

A desk setup featuring an iMac monitor, a silver desk lamp, a pen holder, a teapot, and a mouse. The background is a light blue wall.

MACS IN BUSINESS

WHY CHANGES IN
HABITS, DESIGN, AND IT SECURITY
ALLOW APPLE PRODUCTS TO THRIVE
IN THE OFFICE

BY TONY MILLER

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MACS VS WINDOWS

THE ETERNAL STRUGGLE

The world has known many great rivalries where two sides were locked in a battle that seemed to last beyond time. Nikola Tesla vs. Thomas Edison. The Hatfield's and The McCoy's. Coke and Pepsi. Muhammad Ali and Joe Frazier. Chocolate versus vanilla.

In enterprise environments, we have Apple's Macs versus Windows PCs, and the two have deeply entrenched followers who are unlikely to budge an inch. And now, it's up the most unlikely of groups to put the warfare to rest: The IT department.

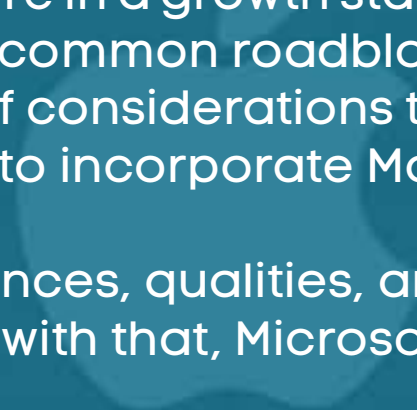
We've seen the Mac vs. PC fight grow over the years and it's been fantastic for businesses, especially enterprises. New features, speeds, evolution, and support from each side have elevated our available device market to a point where all the devices you're likely considering are reliable and exciting.

Macs have started creeping into enterprise IT because they provided a form factor users demanded. Their prevalence was turned from growing threat into growing revenue opportunity as Microsoft expanded its software and support for more Apple devices, especially with network controls and Active Directory domains.

The growth of device-friendly BYOD policies in business has helped bring more machines, both Windows and Macs, into enterprise settings. It's evolving into a bring-your-own-platform model where choice is as important to the user as the specific hardware.

Organizations are implementing more policies based on user choice, but it can have some initially higher cost for networks, especially if you're in a growth stage and have an IT staff that is already overwhelmed. New tools, however, are striking against these common roadblocks to delivering a more cohesive environment. The goal of this book is to provide you with a set of considerations to guide decisions about how secure, cost-effective, and advantageous it will be for your business to incorporate Macs or to lock them out for the time being.

We'll look at costs, preferences, qualities, and the shifting landscape that reveals what we thought about Macs last year is no longer true, but with that, Microsoft and Windows have few surprises of their own as well.



A BRIEF **HISTORY** OF THE MAC

Apple began creating Macintosh computers, the Macs we've loved over the years, in 1984 with a revolutionary line bringing about the first personal computer capable of delivering scale to the consumer market. Surprisingly, it did contain a mouse and graphic user interface, but it lacked a programming language.

That humble beginning has continued to grow into today's lineup of Mac computers, with six current models:

- iMac
- Mac Mini
- Mac Pro
- MacBook
- MacBook Air
- MacBook Pro

Looking across the past 10 years, Macs have seen a significant growth in sales volume. In the first quarter of the company's fiscal 2016, sales were 1.25 million units, climbing to roughly 4.89 million units at the end of fiscal Q4'16.

Apple's computers have been a steady source of revenue for the brand, though its iPhone, iPad, and other iOS devices have dominated the brand's overall revenue. Since 2013, Mac computers have accounted for about 9% to 15% of Apple's quarterly revenues.

At the end of 2015, Mac OSX represented 9% of the total computer operating system market, with Windows accounting for the vast majority of the remainder. Windows 7 was the leading OS at the time, about 43% of the total market, though that's been on the decline somewhat in 2016.

While that might seem daunting, it's important to remember that enterprise Macs were previously relegated to the creatives. However, we've seen a significant push for Macs in almost every department, from accounting and customer relationships to IT and field services. The C-Suite has been a major adopter of enterprise iPads, and now Macs are following suit there too in a limited capacity.

WHO USES THESE ENTERPRISE MACS?

Creatives still dominate the call for Macs in the enterprise workplace, but the desire has expanded beyond this traditional audience.

The next largest group we see asking about Macs are CEOs and C-Suite executives who desire a Mac. Some of this desire comes from perception as Macs being not only “better” but also a more significant status symbol. There’s also the C-Suite demand for iPads which we believe has bled over into a desire for Macs.

Enterprises are adopting iPads for many more roles where the dominant mobile activity is reading email and consuming content. Tablets are typically not strong content generation devices. This lines up with the typical role of the C-Suite as consumers of information but not necessarily generators. Your average enterprise CEO wants to read the latest reports while waiting in the airport or on their couch at home, but they’re typically not building the report itself. They’ll want to find out what the financials are right now, but won’t be diving into the database to determine it.

Today, Macs are filtering down to a wider range of positions and departments because enterprises have started rolling out policies allowing users to choose their device. Naturally, some will choose a Mac. As this availability grows, competitors need to keep up with the availability so that talent is not lured away for preference.

UNDERSTANDING THE COMPARISON

The Windows vs. Mac debate is in full swing in enterprises across the U.S. Now, we’ll review some of the key areas where a Windows device might make more sense from a financial, workload, and maintenance standpoint, plus counterpoints and leading workforce and savings advantages that Macs may provide your business.

At the end of the day, we hope to help inform your decision and make it easier for you to find what’s the best fit for your company and your teams.

WHERE DOES A WINDOWS MACHINE SHINE?

Windows has become a modern enterprise staple thanks to its ability to be managed at the server level. Active Directory enables IT teams to set permissions, control user access, install software, remove packages, apply updates, and much more from the IT desk, instead of needing to move to each individual machine to make changes.

The final selection of this eBook delves deeper into IT and system administrative controls, with a look at your options for both Windows machines and Macs. While Microsoft currently has the lead, that could easily change in the near future.

Beyond system controls, there are a few places where a Windows PC has advantages over a Mac in today's environment. Here are four of the key areas you should consider where Microsoft and Windows PC manufacturers may provide an advantage that is best suited for your team.

WARRANTY WORRIES DO PERSIST FOR SOME DEVICES

One area where the PC still holds an advantage is the warranty. It's hard to beat what Windows PC manufacturers offer and how they offer it. In our experience, there is not much difference between what warranties cover between Macs and Windows machines, but how they operate is significantly different. Using your warranty should be at the forefront of your mind when you're looking expanding Macs in your environment.

UNDERSTANDING WINDOWS PC WARRANTIES

PC manufacturers are your most common interaction point for warranties for the Windows machines in your office. Dell and HP, still two of the dominant forces in enterprise Windows equipment, each have their own internal warranty system and they're extremely streamlined and successful. Both brands provide high-quality care and the process tends to be straightforward.

In the PC world, you'll call your manufacturer, and they'll send someone out to your office and replace the part you need, all under warranty. This is not only true for enterprise environments but is often an option for personal equipment. So, if you provide equipment for remote workers, you can expect the same level of coverage without placing an undue burden on your staff.

MAC AND WARRANTY WORK

Macs can cause a little bit more trouble for your IT department if there is an issue where you need to use your warranty coverage. The coverage that comes with your Apple enterprise products is significant in terms of scope, but you will most likely need to send someone with your equipment down to an Apple Store for repairs.

Apple is great at solving the problem or replacing equipment promptly if your device needs it — for example, we've often used them to replace boards, and it's been quick and painless for the repair itself.

Unfortunately, in an enterprise setting you really don't want to be sending someone down to an outside store or location for your diagnostics and repair work. The Genius Bar setup is the warranty mechanism for Apple, but you should consider it in comparison to Dell and HP that have local contractors who come out and take care of warranty and repair concerns for you at your office.

Based on our conversations with warranty services and our experience providing service to customers' computers, there is no clear winner regarding whose equipment best stands the test of time in an enterprise environment. We've seen bad hard drives and network cards and other concerns on many different devices. Mac tends to have better quality control, but you should still expect to need your warranty on most machines.

It is worth noting that some third-party vendors offer differing service and support for Windows machines and Macs, so there are other options available to you. However, these and their prices vary for enterprises, so we focused on traditional warranty information in this section. If you want to learn more about warranties and our thoughts on third-party options, reach out to [Name] at [email-address] and let [pronoun] know you read this report and wanted additional information.

HARDWARE SUPPORT AND ACCESSIBILITY

Typically, the differences in available hardware from Apple and Windows PC manufacturers does not matter anymore. You can find comparable devices based on almost any stats and packages, though some Windows machines will have a greater array of ports available, while Macs often rely on adaptors to expand to a higher number of ports.

Apple also tends to use ports and other equipment that are not as common—often with good security or speed reasoning, but this is not necessarily helpful when it comes to overall usability. These port decisions may give you a greater need for new peripherals with each upgrade to your hardware.

In our experience, businesses often need more workarounds for Apple equipment to properly perform in enterprise settings, especially if your team travels for presentations. Some of the most common adapters we've seen are Thunderbolt-to-HDMI so that people can connect in conference rooms.

Many Windows laptops will now have HDMI ports, so you're less likely to need adapters in addition to the standard cables.

That said, there are some technical advantages to using Thunderbolt over HDMI, so Apple is not without good reason for the decision. This simply means you may need to pay for a few extra cables for your conference room or your road warriors if you deck people out with Apple gear.

For the average user, it may be an annoyance always to find an adaptor, make sure it is correct, and verify that it works. There's not much opportunity to test an adaptor before you get to the presentation room, so issues often involve troubleshooting on-site.

It's important to note that some software is overcoming this, such as network-enabled projectors and presentation tools, but these are not yet the

13 standard base on our experience.

WINDOWS HAS CAUGHT UP

In the past, there were many design and creation tools that were built for Mac and performed exceptionally well, while their Windows counterparts struggled. The most well-known of these disparities was early versions of Adobe's Creative Suite.

Mac users would claim that Windows was too slow for complex design and rendering, while people who preferred Windows would say that Macs could not handle related tasks with as much Grace. That's no longer the case, and we may even be seeing some of a shift in the favor of Windows on the design side.

Credit goes to the software makers as they've created versions that work equally well for both Mac and Windows machines. There are some small differences, but the main mechanics and core capabilities no longer give an edge to either side. It is now coming down to the device level and who can create something that's easier for the designer.

That latest lineup of devices is the best example that Windows could be trying to take away the hardware elegance crown. Microsoft's Surface Studio has caused significant interest in recent months as it appears to be a major leap forward for Microsoft. On the other hand, many are looking at the latest MacBooks as more of a small update and the latest iteration in a classic design. Apple maintained its focus on portability and a sturdy device, but improvements after waiting for four years have overwhelmed many in the enterprise space.

We're leaning toward Microsoft having a "win" in the competitiveness column here simply because major innovations to some available devices are going to generate word-of-mouth that could be comparable to what Apple had in the past.

The American Graphics Institute is also leaning on the Microsoft side of things, recently saying that the Surface Studio and the Surface Book were the most innovative desktop and laptop, respectively, for running Adobe Creative Cloud.



RELIABILITY & SAFETY

Windows PCs are easier to control on your network, and that typically makes them easier to secure. Protection is a simpler process in an all-Windows environment.

In the past, we might have noted that Windows machines were more likely to be infected with viruses or be the targets of Trojans and other attacks. However, 2016 was rife with Mac-focused viruses and sophisticated attacks. Essentially, this year pushed everyone to always have their anti-virus protections enabled at all times, including on those MacBooks that go home with employees.

It's a good practice that we already recommended and we'll continue to do so. In broad terms, a Windows PC might be safer because of familiarity and everyone knowing they need to have their anti-virus installed and kept up-to-date. This is an activity that your IT staff can set up easily, but there are some IT concerns about Mac environments that we'll address at the end of this report.

For general reliability, such as the dreaded blue screen of death or the frustrating spinning wheel, there is no significant difference in overall reliability that is true across all Macs and Windows PCs. You're going to find a mix of lifetimes and parts problems.

Our IT team has found MacBooks last a little longer than comparable Windows laptops, but it's just as easy to find someone who has had the opposite experience.

MAC'S BUSINESS BENEFITS

It's time for a moment of honesty. One of the main reasons that we're talking about Macs for enterprise positions is that people have fallen in love with their iPhone. It started the conversation and was compelling marketing, but there isn't a direct need in many cases.

We largely expect this trend that overall conversation to continue because of the name recognition Apple has, originating with our experiences as consumers. Apple's core business is iPhones, and they've dominated the market with a small lineup. People view the latest iPhone as a status symbol and the personal nature of these devices causes most to view their phone as an extension of who they are.

That's a marketing and branding success you just don't see with Windows. When it comes to Apple, you only have to admire (or hate, based on your experience) one company that makes the device and the OS. Windows machines split that love and hate between Microsoft and the device manufacturer, creating a slightly higher barrier to fandom.

This Apple appreciation has prompted many users to try a Mac in their office, and it's showing the market a wide range of positives and interesting considerations about the setup and its enterprise interplay.

FAMILIARITY AND FORM FACTORS

For many people, the call of a Mac comes from familiarity. If a team member already prefers the Mac and are practiced with it, they may prefer a Mac for their daily operations. The prevalence and popularity of Macs, both in the home and at work, have caused Macs to be a more common skill that employees bring from day one.

If you're moving your workforce to new equipment or onboarding a lot of new staff, offering them the option for Macs may reduce your training requirements for users who are more familiar with them. It's a way to remove some speed bumps and keep training cost down.

For some users, a Mac will be a major benefit because of its form factor. The all-metal body in a small form factor is a big draw for many IT staffers, while road warriors tend to like the touchpad that the MacBook offers.

There are odes to the MacBook touchpad from business and enterprise writers. One of the big reasons that they believe MacBooks will continue to dominate the touchpad space is that Apple creates the hardware and the software, so it can get everything just right instead of focusing on coding for a variety of different touchpads on different form factors with varying internals.

More people are switching to laptops with docking stations because more of our work is on the go. That means fewer desktops, so you're investing a lot more in the laptop plus a docking station instead of a traditional desktop. That allows Apple to make a greater case for your enterprise road warriors who might demand the best possible trackpad or mouse for their on-the-go work.

LONG-TERM COST SAVINGS

Here's a claim that you probably wouldn't believe unless you were already a Mac owner and unless we had plenty of data to back it up: major companies are starting to save money by choosing Macs and MacBooks, causing them to buy thousands of these models.

It's something we've seen on a small scale for quite a while — I have had a MacBook running here at the office for four years and that's longer than most other devices. However, we know how significant that savings can be thanks to IBM. In August 2015, the company rolled out a host of services and tools that relied on the cloud and were able to integrate Macs within an enterprise infrastructure and make use of the existing enterprise applications that were being run.

Putting their money where their mouth was, the company started adding more Macs to its own internal setup. This April, the Mac@IBM program announced that the company was scaling up Macs in its secure environments to the tune of 250 new devices each workday.

At the 2016 JAMF Nation User Conference (JNUC), IBM's Fletcher Previn announced that the company had reached 90,000 enterprise Macs and would hit 100,000 before the end of 2016.

That's zero-to-100,000 Macs in about 18 months. Why the massive rollout? IBM is saving a minimum of \$265 per Mac versus a comparable PC over a four-year lifespan. Some models are even reaching savings of \$535 over that four-year period. This is all due to residual and helpdesk costs.

Previn says that less than 3.5% of their Mac users are currently interacting with the help desk, compared to 25% of Windows PC users. That's the main point of the cost savings for IBM. He cited internal data that suggests 73% of people at IBM will choose a Mac when they get their next chance to upgrade their work equipment.

Mac adoption and availability is turning into a competitive advantage, and it's something that staff is actively looking for in the world today.

MACS MAY HELP WITH RECRUITING

We've actually seen a boost in Macs in multiple offices and enterprise settings thanks to BYOD policies. Broadcasting both BYOD and Mac-friendly atmospheres has been looked to as a recruiting boon for many companies.

Allowing people to choose their device has taken off at major brands, with General Electric's Former CTO Gregory Simpson saying that it the company was able to maintain competitive attractiveness to top talent coming out of colleges and high-tech firms by offering Macs as an option.

During his tenure at CBS Interactive, Peter Yared noted that Mac adoption rate reached nearly 35% when he shifted company policy to allow Macs as primary workstations for more users. CBS Interactive saw a boost in productivity and employee satisfaction that he attributed directly to Mac inclusion.

If you're looking to attract leaders in the IT and tech space, or perhaps the creative spaces, then it might make sense to see if your network can support more Macs and include the option in future forecasts in order to boost your overall competitiveness.

SOFTWARE IS NO LONGER A BURDEN

Before we get too deep into the pros and cons of Macs and Windows machines, we think it's important that you understand the reason LIVE Consulting went from supporting Macs in enterprise environments to also supporting them internally.

Software, the biggest barrier to the enterprise Mac, is no longer an issue. There are some very specific software packages that now use the cloud and remove limitations, such as IBM's packages that will was mentioned earlier, plus some of the most commonly used tool in the office environment.

In the past, there were some delays between when Mac and Windows software was available or when updates were launched, and (outside of the creative suites) often you had Mac versions that were poor imitations of the Windows software we needed.

Thankfully, we typically do not see that anymore. Even many leading automation packages for your CRM, marketing, accounting, and daily task management are rolling out similar updates, functions, and interfaces for both platforms at or near the same time.

The best example of that is Outlook. It's fair to call the first version of Office, especially Outlook, for the Mac a sub-rate version. Outlook, in particular, had troubles with Office 365 and Exchange Server communication that could make it nearly unusable.

But, changes that started to arrive in Office 2013 for Mac brought it to an equal playing field to the Windows versions of the Office suite. Microsoft, perhaps one of the staunchest holdouts, now views developing enterprise-grade programs for Mac to be a smart business practice.

SOFTWARE IS WHY WE'VE STARTED SUPPORTING MORE MACS

Updates for programs like Outlook and the MS Office suite as well as common SaaS applications playing well with Macs is one of the chief reasons we're supporting more customers who want to incorporate Macs. From our end, there's less juggling and concern, and we're able to give our customers what they want.

You can likely do the same for your employees.

We used to have dozens of reasons to use Macs in the workplace. Now, we approach it as something that's definitely possible as long as it makes sense when you weigh the pros and cons relative to your industry and deployment.

THE ROLE OF THE IT DEPARTMENT IN OUR CONSIDERATIONS

At LIVE Consulting, we try to approach networked, enterprise hardware from a variety of viewpoints to make the best recommendations and support the equipment that will best serve our customers.

In the Windows-vs-Mac debate, we've noticed that usability and selection are often based on each individual's preference in terms of familiarity, continuity with existing equipment and software, and the user experience that they are used to already.

Enterprise-wide decision making often needs to look past individual tastes, we suggest initially approaching Mac adoption for your business from the IT department's perspective, with a focus on network management as well as affordability and your staff's time.

To that effect, here are a few things you'll want to know and think about to manage the Macs you include in your enterprise network.

THE RELEVANT IT MANAGEMENT BASELINE

Small businesses can use a variety of operating systems and hardware setups because it does not take a significant amount of time to keep a small batch of devices running smoothly and talking to each other, thanks largely to native Mac and Windows software.

When we get into environments with more than 5 to 10 machines, the IT department wants to use some sort of larger system to manage all the computers and devices connected to a network.

Historically that has all been done with Active Directory from Microsoft. In the past, using Active Directory allows the administrator to do everything on the network, assuming all the PCs were running Windows 2000 or above. It provided control for setting access and managing software, usernames, passwords, and almost anything else on the network. The introduction of Macs created a challenge for Active Directory controls.

MACS IN MOST OF TODAY'S BUSINESSES

While Active Directory allows network administrators to manage Windows devices at the server level, most Mac deployments don't have this benefit. Macs cannot be controlled in the same way and often require more work directly with the device. This is most commonly the case with older equipment and with software installation.

Standard enterprise rollouts will require a technician to go to each Mac directly when you need to update preferences, install new software, remove options, and set a variety of permissions. For small teams using Macs, like your design and art departments, this won't necessarily be a concern and doesn't add too much time for your staff.

However, if you scale to 50 Macs or eclipse 100 units, it eats up a lot of time to go around to each and every machine. There are some companies building new software and services that directly target this problem, but the off-the-shelf solutions are in their infancy and won't necessarily solve your issues or provide a smooth control path.

ADDING MACS TO AN ACTIVE DIRECTORY DOMAIN

The latest Mac OSX build does allow for some control through Active Directory. When you connect your Mac to your domain, Windows Server can automatically build the computer object in Active Directory like it would with a Windows machine.

Microsoft and Apple have built some systems to work together, including Microsoft's System Center Configuration Manager supporting Mac OS X 10.10 (Yosemite, released in Oct. 2014) and above, as well as the renamed macOS Sierra (what would have been Mac OS X 12).

This gives some basic controls for new Macs, but you won't see a complete 1:1 parallel. Most tools are still designed for Windows machines so we believe you should expect some compatibility issues to arise. That means your techs are going to each machine in the event that a new system, update, software, or removal causes an issue.

your Mac interact with your network and allows your admins to implement user access based on the mobile profile, using mobile-friendly connections for software distribution, email, and asset management.

OUTSIDE AND ADDITIONAL CONTROL THOUGHTS

There are a few integration options that are available to you, but it's best to make sure you're comfortable with managing these options before relying on them for your enterprise Mac management:

- Apple Remote Desktop can be used to deliver commands to Mac clients when the Mac is joined to an Active Directory domain. Good for small teams and small networks, but automation can be difficult to create reliably.
- Third-party Cloud-based identity management services can manage Macs and connect to your Active Directory identity infrastructure for authentication and profile policies via single sign-on and other ID technologies.
- Fire up a Mac OS X Server and rely on the Mac Profile Manager to set your policies and Active Directory groups. You'll need an Open Directory domain as well as an Active Directory service. It's an easier management policy if you have the workforce to keep up with it, but you'll pull out less hair when it comes to your shared printers and files.
- Mobile device management tools and framework provide the backbone for some Mac controls, like AirPlay. You can use the MDM architecture to have your Mac interact with your network and allows your admins to implement user access based on the mobile profile, using mobile-friendly connections for software distribution, email, and asset management.



CONCLUSION

IT'S ALL PERSONAL CHOICE

It's the job of IT departments, even outsourced IT operations like LIVE Consulting, to work with the factors that the rest of the company or the client wants. There are now, thankfully, many different ways to work with groups who need or want their Macs.

We've outlined a variety of the important distinctions between managing Macs and Windows PCs, so as a company who is considering an expansion of Mac offerings to employees, you must weigh the pros and cons of each deployment. And there are indeed pros and cons.

Hardware, software, availability, compatibility, and stability are all starting to even out. Nuances in each segment may make one device more appealing for your enterprise setting. But, from a technical standpoint, there are few reasons that would rule out a Mac or Windows PC from consideration.

While there's no clear winner, understanding what you need to be able to do to support Macs in your environment highlights if you're able to support both. That option may be the biggest possible benefit to your brand.

Buying a Mac for your new employees doesn't guarantee that they'll be happier or more productive, but providing them with the choice could be a competitive advantage for your younger workers. Deloitte's 2016 study on the millennial workforce shows that most want the ability to work flexible times and that remote work boosts their productivity.

As the days progress, your workforce is going to grow more independent from a physical location and they'll demand flexibility in factors from work hours to hardware. Providing them the personal choice to pick their hardware will meet demands for this flexibility and promote the feeling that your staff has more control, which makes them more loyal and boosts operational efficiency.