

# THE NEW WORKPLACE NEEDS NEW PCS

WORKPLACE TRENDS ARE DRIVING DEMAND FOR NEW TYPES OF ENTERPRISE PCS

## SUMMARY

Enterprise PCs are behind the times. As people become more reliant on connectivity, convenience, and speed from their personal smartphones and tablets, they are demanding the same from their work PCs as well. Millennials have their own expectations about work and devices for work. Workplaces are enabling, and even encouraging, more mobility. And new interface and usage models proliferate. Companies need new PCs to address the new workplace. Enterprises should consider upgrading their fleets of Enterprise PCs at a faster pace than previously. Recent hardware improvements make new Enterprise PCs even more attractive than the current average [5 year old installed base](#). Many of these improvements are a result of introduction of the new Intel Skylake processor and many of the platform improvements that come along with it.

## WORKPLACE TRENDS: DEMANDING MORE FROM PCS

Millennials (born after 1980) have high expectations for technology and generally expect their Enterprise PCs to function at least as well as their smartphones. With [smartphone adoption over 90%](#), Millennials are accustomed to connectivity, convenience, and speed wherever they are. It stands to reason that they would expect their computers to be responsive, reliable, and attractive [like their smartphones](#) as well as lightweight with good battery life.

The [ubiquity of wireless connectivity](#) means anyone can work from virtually anywhere. The ongoing shift towards mobility puts a greater demand on Enterprise PCs. Smaller and lighter are usually better. Connectivity, whether wired or wireless, needs to work. This doesn't just mean connectivity to the internet, but also connectivity between devices and how seamlessly data can be transferred. Power efficiency is also a big factor, but it must balance with performance. Devices have to deliver a good experience while lasting a long time on a relatively small battery.

PC makers have responded with various takes on mobility: thin-and-light Ultrabook, highly ruggedized, desktop replacement. Many also added touch, which in some ways makes the PC a more intimate device. Touch allows those use cases that require a higher level of immediacy versus office productivity, for example in front of a customer. A newer PC design can help shrink the time between customer introduction and closing

the sale. The thin, light, and connected PC goes with the user to wherever the customer is and morphs into whatever form factor best suits the customer. Arrange a 2-in-1 into tablet mode, and answer customer questions by looking up information through a touch-based interface. Put a 2-in-1 into tent mode at a desk, and you are showing the customer their options; let them touch what they like. If they're ready to sign documents, fold it into tent mode and sign. After the sale, the worker then uses the PC as their productivity device.

### **HARDWARE IMPROVEMENTS HELP MEET NEW DEMANDS**

As Enterprises refresh their installed base of PCs, they need to support these new workplace demands. Important hardware improvements in mobility, connectivity, design, performance should help.

#### ***TECHNOLOGIES IMPROVING MOBILITY IN THE WORKPLACE***

New processors and connectors enable thinner, lighter, more efficient, and more powerful PCs for greater mobility. Intel's 6th Generation Core Skylake architecture brings power efficiency close to levels where PCs can last as long as smartphones. The Intel Core i3-300M series from 5 years ago, which was a 35W TDP (thermal design point) chip, used much more power than the majority of today's Skylake processors, which can have typical max power draw as low as 4.5W. This results in is a much longer battery life with laptops lasting from about 8-10 hours, compared to half that for a Core i3-300M, with significantly higher performance.

Thunderbolt 3 and USB Type-C are faster and feature smaller connectors than previous generations. For example, the new Dell Latitude 13 7000 Series with Thunderbolt 3 uses the USB Type-C standard connector. This single cable can deliver up to 100W of power for charging the notebook while also sending gigabit Ethernet, DisplayPort, HDMI, VGA, and USB 3.1 SuperSpeed. Dell's Thunderbolt 3 dock is capable of connecting two 4K monitors with a single Thunderbolt 3 cable without a mess of cables when on the go.

#### ***CONNECTIVITY TECHNOLOGIES IMPROVING THE USER EXPERIENCE***

Storage and connectivity are faster than ever. In 5 years, Wi-Fi alone has gone from roughly 450 Mbps (802.11n) to more than 2 Gbps (802.11ad). Beyond that, the introduction of 2x2, 3x3 MIMO Wi-Fi with MU-MIMO, and WiGig have made connectivity feel more instantaneous. In the same 5 years, wired Thunderbolt bandwidth has increased from speeds of up to 10 Gbps to 40 Gbps, **four times** the original bandwidth.

Such speed enables the fastest peripherals, like storage arrays and 8K cameras, through a tiny cable without the need for a power adapter. Connectivity improvements are complemented by vastly improved storage speeds. Without advances in storage speeds, any improvements in wired and wireless connectivity would be pointless, because the storage is usually the bottleneck. PC read speeds have moved from spinning drives (up to 200 MB/s) to solid state (2,000 MB/s with the latest generation of NVMe storage), with solid state storage being the standard in most mobile PC form factors thanks to companies like Intel.

### *DESIGN & FORM FACTOR IMPROVING PERCEPTION & EXPERIENCE*

This new class of Enterprise PCs has very high resolution displays that help improve customer intimacy, detailed productivity, and the overall feel of quality to the user. This can be seen through many of the notebooks which come in Quad HD (1440P) or Ultra HD (4K) resolution, many with touch. With higher resolutions, users are given more workspace than ever before, which enables more multi-tasking and productivity for both all-in-ones and notebooks. Touch displays on notebooks and all-in-ones [allow for more productivity](#) and more natural user experiences that come closer to their smartphones and fills many of the expectations of the new workplace.

New PCs with many of the aforementioned technologies can also be used to [help recruit millennials](#). Millennials put value on [having the latest and greatest hardware](#) at work because they use their PC everywhere. Millennials care about what kind of computers they have to use for work and they [expect that they will have decent hardware to work with](#).

New usage models for sales and marketing employees in front of customers may also drive more intimate user experiences and interactions, [improving relationships](#). New desktop form factors like all-in-one and mini PCs (like Intel NUC) allow for better first impressions in lobby areas and can serve as kiosks for customer interaction. New laptops with improved functionality, including 2-in-1 Ultrabooks, allow for better collaboration and presentation to customers.

New industrial designs with the latest generation of PCs are designed to be more attractive than the previous generation, especially more attractive than those from 5 years ago. The New HP EliteBooks, Dell's new XPS 13 and 15, and Lenovo's new X1 line all exemplify better design IDs that improve the overall perception of the brand and those that use them. It is harder to distinguish this new class of Enterprise PCs from the best consumer PCs, and that is a massive change. Employees simply [like better design](#)

that more closely resembles what consumers are using, while meeting Enterprise computing needs.

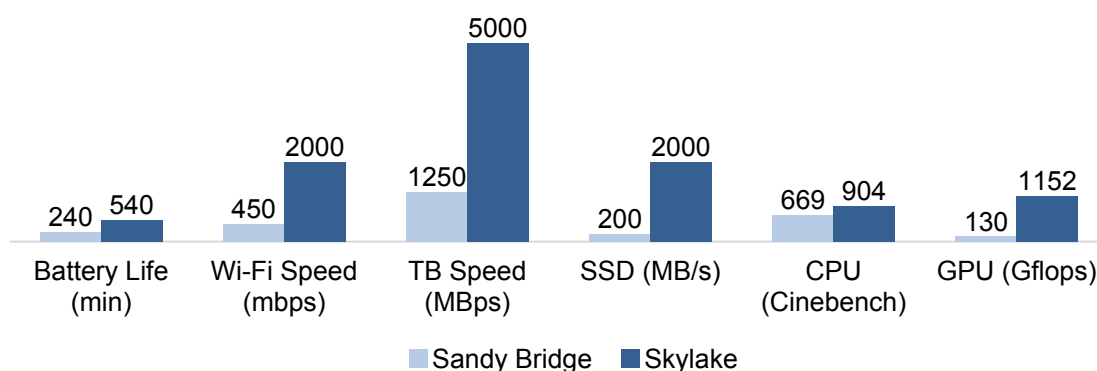
**RESPONSIVENESS & PERFORMANCE IMPROVE OVERALL EXPERIENCE**

New operating systems like Microsoft’s Windows 10 are faster and more feature-rich than previous generations. Windows 10 is designed meet the expectations of a generation used to fast mobile devices, integrating with Microsoft’s cloud services and productivity software. It also features Cortana and DX12, both of which are designed from the ground up to drive better performance, responsiveness, and ultimately a better user experience.

Intel’s Skylake processors bring not only integration with Windows 10, but also performance improvements in Windows 7 and 8.1 over chips from 5 years ago, the average age of currently installed PCs. Skylake delivers about 25% more performance over Sandy Bridge while also reducing power. GPU performance on current generation Intel integrated graphics is in many cases over 500% better than previous generations of Intel graphics over the course of the 5-year average PC age. The improved graphical performance is partly what has enabled the higher resolutions mentioned earlier.

Smartphones helped set the new responsiveness bar. Now more than ever, workers dislike working on old PCs. Newer and faster PCs offer better user experiences which improve user experience, productivity, and ultimately morale.

**FIGURE 1: PUTTING THE PIECES TOGETHER**  
**Improvements Over 5 Years**



Improvements to battery life and performance in Intel chipsets are compelling reasons to upgrade Enterprise PC systems with Skylake.

## CALL TO ACTION

New work trends and the introduction of millennials to the workforce are transforming Enterprise client computing. Users' demands of their Enterprise systems are evolving, and the ways that the PC is used are shifting. These changes are being addressed and enabled by the huge technological advances made over the course of the last 5 years. Upgrading to the latest Enterprise clients will enable companies to boost productivity. Moor Insights & Strategy recommends immediately testing out the new breed of Enterprise PCs based on Intel's Skylake processor with an active upgrade plan.

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