priority for repairs in the depot.** And in the unlikely event that needed parts are back ordered, you will also receive priority for back ordered parts.





achieve maximum up-time and productivity with a waittime of just 3 days





On-site Service

fast, on-site support, guaranteed

Today's technology and Lenovo's extensive reliability testing means it's unlikely to occur frequently, but if you are supporting hundreds of users and there are issues with mission-critical hardware, fixing and replacing parts suddenly becomes a priority.

Whether it's executives or specialist roles that need fast support, a large number of our customers select On-site Service.

With On-site service, if a problem can't be fixed remotely, a technician will visit your location to repair a device. The date and time for On-site service will be mutually agreed upon, normally by the next business day, and we will

either repair or exchange the failing machine at your location and verify functionality.

With On-site Service you can:



Save resources: Save time and money by having Lenovo support available onsite to address issues quickly.



Optimize efficiency: Achieve maximum uptime and productivity when operating within a mission-critical environment.



Minimize unplanned expense: Accurately budget for IT expenses at the time of PC purchase.

"

if a problem can't be fixed remotely, a technician will visit your location to repair a device



Accidental Damage Protection

protect from the unexpected

With today's workforce going mobile, accidents can happen anytime, anywhere. What do you do when devices not covered by normal warranty are damaged?

Lenovo's mobile repair data indicates that within the first three years, a significant percentage of users will experience damage to their device which is not covered by warranty.

Accidental Damage Protection (ADP) supports customers beyond our normal warranty, providing coverage for accidental damage due to electrical surge, liquid spills, drops or bumps, and LCD damage. Although many manufacturers limit the number of claims to once per year, Lenovo provides **continued coverage** and **multiple repairs**, or a single replacement of your laptop or desktop.

ADP offers your organization:



Peace of mind: avoid unexpected costs associated with replacing damaged system parts.



Comprehensive coverage: labour, parts, and full system replacement in cases where repair is not possible.



Quality assurance: performed by Lenovo trained technicians using qualified parts.

With ADP, your **IT team doesn't have to purchase and manage spare inventory to fix damaged devices**. A single, upfront investment allows you to accurately predict your yearly budget for repairs.

"

Although many manufacturers limit the number of claims to once per year, Lenovo provides continued coverage and multiple repairs, or a single replacement of your laptop or desktop.





Keep Your Drive

secure your data with Keep Your Drive (KYD)

What happens to the data residing in your systems in the event that a storage drive fails and needs to be replaced? Under the terms of the Lenovo Limited Warranty, when we replace a defective part, that part becomes the property of Lenovo.

The **Keep Your Drive Service** allows you to keep your drive(s) and dispose of business data on your terms, improving data security and ensuring compliance with data privacy and retention requirements, as well as mitigating civil liability risks associated with data breaches.

Because our diagnostics system can identify when a disk drive is defective, as soon as you report a problem we can quickly determine if the drive needs to be replaced. We will then authorize you to remove the drive before giving the device to us for installation of a new storage drive.



Predictable budgets: provides predictable upfront costs versus finding budget in the event of drive failure.



Regulatory compliance & protection: avoid the legal and monetary repercussions associated with a breach in data security.



Comprehensive coverage: covers multiple drives in a system and multiple failures, for both HDD and SSD drives.



Data remains secure: if your organization handles sensitive data, it eliminates the need for tracking failed drives in transit.

"

because our diagnostics system can identify when a disk drive is defective, as soon as you report a problem we can quickly determine if the drive needs to be replaced



Lenovo

Encryption Services

pre-encrypt your devices for easy deployment

How do you currently encrypt your systems? Manual encryption can take your IT team an average of 120 minutes per device – time that can otherwise be used to focus on activities that deliver greater business value.

Encryption Services from Lenovo provides **factory-enabled full drive encryption**, eliminating the long wait time needed when full drive encryption is deployed outside of manufacturing.



Reduce the burden on your IT team: your onsite technical staff can save approximately 120 minutes of encryption time per device.



Cut down on IT expenses: save time and expenses with a reliable single-source solution.



Minimize risk of penalty: most compliance standards today mandate encryption, or impose lesser penalties on encrypted drives.



Your choice: we can use whichever encryption method and software you choose.

"

manual encryption can take your IT team an average of 120 minutes per device



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Respond to Customers Faster

The push toward customer centricity in financial services escalates workforce enablement to a top IT priority. Users must be able to pivot quickly to keep up with customers' constantly changing needs.

Transform Employee Experience to Improve CX

Help users respond to customers faster by matching their job role to an optimal endpoint PC. Here are a few examples:

Customer Facing

- Job role requirements: Access customer or prospect information quickly to respond to or anticipate customer requests.
- Device requirements: Business development or customer relationship managers benefit from laptops with powerful dual-band WiFi, WWAN (4G) connectivity and high-quality cameras and microphones for conferencing and presenting. Hardware-enhanced security features such Match on Chip Fingerprint Reader and Intel® Authenticate solution offer reliable user authentication capabilities. Set up non-mobile customer service workers with thin clients that can run from a server for secure access to customer data.

Financial & Big Data Analysis

- Job role requirements: Analyze large amounts of data, identify trends and make quick decisions to advise customers.
- Device requirements: Plenty of memory, security and the ability to connect to multiple monitors help workers visualize data from real-time sources and quickly advise customers. Consider workstation PCs running Windows 10 Pro for Workstations, that analyze and visualize data up to 40% faster than 4-year-old systems.*

Financial Trader

- Job role requirements: Constantly monitor market prices, related news and information and transact trades in real time
- Device requirements: Financial traders need systems with multiple monitors configured for convenient viewing - sometimes up to 6 may be needed to monitor many information sources simultaneously and conduct trades. This means a device with a powerful graphics card - usually a workstation - is needed. The workstation itself may be configured with typically a single CPU, but fast M.2 PCIe SSD storage is recommended. Large amounts of memory are a must, to enable multitasking of web browser windows and other applications with data feeds and perhaps live video.

*Microsoft Power BI Data Source Change Workload: Measures the time to load, query, calculate statistics, and draw 6 charts from a different local data source containing 2.2 million sales records.

"

Long-term sustainable growth in the banking industry seems only possible with a radical departure from a salesand product-obsessed mindset to one of genuine customer centricity.

Deloitte



Digital Banking Report Survey 2018

Securing Endpoints to Protect The Organization

According to a study by Accenture and Ponemon Institute, cyber attacks cost financial services firms more than in any other industry. One of the most direct routes to improving your risk posture is to give employees business-grade PCs built to protect against cyber attacks. Such devices are built on 3 pillars of IT security:

#1: User Access Control

Business-grade PCs such as Lenovo's ThinkPad and ThinkCentre range of devices include hardware-based multi-factor authentication (MFA) features that are almost impossible to hack. This ensures that only the users with the right access levels can operate the PC. MFA requires two or more layers of authentication, which can include any combination of PIN number, password, phone proximity, location or a biometric factor such as fingerprint or facial recognition.

- Lenovo Match on Chip Fingerprint Reader: credentials are stored on a separate chip so that they're tougher to hack.
- Windows Hello: allows users to log in with their face, fingerprint, phone or other Windows Hello companion device (hardware-based protection of the Windows Hello credentials/keys requires a TPM chip on the device, which many business-grade PCs have).

• Intel® Authenticate Technology: built into the latest Intel Core vPro processor-based systems, Intel Authenticate grounds MFA in the hardware, isolated from the operating system.

#2: Port and Physical Protection

In the event that a device is lost or stolen, they also need physical protection. Smart USB protection blocks the data transfer capability of the USB port. A chassis lock can deter theft of components such as hard drives and graphic cards.

#3: Data Protection

Protecting data is critical to your reputation and customer confidence. Lenovo systems with Intel® Remote Secure Erase offer a secure, cost-effective way to sanitize devices in just seconds. Seamlessly integrated with Intel® Active Management Technology, Intel Remote Secure Erase allows IT administrators to work inside a familiar IT management console. Also, with Windows 10 Pro you can have full control on how your employees use your business data. For example, Windows Information Protection blocks the copying of customer and financial data into social media apps.

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Data breaches will continue to make the headlines in 2018 and the secondary impact on financial institutions will be felt through fake account setups and account takeover attacks.

Kaspersky Lab

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Costly Financial Cyber Crime

Average annualized cost of cyber crime for financial services companies.

The Challenges of Regulatory Compliance

Regulatory compliance in financial services is a challenge for all departments. Yet, because most financial transactions are digital, much of the responsibility to monitor and manage compliance falls on IT.

Two factors to prioritize in your compliance management strategy are data security and 'regulatory technology', otherwise known as "RegTech". As a trending financial technology subset, RegTech is integrating artificial intelligence (AI) and machine learning to automate regulatory compliance.

Data Security

Much of maintaining regulatory compliance starts with securing data. For example, complying with the Gramm-Leach-Bliley Act (GLBA) requires financial services companies to maintain "up-to-date and appropriate programs and controls to prevent unauthorized access to customer information." Other regulations around the world also have similar requirements.

By deploying business-grade PCs with strong data encryption tools and built-in security and manageability features, you save time, effort and costs of continual endpoint device monitoring. Lenovo recommends devices with:

• Full Drive Encryption (FDE) with a qualified TPM chip encrypts data and prevents unauthorized access, using Windows Bitlocker, for example

 On Intel vPro[™] platform-based devices, IT admins can wipe SSDs remotely using Intel® Remote Secure Erase

RegTech

RegTech solutions are mostly cloud based and are delivered as software-as-a-service (SaaS) solutions to help businesses minimize risk, and comply with regulations efficiently and less expensively. The cornerstone of every RegTech SaaS company is data security. Financial services organizations need to safeguard sensitive information, and one of the most direct routes to improving your risk posture is to give employees business-grade PCs that protect against security attacks.

- Business-grade PCs such as Lenovo's ThinkPad and ThinkCentre range of devices include hardwarebased multi-factor authentication (MFA) features that are almost impossible to hack.
- Smart USB protection blocks data transfer capabilities of USB ports
- Lenovo systems with Intel® Remote Secure Erase offer a secure, cost-effective way to sanitize devices in just seconds

PCs are a gateway into your organization's network. So when you are dealing with sensitive customer data ensure that only the authorized people can access it and your endpoint devices are not compromising your network security.

"

Knowing the identity of customers is an area where AI & machine learning are applied to address one of the biggest pain points in the financial industry, both with regards to UX and regulator expectations.

Lenovo

Financial Stability Board

RegTech: The New FinTech?

<mark>38</mark>%

NANCIAL SERVICES FIRMS

increasing their RegTech budget over the next 12 months.

Accelerating Technology Adoption

There's a staggering amount of financial technology (FinTech) innovation that can help your business. Along with that, machine learning, Al and blockchain, are helping financial services companies to understand customers better and respond to their requirements faster. However, many organizations are unsure how best to implement these new technologies in ways that will truly help their business.

Cloud Underpins Next Generation Technologies

Big Bata, cognitive computing, IoT, AI and robotics are all underpinned by Cloud. This means that Cloud is one of the most critical investment decisions any organization can make, and it should not be considered in isolation of other factors.

Endpoint devices are an important aspect of the Cloud ecosystem. Although many leaders understand the importance of providing endpoint devices specific to job requirements, your device strategy is also critical because it partly determines the security readiness of your organization. Business grade PCs with the right hardware and software features can help prevent against unauthorized data access or transfer out of your organization, hacking, malware and more besides. No wonder, for example, that almost 40% of SMBs^{*} are planning on investing in two-factor authentication approaches in the next 12 months.

Big Data is Becoming an Integral Part of IT Strategy

Much of financial services emerging technology is data-driven. Be it AI or cognitive intelligence or personalized banking, all these technologies run on the foundation of big data. Without adequate compute power it will be difficult for data scientists to harness the full potential of this data. You need to view all your data in a way that you can make sense of it. Acquiring the right skills for the job is your first step. An equally critical step is equipping these skilled employees – data scientists and analysts – with the right end computing devices to maximize the value of data visualization.

Devices for data analysis and visualization require:

- **Processing Power:** depending on the quantity of data and type of analysis, you may need a dedicated workstation with server-grade Intel Xeon® processors. Less intensive data processing can be done on regular desktop computers. The key point is to ensure your data analytics hardware is up to date and scaled for the task. It's more expensive to buy equipment for your current needs, only to find in less than a year you need more powerful devices. Always buy more performance (and storage) than you currently forecast as your need.
- **Graphics:** typically graphics performance is of less importance for finance use cases. Unless you are rendering high-resolution video or animation, you won't need professional-level graphics like NVIDIA Quadro® but if you are connecting multiple displays you probably need a dedicated graphics card to support output at high resolution.
- **Displays** don't just focus on the resolution and size of displays; look at the contrast ratio (how 'sharp' images will look) and colour gamut (how many colours it can display). Consider also ergonomic factors.. will operatives be using it for long hours through the day? If so, the simple tilt and pivot adjustment of most displays might not be good enough; consider mounting on an extendable arm which allows greater degree control over both angle and height.

*Forrester Business Technographics

"

Technology is rapidly reshaping the financial service workforce. Digital tools can do more of the heavy lifting, freeing up staff to concentrate of more complex and value-added functions.

Lenovo

PwC

Adopt or

FALL BEHIND

OF FINANCIAL LEADERS ARE TESTING BLOCKCHAIN SOLUTIONS

OF OTHER INSTITUTIONS

Big Data is an incredibly profitable business, with revenues expected to grow to \$203 billion by 2020. To say even more, by 2030 the data contained in the blockchain ledger might be worth up to 20% of the global Big Data market and generate up to \$100 billion in annual income.

55

Improve Performance & Limit Risk with Less Preloaded Software

When deploying new devices, you probably don't need a vast range of pre-installed apps and limited-trial programs that you didn't ask for. This "bloatware" wastes time when provisioning and can slow performance and create vulnerabilities.

Cleaner Preloads are Safer for Financial Services

Devices that come with fewer preloaded apps—also known as a clean preload—can benefit your IT team and your organization in several important ways:

Security: Financial services already top the list of industries facing malware attacks; bloatware introduces vulnerabilities that could allow an attacker to run malware at the system level. Clean preloads eliminate this vulnerability.

Performance: Cleaner devices help improve performance by reducing boot times and improving battery life because many preloads include hidden and unnecessary processes that overload the processor and memory. Independent testing by Microsoft shows that devices with significantly fewer preloaded apps average 28 minutes longer battery life than devices with exactly the same configuration but more preloaded apps^{*}.

Deployment Time: Clean preloads set up your IT team for quicker deployment to end users and frees

their time for critical priorities.

Choice: IT teams can select and control preferred applications for installation. Users can personalize their device without having to delete unwanted apps.

Committed to Minimizing Preloaded Applications

At Lenovo, we're committed to reducing the number of preloaded apps across all devices to help you save time, increase productivity and provide better user experiences.

- In the past 4 years Lenovo has removed between 75% and 90% of preloaded applications.
- Lenovo is an industry leader in clean preloads; now on every Lenovo business device you will find just 3 to 6 preloaded applications plus the Windows 10 Pro standard preload.
- The pre-loaded apps we include are of true value to IT. For example, Lenovo Vantage helps you easily customize settings, migrate or transfer files, update software and drivers, run diagnostics and more.

*Microsoft testing showed overall improvements in the PCs running cleaner preloads compared to those without. The tests were done on exact same make/model of PCs with identical hardware configuration. Displayed differences are averages across seven PCs from seven different PC manufacturers. Actual PC battery life may vary.

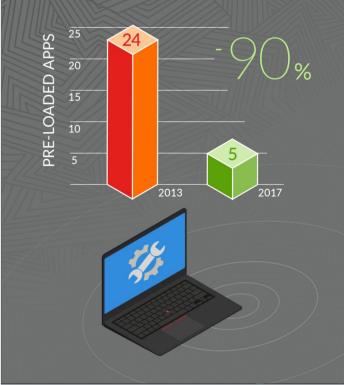
"

PCs with no junk-ware, that are fast, and have anti-virus built in are what's most important to consumers.

Microsoft

"

IN THE PAST 4 YEARS LENOVO HAS **REMOVED BETWEEN 75% & 90%** OF PRELOADED APPS ON ITS DEVICES.



Replace BYOD with a Choice of Company-Owned Devices

Bring your own device (BYOD)—where employees choose and buy a device (usually a smartphone) to use at work - continues to trend upwards. With BYOD already in place, you may have seen benefits such as:

- Reduced capital expenditures on buying, maintaining and upgrading hardware
- Happier users who want freedom of choice to work on their favorite devices

Hopefully, you're also addressing some of BYOD's challenges, including less control over company data, and greater risks from the loss or theft of devices. As a financial services organization, your BYOD program is at greater risk than in other industries, especially with the rise of ransomware attacks.

Restrict BYOD to Smartphones

Consider the following points to balance user choice and flexibility, with optimal security and efficiency:

- Where possible, restrict BYOD to user-owned smartphones.
- We've said it before and we'll say it again: "The ultimate responsibility for security is – as always – down to the individual." BYOD best practices include ongoing user education on threat vectors specific to financial services, regulatory compliance requirements and their individual BYOD responsibilities.
- Embrace an enterprise mobility management platform such as MobileI ron to simplify management of endpoint devices, or a mobile device management (MDM) solution like Microsoft InTune.
- Evaluate whether a cloud access security broker (CASB) agentless solution can give you better data visibility and control than your MDM suite.

Offer Employees a Choice of Company-Owned Devices

Beyond smartphones, all end user devices could be company-owned and managed by IT under a program where you offer employees a choice of devices. In this way, not only do users get choice, but your organization still benefits from the enhanced security features and common productivity standards found in business-grade devices like ThinkPad and ThinkCentre.

- **Consider business-grade devices** with the highest level of build quality, support services, security features and connectivity options. For example, access prioritized tech support and on-site servicing. Or achieve the highest security standards with hardware-based fingerprint readers which are much harder to hack.
- Audit job roles in your organization to get user input on preferred device types. Today there are many types of device available, each with their own advantages for different worker roles.
- Look for devices with Intel® Active Management Technology, which enables IT managers to discover, repair and help protect networked computing assets.
- Simplify PC deployment with a solution like Advanced Deployment Services. This is a customizable self-install wizard that enables final configuration steps to be performed by your end users instead of a technician. Whether joining a domain, installing software, setting up printers or migrating data, you can empower your end users to self-serve and reduce the burden on IT admins.
- Use Windows 10 Pro security features to help protect data in the event of a human error or if a device is lost or stolen. For example, Windows Information Protection helps prevent unauthorized or accidental sharing of company information and allows you to remotely delete business data from a lost or stolen device. BitLocker data encryption, supported by many ThinkPad and ThinkCentre devices, will encrypt all data on a device, ensuring it cannot be accessed by unauthorized users.

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A company's data is only as secure as the weakest device it's sitting on.

Owen King, Unwork

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Beware of The Hidden **BYOD Implications**

90% of data breaches impact SMBs



data breach

costs an SMB

5k on average

Source: First Data

Developing Your Cloud Infrastructure

Some of your users may need to work from anywhere without compromising financial data security. Or perhaps you have multiple locations that require unified access to vital customer, payment or market information. In both situations, workers expect an agile workplace with technology and policies to support.

Like most financial services organizations, you are probably using cloud to share files and backup data. As you develop your cloud infrastructure further, we recommend an IMS strategy (Identify, Match and Secure): (1) Identify your business goals, (2) Match with the right cloud infrastructure, (3) Secure endpoint devices.

Identify & Match

If efficiency and collaboration are your goals, move email to the cloud if you haven't already. This will reduce the burden on IT and the costs of outdated third-party email servers.

Are you using more than one public cloud provider for storage and collaboration? Consolidate rather than creating data silos or make use of publicly available APIs to link services together.

Further down the collaboration path, you can deploy "virtual desktops" with a solution such as Lenovo Unified Workspace. This workspace aggregation solution makes access to public or private web apps, legacy Windows apps, remote desktops, cloud storage and file shares possible on any device, —all in a user-friendly, costeffective, web interface.

Migrating on-premises or hosted databases to the cloud? Private cloud is the right solution if you have legacy applications, or security requirements that mandate an on-premises solution. Otherwise, consider hybrid cloud, which combines private and public services. Sensitive data and complex workloads can leverage on-premise infrastructure, improving control and reducing latency, but still enabling scale and efficiency through collaboration services on the public cloud. Many financial organizations are moving to hybrid cloud because they can demarcate between sensitive and non-sensitive data and/or situations where latency is crucial.

Secure Endpoints

Three quarters of cloud data breaches are caused by malicious acts or human error* with most of those targeting endpoint devices through malware, or because data was stored inappropriately on unsecured devices. Financial services is the second most expensive industry when it comes to the cost of data breaches*, with a per capita cost of US\$245 per data breach.

Protecting endpoint devices is a critical aspect of cloud security.

- Issue endpoint devices that support multi-factor authentication (e.g., biometric security), and enforce MFA policies.
- Full-disk encryption prevents the leak cloud access credentials in the event of theft or loss.
- And there are ways to improve the security of users' connection to cloud services. For example, Lenovo Vantage detects and analyzes in real-time any threats or attacks that are present near the laptop and enables it to distinguish between legitimate and possibly malicious networks.

* Ponemon, 2017 Cost of Data Breach Study

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Cloud storage gives the smaller IT shops access to bigger IT-type tools and capabilities that it may not otherwise have been able to afford in a CapEx model.

Tim FitzGerald, SVP & Chief Data Officer, EverBank

Identify Goals



Efficiency

Authentication

Collaboration

Storage

Malware

Match Cloud Infrastructure



Secure Endpoint Devices.



Get More Out of Your Microsoft 365 Deployment

Cloud-based productivity suites such as Microsoft 365 Business and Microsoft 365 Enterprise help financial firms optimize the value of the cloud by enabling collaboration across teams, devices and platforms for a monthly fee per user.

But as new features are added to enhance how teams and individuals can work, or to help IT protect against threats, it's important to ensure your endpoint devices are equipped to leveraged these features.

Make sure you are using Microsoft 365 for access to important manageability and security features:

- Windows Defender AV protects against malware.
- Windows Information Protection helps control how information is used and copied between devices, and continuously backs up data for anytime/anywhere accessibility to enhance preservation, compliance and archiving capabilities.
- A suite of data governance and privacy tools is available with Office 365 to help financial service companies automate policies for retention, expiration and deletion of data.

Enable Microsoft 365 Endpoint Security Features

Look for devices with the latest biometric technologies. Fingerprint readers and infrared (IR) cameras allow users to quickly log in without needing to remember passwords, and IT can set up multi-factor authentication (MFA) for increased security. This is especially beneficial in environments where staff are logging in multiple times per day.

WEB

CONFERENCING

Encrypt all of the data on your endpoint devices by using BitLocker, part of Windows 10 Pro. This enables you to perform a one-off full disk encryption ensuring any future data stored on the device is encrypted, and making it virtually impossible for customer financial data to be accessed in the event a device is lost or stolen. BitLocker requires devices to have a Trusted Platform Module (TPM). As you look to refresh and replace devices, ask manufacturers for a hardware (rather than software) TPM to maximize security.

Enhance Collaboration & Productivity

Give web-conferencing users a major upgrade by sourcing devices that have 2MP (1080p) webcams for video and dual array mics with noise-reduction technology that lowers background noise and boosts comprehension for all participants.

The average financial services user will type somewhere between 500,000 to 1 million words on their device per year* so why not test keyboards on desktops and notebooks with your end users and seek their feedback before acquiring new devices?

Microsoft 365 also has some "hidden" features that dramatically improve collaboration, creativity and communication through the use of "inking." Only touchscreen devices with digital pens can leverage such features as sketching and signing documents. But inking features go far beyond this; users can "mark up" documents with feedback and notes for recipients to play them back in the order they were written; highlight and annotate information across multiple documents and web pages; quickly create diagrams; and jot down intelligent notes and reminders via Sticky Notes and Cortana.

TACTILE

KEYBOARD

* Lenovo human factors research, 2016

3 Considerations for the "Perfect" Keyboard

Ultimately the perceived "quality" of a keyboard comes down to a fine balance between key travel, resistance and, sometimes, layout.

- Key travel: How far the keys can be pressed down... bigger is not always better and shorter key travel can be uncomfortable when typing for prolonged periods.
- Resistance: Also known as "feedback," resistance determines how much "feeling" users get from typing.



Layout: Numeric keypads are essential in the financial industry.



With Office 365...we have the tools required to deliver a competitive level of service in the digital age, while maintaining the regulatory compliance that is imperative in our industry.

Building a Device Choice Program

Your planned program, where employees are offered a choice of company-owned devices, can improve end user satisfaction and flexibility, at the same time as ensuring data and device security. With device management under IT's control, risk exposure is greatly reduced.

Manageability will be easier with IT controlling the program in-house. Because devices are approved by the company, IT can recommend suitable PCs for each user type, so that applications run more efficiently. And if all devices have the same connections, it's easier for IT to set up meeting rooms and hot desks that are compatible for every user. Which means your users will also experience better collaboration and increased productivity.

Recommendations for Your New Program

As you ramp up your new program, Lenovo recommends the following:

- Audit job roles in your organization to get user input on preferred device types. Today there are many types of device available, each with their own advantages for different worker roles. Gain user buy-in ahead of time to ease the transition to your new program.
- Select a vendor that can meet the hardware needs of all financial services users whether mobile workers with frequent travel, office-based employees or those with

advanced computing needs that require more powerful workstations. Your vendor should also provide an ecosystem of services and accessories, to help users make the most of their new devices.

- Include only business -grade devices in your portfolio. These devices have the highest level of build quality, support services, security features and connectivity options. For example, access prioritized tech support and on-site servicing. In an industry where data security is so important, only business-grade devices have hardened security features that meet the latest financial regulatory standards, which features like data encryption, multifactor authentication and real-time threat assessment of public WiFi networks.
- Plan and implement a comprehensive mobile protection strategy, factoring in features such as Windows 10 Promobile device management (MDM) which can be configured to prevent sensitive financial data from being copied into personal emails or other applications.
- Put in place a **process for recycling old devices**, ensuring that confidential data is properly and verifiably destroyed, and that assets are disposed of in an environmentally responsible way. This can be outsourced, for example with Lenovo Asset Recovery Service. Such services can also provide cash for your old devices, which can help to reduce the overall cost of new device acquisition.

With your new program, you should have a mobile device policy in place. Some best practices include:

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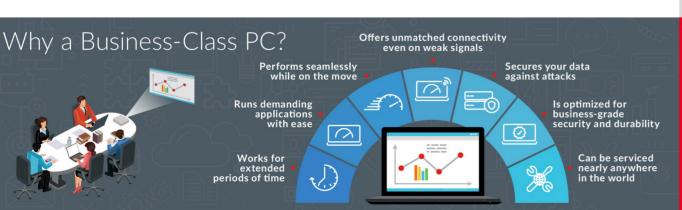
Factoring in a mix of business and personal use. Set restrictions on corporate data and intellectual property using a mobile device management (MDM) solution.

Lenovo

- Having a viable process for handling old devices. Do they get reassigned to another employee? What happens to stored data that might be confidential?
- Considering the latest solutions for remote erase of data on devices which are lost or stolen.



Charles Anderson, IDC Asia-Pacific



Protecting Financial Data in an Era of Advanced Threats

Financial services consistently leads all industries in malware attacks, most often from Gozi (Ursnif) or Zeus threats. The costs can be enormous and, in the case of SMB financial firms, possibly disastrous. According to the Ponemon Institute, the cost per lost or stolen record in the financial services industry averaged \$245 in 2017, more than a hundred dollars above the average cost for all other industries.

Regulatory compliance also factors heavily into data security. In a complex landscape of international regulatory standards such as SEC 17a-4, European Directive MiFID II and General Data Protection Regulation (GDPR), data security is not just an IT problem; it's a mission-critical competitive differentiation.

Endpoint devices can be exposed gateways into customer financial data and your IT infrastructure. Provide end users hardened devices built to combat cyber attacks with built-in security features and services:

User authentication: Biometric fingerprint or IR (infrared) cameras improve security and enhance the user experience.

Encryption: Enable full-drive encryption at the factory to save IT time when deploying devices. Alternatively, manually enable Microsoft Bitlocker on devices equipped with a Trusted Platform Module (TPM) to encrypt data.

Lenovo Online Data Backup (OLDB): This next-gen data management solution allows enterprises to securely store customer financial information in the cloud with a simple, automatic backup process. It's quick to set up, requires no additional administrative overhead, offers military-grade security, and is much more affordable and reliable than on-premises solutions. Access multiple, point-in-time versions of data, ensuring you can recover from any form of cyber attack or accidental data loss.

Remote Secure Erase: Using Intel® Active Management Technology, an IT administrator can remotely erase all data on a system even if it is asleep or shut down, or the OS image is corrupt. This feature also integrates with many common IT management consoles.

Containerization: Isolated virtual containers protect against malware gaining access to devices and data. They're typically deployed on smartphones and tablets through mobile device management (MDM) or mobile application management (MAM).

Protection against snooping: Privacy filters fit to new and legacy device screens help prevent others from seeing confidential information.

Port protection: Port security features help protect against physical theft of data via USB and other access ports by disabling or otherwise requiring authentication for their use, while still allowing accessories like mice to work.

Keep your drive: Typically, under the terms of manufacturer device warranties, when a defective part is replaced, the old component becomes the property of the vendor. A "keep your drive" service allows you to keep your drive(s) and dispose of business data on your terms, improving data security and ensuring compliance with data privacy and retention requirements, as well as mitigating civil liability risks associated with data breaches.

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One of the biggest risks facing financial services companies is complacency. Cyber attacks will actively adapt to defensive controls...Financial services firms need to ensure they always stay one step ahead.

Lenovo



Device Management is No Longer Optional

By 2020, 42% of the global workforce is estimated to be mobile. The higher proliferation of mobile devices substantially increases the security exposure for financial services organizations, which are already subject to higher data security and compliance standards than most sectors. So what should IT do?

Deploy the Right Device Management Solution

With the growing number of mobile devices in the global financial industry workforce, there's no doubt that IT teams need to have better visibility and control over their security and manageability. But what does device management actually mean and what are the various ways of deploying it?

Mobile device management (MDM) is a type of security software used by an IT department to monitor, manage and secure any type of mobile devices and its operating system being used in the organization.

When MDM is combined with additional security services like mobile application management (MAM), mobile information management (MIM) or mobile content management (MCM), it is collectively referred to as enterprise mobility management (EMM).

Cost-Effective and Secure Device Management

Through a combination of partners, Lenovo brings together comprehensive security and EMM tools, including traditional MDM, MAM and MCM capabilities. Financial industry IT administrators can expand their mobile management infrastructure and more effectively manage the lifecycle of their devices and applications. Small and mid-sized financial firms can ensure policy enforcement, regulatory compliance, patch deployments, data security and lower network downtime by containerizing malicious applications.

- Lenovo and Intel join forces to enable device management at a hardware level - Endpoint devices powered by 8th Gen Intel Core[™] vPro[™] processors with Intel Active Management Technology offer the only solution delivering out-of-band remote manageability over both wired and wireless ethernet. As a result, IT can remotely manage systems even if they are shut down, or if the OS image is corrupt. They can also use Intel Remote Secure Erase to remotely wipe media and delete encryption keys from compromised or lost devices.
- OS-enabled MDM through Windows 10 Pro on Lenovo Devices - Windows 10 Pro offers two solutions for device management. Microsoft SCCM is meant for a Windows environment only is an on-premise mobile device management (MDM) system - meaning that you host it on your own infrastructure. Alternatively, Microsoft Intune is cloud-based and can be used to manage iOS, Android and Windows devices. It has a wide range of device and application management features; for example, IT admins can prevent sensitive information being copied into personal applications and email.
- Transform OS-enabled MDM to a more comprehensive EMM solution with MobileIron - The strategic partnership of Lenovo and MobileIron ensures secure provisioning and simplifies endpoint device management by incorporating identity, context and privacy enforcement. Data-at-rest and in-motion are secured as it moves between the organization's network, devices and various on-premise and cloud storage repositories.

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87% of companies expect employees to access mobile business apps from their personal smartphones increasing risk if not properly managed.

Syntonic 2016 Employer Report: BYOD Usage in the Enterprise

How Mobile Device Management Helps with GDPR Compliance

Create Data Boundaries

Enable personal and business data separation, prevent publishing of confidential data mistakenly on social platforms.

Critical for meeting data minimization, integrity, and confidentiality principles of GDPR.

Audit & Monitor Compliance Provide clear records of any unauthorized access to business services.



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Supports the GDPR principles of accountability, integrity and confidentiality.

Centralize Policy Enforcement



Apply security configurations and policies to devices and applications. Provides for remediation in case of comprised devices.

Supports the GDPR principles of accountability, integrity and confidentiality.

Boost Digital Transformation Initiatives with the Right Devices

Digital transformation (DX) trends in the financial industry include technologies such as artificial intelligence (AI), cognitive analytics, internet of things (IoT), augmented reality (AR) and robotics. According to a survey conducted by MIT Sloan Management Review and Deloitte, 93% of financial institutions are investing in these technologies to improve customer experience and engagement.

Two challenges of DX in the financial industry are determining which technologies will have the biggest impact, and - especially for small and mid-sized firms - how to keep up using limited budgets.

DX is a big undertaking, which requires investments in IT infrastructure, networking solutions, collaboration applications and more besides. Although these are absolutely critical for any transformation initiative, employee computing devices are equally important. Organizations that ignore end-user devices are taking a big risk, jeopardizing 90% of their investment by not paying heed to the all-important 10% - a smaller but important piece.

Digital Transformation and Computing Devices

Ensuring employees have the right tools with the right features to deliver effectively on your business objectives, will be crucial to success. Consider three key objectives for endpoint devices in your overall strategy:

• Enable ANYWHERE working: In today's organizations, almost 40% of the workforce is mobile*,

and that number is only increasing. This mobile workforce doesn't have a designated place of work, and depending on their role, might be working from ANYWHERE: their home, customer site, café; the list is endless. Enabling this kind of work environment requires not only a strong IT backbone, but also smart endpoint devices that are adaptable, connected and productive from anywhere, just like their users.

- Enable ANYTIME working: Work culture has evolved from the need for work-life balance to the need for work-life integration. This is primarily because of increased globalization in the product-service delivery model. Employees, customers and suppliers are often located in different time zones. So to avoid compromising productivity, business continuity and quality, employees must be empowered to collaborate across different time zones—and hence must have the flexibility to work ANYTIME.
- Enable ANY-WAY working: Another essential work requirement is the ability to create, collaborate and present when required. While today's organizations must rationalize their workforce, employees often have varied responsibilities. For example, a marketing specialist in a B2B company could be required to join the sales team for a customer presentation, along with managing the financials for a business initiative, working with training teams, and more. Such job roles need the flexibility to work ANY-WAY, as needed.

* Gina Luk and Andrew Brown, "The Global Workforce is Set to Increase to \$1.87 Billion People in 2022" Strategy Analytics, Nov 2016

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Customers have come to expect a lot more of the people with whom they entrust their financial affairs, which is why it's so important that our processes are automated, free of errors and completely seamless end-to-end.



CRITICAL FOR DX SUCCESS



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Moving to Windows 10 Pro for Greater Security and Manageability

Migrating to Windows 10 Pro holds more urgency in the financial industry compared to other sectors; its stronger security posture helps IT with data security, manageability and regulatory compliance. Nevertheless, you may have users who are familiar with an older OS like Windows 7, concerns about migration issues, or not be ready to sunset some existing devices. But as of January 2020, Microsoft will no longer support Windows 7 in any way, leaving old devices vulnerable to data breaches.

Migrating is easier than you may think. New Windows 10 Pro devices unlock significant productivity benefits for financial organizations. The OS is intuitive for users familiar with Windows 7 or 8 and is compatible with 99% of Windows 7 apps.

The Most Security Protection, Built-In

Windows 10 Pro protects financial information, customer data, and your employees' digital identities, as well as your brand reputation with features such as:

- Windows Hello: Users sign in with their face or fingerprint—replacing passwords with easy-to-use multi-factor authentication.
- BitLocker: Encrypt data to protect it even when a device is lost or stolen.
- Windows Information Protection*: Block employees from intentionally or inadvertently copying sensitive data into unauthorized applications.
- Windows Defender Antivirus: Get built-in protection from malicious software and hacking.

Integrates Easily with Existing Infrastructure and Apps

See how your current apps will work on Windows 10 Pro at ReadyforWindows.com and use free resources like User State Migration Tool to migrate your users' accounts, files and settings.

IT administrators estimate a 15% improvement in IT management time** with Windows 10 Pro because of features like:

- Windows Update: Users choose when to apply OS update. Their devices can be kept up-to-date without interrupting them—reducing IT support requests.
- **Single sign on:** Employees can use a single login across Windows 10 Pro, Office 365 and other Microsoft PCs, tablets, and phones using Azure Active Directory.

Get More Done

- Compared with a 5-year-old PC, a modern Windows 10 Pro device is 65% faster at multitasking and laptop battery life is up to 3x longer***.
- Windows Ink lets employees capture and collaborate on ideas using a digital pen: take notes, edit Office documents, or brainstorm on the Microsoft Whiteboard app.

* Requires either Mobile Device Management (MDM) or System Center Configuration Manager to manage settings. ** Forrester, Total Economic Impact of Microsoft Windows 10 *** Multitasking measured by SEG562, an office productivity and multitasking workload. Battery life compares modern Win 10 devices vs Win 8.1 using local HD video playback

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What would previously have been laggard customers [financial services] are moving as fast as the early adopters, because the security posture that comes with Windows 10 and the capabilities they're interested in require them to move.

Craig Dewar, Microsoft

5 Reasons to Plan Your Transition to **Windows 10**

> 99% of Windows 7 apps will run on Windows 10



Windows 7 support ends Jan 2020



33% reduction in security events requiring IT remediation



IT administrators estimate up to 20% reduction in IT management time



New devices running Windows 10 Pro are 65% faster at multitasking

Move Beyond Passwords to Multi-Factor Authentication

Protecting devices only with passwords exposes you to greater risk and frustrates users. Verizon's "2017 Data Breach Investigations Report" revealed that 81% of hacking-related breaches involved stolen or weak passwords. Of the breach victims, 24% represent the financial industry, by far the hardest hit.

Financial industry users also suffer from "password rage" when they either forget a password or have a password request interrupt their workflow. But the more financial data security becomes a concern, the more users are bothered to enter increasingly complex passwords.

Why Multi-Factor Authentication?

The financial industry is leading the way in multi-factor authentication (MFA). Also known as two-factor authentication or 2FA, such entities as the European Banking Authority, the international financial network SWIFT and the Monetary Authority of Singapore already require MFA.

MFA involves two or more layers of authentication, none of which need to be passwords. Devices with integrated MFA features protect financial and customer data and identities while improving the user experience.

How to Implement MFA?

Be careful about using authentication solutions that are not grounded in hardware. Many fingerprint readers or cameras you find in end user devices store the biometric data at the software layer in the OS, leaving them vulnerable to hacking. With MFA grounded in hardware, it is much harder for malicious code to snoop and capture password data because its located deep in the silicon, isolated from the OS and applications.

MFA Features to Consider

Look for devices with Intel® vPro[™] Technology, which includes Intel® Authenticate; this not only helps to enable hardware-level protection, but makes it easier for IT to mix and match identification factors such as the following:

- Facial Recognition: Infrared (IR) cameras are more secure than regular cameras for facial recognition. In addition, ThinkPad Glance utilizes face-, eye- and gaze-tracking to automatically lock a device if the user is not present.
- **Fingerprints:** Lenovo Match on Chip Fingerprint Reader (MoC FPR) stores biometric credentials on a separate chip, making it almost impossible to hack.
- **PIN:** Short PIN codes can be used alongside other authentication factors as part of an MFA solution.
- Consider the following as supplementary MFA factors:
 - **Phone Proximity:** Users can pair their smartphone with their PC via Bluetooth and securely use the proximity of their phone as an authentication factor.
 - **Location:** Use location-based services to determine if a user is in an expected location like their office.

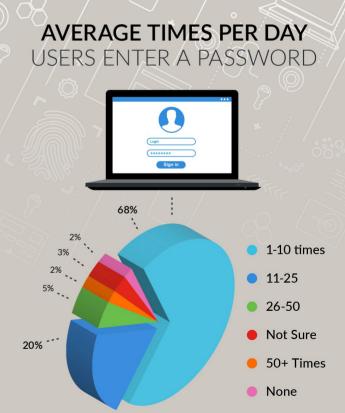
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Biometric authentication technology is utilized in 62% of companies, and an additional 24% plan to utilize it within two years.

Lenovo

Spiceworks

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In a typical day, approximately how many times do you enter a password online for email, websites, or to access your online profiles?

Source: Centrify

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Optimizing Energy Efficiency in End-User Devices

Financial services organizations seek energy-efficient computing hardware for many reasons, including:

- Identifying possible savings on energy costs
- Achieving sustainability goals (many global financial firms publicly tout their environmental responsibility, including Deutsche Bank, HDFC Bank, ANZ, CIBC and People's Bank in Sri Lanka)
- Reducing wear and tear on hardware due to age or configuration

Environmental efficiency initiatives in financial services can include everything from branch office design to solar-powered ATMs. But the hardware your users depend on to do their jobs every day can also play a part.

8 Tips to Reduce Your Computing Hardware Energy Footprint

- 1. **Consider deploying laptops instead of desktops where possible.** Desktops are larger, have more components and require at least one monitor, all of which equates to costing about 3X more to run than laptops.
- 2. **Replace any CRT or LCD monitors with LED monitors.** LEDs consume less power. Older LCDs use cold cathode fluorescent (CCFL) backlighting which can be up to 30% less power efficient than LED.
- Prioritize high-efficiency power supply units (PSUs) in desktops or workstations. 80 PLUScertified PSUs waste 20% or less electric energy as

heat.

- 4. **Utilize Windows 10 Pro energy management.** By default, Windows 10 Pro PCs should be sending PCs to sleep after a set amount of time. Do not use screensavers as they keep monitors active and consuming power.
- 5. Buy monitors or AIOs that are ENERGY STARcertified. This certification designates monitors such as ThinkVision and ThinkCentre AIO models as, on average, 25% more energy efficient than those without certification
- 6. Consider solid-state drives for storage on laptops or desktops. Because SSDs don't have to spin up a hard disk from standstill they don't waste energy as friction or noise. This equates to energy cost savings on desktops and longer battery life on laptops.
- 7. **Regularly scan PCs for malware, junkware and bloatware.** These unnecessary apps may be running in the background, consuming energy and disabling sleep mode, and the financial industry is the most heavily targeted sector for malware.
- 8. Is it more efficient to turn off a PC instead of putting it into sleep mode? Any devices manufactured in the last 6-8 years will draw minimal power in sleep mode, so it makes little difference whether you completely power down or not. The key is to ensure devices enter sleep mode when not being used, and are not woken inadvertently by software running in the background when left unattended.

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Of all the energy-consuming devices in the workplace, computers are often guilty of using the most electricity... By switching to sleep mode wherever possible, you'll limit the amount of power the computer requires.

SmallBusiness.co.ul





Flexible Computing for Modern Financial Industry Workspaces

How do you empower an agile workforce to respond faster to customers in a highly regulated industry that strictly monitors the security of customer and financial data?

Security and compliance should be at the forefront of any workspace optimization initiative by financial firms. One survey found that 81% of financial firms have security rules that restrict access to mobile tools and applications outside of working hours.

Nevertheless, even if security and compliance limit financial workers' mobility options, modern devices and accessories now exist to optimize workspaces while promoting flexibility.

Space-saving & Collaboration Ideas to Consider

All-in-Ones (AIOs)

These devices integrate the computer inside the screen, saving desk space and reducing the need for cables to connect a separate tower and display.

Micro Desktops

Micro desktops and thin clients are common in customerfacing financial environments. For example, Lenovo's ThinkCentre Tiny has a footprint smaller than a laptop for mounting under a desk or placing behind a monitor.

Docking Stations

"Hot-desking" is gaining popularity in the financial industry where 48% of assigned workspaces are unoccupied throughout a day—to increase utilization of existing space. In a hot-desking scenario, several users can connect their laptop to a docking station to share the same desk and peripherals at different times.

Individual Web Conferencing

If users are conducting VOIP calls and web conferencing in an open plan office, are they disturbing others because they struggle to make themselves heard through their PC? Simply having a good quality headset, a PC with noise suppression and digital mics can make a big difference.

Meeting Rooms

Frequently, users experience frustration getting meetings started – equipment doesn't work, or they can't find the right adapter to connect to the projector or screen. A smart meeting room solution will solve that, enabling users to connect to displays wirelessly, reserve rooms automatically through Outlook, and collaborate with remote participants seamlessly.

Eliminating the complexity of meeting room equipment, devices like the ThinkSmart Hub 500 replace conference room phones, dongles and adapters, and simplifying cabling. As you look to modernize, consider the following:

Employee's job roles: are they 'fixed' at a desk or often mobile and/or hot-desking?

- What are the performance needs you require from hardware?
- Do they need to collaborate with others in the same building or remotely?
- \checkmark

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How much time is spent in meeting rooms? Are they able to efficiently connect to meeting room services?

Align Technology with User Needs to **Optimize Workspaces**





Some banks are moving whole groups of employees into home-based or 'hot-desk' working environments as a way to achieve significant real estate savings.

Peter Hazou, Director of Business Development for Financial Services, Microsoft

Developing a Scalable Tech Support Strategy

Financial services workers demand a lot from IT. To respond to customers faster, users want more powerful hardware that run applications better and can pull up information quicker. A dangerous cyber attack landscape creates a greater need for data security and regulatory compliance assistance. And the adoption of new technologies such as machine learning can result in greater pressure on IT to support users.

Lenovo recommends three major considerations to financial services customers as they scale tech support services to be both proactive and responsive to all end user needs.

Identify User Types & Needs

- Define your different user types and the jobs they perform; do some of your users need faster problem resolution or other special requirements?
- What common issues can be solved by internal staff and do you have clear processes to determine when outside support services are needed?
- When did you last conduct a cost/benefit analysis of internal and external support resources?

Weigh the Pros and Cons

Time and Money: Downtime can impact customer dissatisfaction, sales quotas, profitability, employee morale and more.

Internal Support: An onsite team can provide instant support to resolve issues, reduce downtime and get employees back to work

faster. However, if unique problems occur (or if issues arise during non-office hours) downtime can be significantly longer.

External Support: While an external support team (outsourced or direct) can often provide more in-depth experience with varied issues, there are still downfalls:

- Outsourced IT agency support takes on a breadth of hardware and software issues, tends to be more expensive, and may still defer to vendors and manufacturers to really solve problems.
- Direct support from manufacturers often focuses only on their own products and will send your IT support staff through loops of scripted support before getting to the real issue.

Develop a Blended Support Strategy

Relying entirely on internal support teams, outsourced IT agencies or direct support from manufacturers all have their limitations. In most cases a blend of these resources is the optimal way to deliver reliable service while controlling costs. Outsourced IT agencies can be a valuable resource for your business, but we recommend minimizing the use of such agencies for low-level and straightforward support needs.

Instead, look to augment your internal team by asking manufacturers if they offer **prioritized support services.** Typically low cost, these can free up your internal staff from administrative and basic technical support tasks, and improve employee satisfaction, without going to outsourced IT agencies. Questions to ask your IT equipment suppliers:

- Ask to have only advanced technicians serving your account; those who can provide professional, unscripted diagnosis without needing to go through basic FAQs or telephone queues
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Do they offer onsite diagnosis and repair services?

- Could they support your most commonly used software; answering employees' basic how-to questions or assisting with hot fixes and patches
- \bigcirc

Demand a single point of contact for simplified end-to-end case management

Outsourced IT

Agency Support Use for specialist & complex requirements

Jse for specialist & complex requirement that can't be supported internally



or down

Direct Support from Manufacturers

Increase coverage for low-level and admin-intensive issues

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Financial services companies' monitoring systems should work 24/7, with adequate support for efficient incident handling and remediation processes.

Deloitte

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Improve Productivity with Web Conferencing & Smarter Tools

IT teams in financial industry organizations of all sizes feel pressure to make it easier for employees and clients to meet anywhere, any time. To respond to customers faster, train clients or employees online instead of onsite, provide "agent on demand" services or conduct educational webinars, web conferencing is now the norm for collaboration when participants aren't physically in the same place.

But how do you find the right tools to improve web conferencing quality and make it more productive and efficient?

Ensure Devices are Ready & Reliable for Web Conferencing

Look for device features and accessories that make web conferencing engaging and productive:

- Dual array microphones help meeting participants hear users clearly.
- A noise cancellation feature included with many ThinkPad and ThinkCentre devices helps reduce background noise.
- For web conferencing requiring both camera and audio, look for devices with low-light-sensitive 720p or 1080p HD webcams (0.9MP or 2MP) to ensure visibility in a range of lighting environments.
- Some devices include a sliding cover over the webcam to address privacy concerns.

- When buying All-In-One (AIO) devices, look for those that offer a range of tilt positions so that the built-in camera can be suitably positioned for the user.
- Accessories such as headphones with a built-in microphone can have a dramatic impact on meeting productivity by improving sound quality and limiting noise in open environments.

Make the Meeting Room Experience Smarter Too

Business-grade PCs can make financial conference and board rooms smarter too. Consider solutions such as:

Skype for Business - Skype meetings provide audio, video and web conferencing online with the ability to schedule or start a meeting at any time. Up to 250 people can join from practically any connected device.

ThinkSmart Hub 500 - This all-in-one purpose-built Skype Room System device runs Windows 10 IoT. With audio and video connected, it's a one-button start every time. And the rotatable 360-degree display makes it easy for anyone in the room to take control.

Intel®Unite[™] - Permanently attach a Lenovo ThinkCentre Tiny micro-desktop configured with Intel Unite to a meeting room display, and participants can instantly connect and project wirelessly, share files and collaborate without searching for the right cables, adaptors or dongles.

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Video conferencing, aggregation — both of financial data and personal information — and modern communication tools like texting are mandatory for advisers to adapt to a changing society.

Investment News

More than 50% () of employees expect to be working in a smart office in the next 5 years



Source: Intel® Office of the Future Study

Selecting the Right Docking Solution

It's common for employees working in financial services to connect a notebook to one or more displays so they can multitask across different applications. A docking solution makes it easier to connect to additional screens and other peripherals. With many docking solutions available, here's a quick guide to choosing the right solution:

MECHANICAL DOCKS

For organizations that mandate higher levels of security. Suitable for users who are frequently switching between desk-based and mobile working.

These solutions physically connect to the device without any cables and provide fast-charging capabilities. Extensive connectivity options include USB2.0, USB 3.1 and USB-C ports, Ethernet, and support for multiple displays using HDMI, DisplayPort or VGA. Mechanical docks include an optional master key to secure the notebook in the dock, preventing removal. Additionally, a Kensington lock cable can be used to secure the dock itself to a desk.

THUNDERBOLT DOCKS

For power users who use multiple high-resolution displays or frequently transfer large files to other devices.

These docks use a USB-C cable to connect the device and the dock, providing both power and data connection. The latest Thunderbolt[™] 3 docks excel at transferring large amounts of data at speeds of up to 40Gbps and can connect up to 3x 4K displays.

HYBRID DOCKS

For organizations with mixed-PC or shared desk environments These docks connect to a notebook through a USB-C cable, which also provides charging power. They can support up to 2x 4K displays and have a range of USB-C, USB3.1 and USB2.0 ports. They are backward compatible with older notebooks that do not have a USB-C connector, using the supplied USB-C to USB-A adaptor, but they cannot be used to power these devices.

USB-C DOCKS

For organizations that have deployed notebooks with USB-C charging connectors

These docks connect through a single cable to the notebook, all the while providing continuous charging power to the system. Lenovo's USB-C docks support 1x display at 4K resolution or 2x displays at lower resolutions. A Kensington lock cable can be used to secure the dock to a desk.

USB 3.0 DOCKS

For organizations with older devices, and users with basic connectivity needs

Depending on the dock, they can support up to 2x 4K monitors and a range of USB peripherals. They can be used to charge mobile devices like smartphones even when the notebook is away, using the always-on USB port.

Simplify your IT asset management

Lenovo's Docking Solutions simplify IT asset management by supporting remote management features:

- **Pre eXecution Environment (PXE) Boot:** is a standard feature in Lenovo docks which enables devices to be remotely booted over a network, using code stored on a server or other network-attached device.
- Wake-On-LAN (WoL): allows IT teams to turn on devices even when they are powered down, or in sleep/hibernate mode. Wake-On-LAN is available on all solutions except USB 3.0 docks.
- MAC address pass-through: many system management tools mandate a unique MAC address to deploy software. This feature recognizes the MAC address in the BIOS and overrides the address supplied by the dock. Available on all solutions except USB 3.0 docks.

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Docking solutions can boost productivity by making it easy to switch between mobile and "full desk" computing experiences



Office Ergonomics

With many employees spending long hours at a computer, providing a healthy environment is crucial for well-being and productivity. Many financial services organizations invest in ergonomic office chairs and larger displays to help mitigate common health risks like back pain and eye strain. However, there are other factors that can contribute to improved well-being.

5 Ways to Improve User Comfort

1. Publish advice on the best placement of monitor or laptop screen: according to ergonomics expert Dr. Alan Hedge, "If the monitor is too low, you will crane your neck forwards, if it's too high you will tilt your head backwards and end up with neck or shoulder pain." To find the right position, sit back with your chair slightly reclined and hold your right arm out horizontally - your middle finger should almost touch the centre of the screen. At this position you can see the screen more clearly because humans have a greater visual field below the horizon, rather than above. Look down a corridor and you will always see more of the floor than the ceiling.

2. Increase display position flexibility: for deskbased employees, consider mounting displays on adjustable arms. These greatly increase the height, angle and depth at which a display can be positioned in relation to the user. Most monitors and all-in-one computers can be mounted onto an adjustable arm, which itself can be clamped to a desk without drilling holes. The Lenovo Adjustable Height Arm, for example, is suitable for any VESA-compatible monitor, ThinkCentre M Series or Lenovo V Series all-in-one.

3. Convertible devices are ergonomically better for mobile users who frequently work on tablets or laptops. For example, if reading emails and reports or web conferencing, folding the ThinkPad Yoga laptop into an alternative mode like 'Tent' or 'Stand' will bring the screen much closer to the user, improving posture. Such flexibility also enables more control over the angle of the screen - so the user can precisely adjust the screen angle whether they are sitting, standing or even laying on a sofa or bed.

4. Look for devices with anti-glare screens and high-contrast ratio. Anti-glare screens significantly reduce reflective light from indoor lighting or sunlight from outside, which in turn prevents users from leaning into the screen to try to see it more clearly. Similarly, screens with a higher contrast ratio appear clearer, whatever the surrounding light conditions.

5. Resolution and scaling are equally important: although a higher resolution screen enables greater detail and a larger area for multitasking, it also means data and words get smaller. Ensure that users know how to adjust resolution and scale independently - boosting the size of menus, buttons and text without changing the resolution.

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a user's eyes should be in line with a point on the screen about 76mm (3") below the top of the display

Dr. Alan Hedge, Ergonomics Expert



50 Test Co. Ltd

Why Lenovo?

We are Lenovo. We are the difference makers.

Among our thousands of financial services customers around the world we count banks, insurance companies, brokerages, FinTech companies and more as customers for whom we've helped unlock the power of IT. Our workforce-enabling technology and services help align IT with financial industry challenges to help you give your business a competitive edge.



REASONS WHY Lenovo is a Difference Maker



Trusted Around the World

160 countries. 3,000+ field service locations. 150,000+ partners. Financial services industry start-ups, SMBs and enterprises trust us to support IT's significant role in success.

Expertise Across Categories

We are the world's only PC, smartphone and data center company and can share our experience to empower your organization.



Business-Boosting Technology

From blockchain to regulatory compliance and infrastructure to end-users, we can help you unlock more value from your IT investments.



Flexible Support Network

Buy direct or through our expert partners. Pick as much or as little technical help as your business needs.



Choose Lenovo with Confidence

Our products are built to the highest standards of quality and security so you can spend less time trying to keep up with the changing threat and compliance

