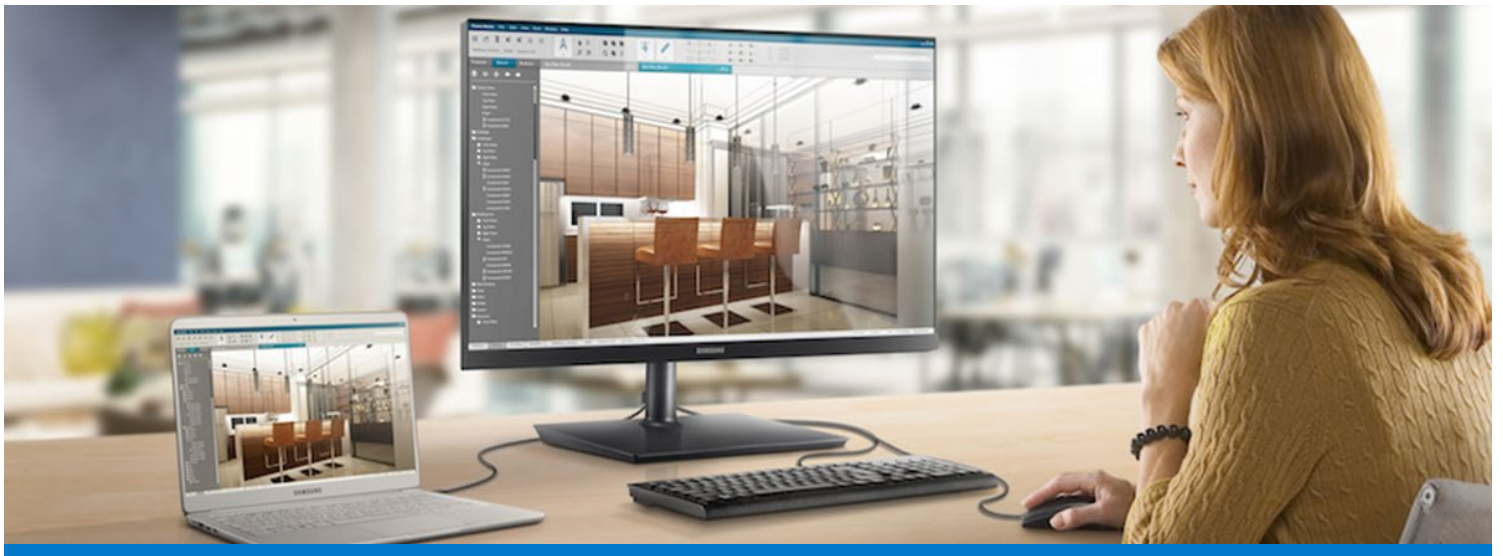


## Position Paper

# More than pixels: Desktop monitors are production hubs



## Powering on

When tablets and extra-large smartphones came onto the market, there were suggestions that people didn't really need full-size computers and monitors anymore because their work could all be done with the microcomputers in their hands. Those suggestions, it turns out, were exaggerated.

Tablets and smartphones are incredibly useful, but they're just part of the toolset needed to be productive on the job. The computing power inside handheld devices might be enough for some job tasks, but it's difficult – if not counterproductive – to get work done on those small screens alone.

Most contemporary jobs' multitasking requirements greatly benefit from full-size desktop monitors, which provide a large visual canvas. Full-size monitors, especially curved ones, also offer operational and health benefits for both employees and employers.

This position paper looks at how monitors are central to workstations both in office environments and, increasingly, at home. You'll learn about a variety of new types of monitors, as well as technologies that boost

viewing quality and workstation utility. You'll also learn what's most important in selecting the right monitor for you, your team or your company.

## Screens are ubiquitous

Most office jobs – from healthcare to research to finance – put people in front of screens all day. These jobs usually also require workers to run multiple software applications that do everything from managing specific operational tasks to facilitating collaboration and discussion.

Because people are multitasking all day every day, the most effective way to be productive is to use a workstation monitor that can show them most or all of their key applications simultaneously. Jumping between browser tabs and opening and minimizing application windows is a time-consuming, unproductive annoyance.

When people consider workstation setups, they should not be thinking just about having a monitor in the mix. They should be advocating to have the right monitor for the job's demands and the circumstances of the workstation.

## Monitors vary greatly

For users who just need a small flat screen to connect to a display signal from a PC, there are plenty of low-budget choices from big-box stores that can do the basics. But decision makers and direct buyers should know that monitors are not all just different-sized and -shaped variations of the same thing. Their underlying technologies and capabilities vary greatly, and lower-budget options don't meet all users' needs.

Here are some of the key characteristics that distinguish high-quality, work-optimized monitors from lower-budget displays:

- **Size and shape:** Wide-screen, extra-wide and curved displays have changed desktop dynamics and ergonomics for power users.
- **Resolution:** Full HD and 4K Ultra HD, as well as extra-wide resolutions that go beyond 4K, pack millions of pixels on screen for incredible detail and clarity – critical for tasks from seismic survey analyses to photo and graphics production.

For super-wide displays, double-check that your laptop and operating system (OS) support the less conventional resolutions.

**Color reproduction:** Samsung uniquely markets quantum light-emitting diode (QLED) display technology, which uses a Quantum Dot color filter on top of a premium LCD display to deliver a vast range of colors that don't show on conventional monitors.



Some displays also support high-dynamic-range (HDR) technology, which reveals fine details in the darkest and brightest scenes, details that are lost on conventional monitors. HDR lets you see everything.

**Refresh rates:** Anyone working with fast-motion content and highly detailed imaging should pay particular attention to refresh rate: the number of times a monitor updates with new images each second. While viewers may see a solid visual on screen, the screen is imperceptibly changing as rapidly as 240 times a second. The higher the refresh rate, the smoother the visuals.

Super-high refresh rates are not all that important to desk workers focused on word processing, spreadsheets and emails. But in more visual professions like creative and game development, high refresh rates are invaluable. In recent years, more specialized,



high-performing monitors have emerged that support 120Hz, 144Hz and even 240Hz refresh rates. These high refresh rates ensure ultra-smooth content viewing, no matter how fast-paced the on-screen visuals may be.

**Streamlined connectivity:** More monitors are supporting the USB-C connector standard that many consumers are familiar with using for their smartphones and other technology. Monitors that fully support USB-C can act as hubs that streamline workstations.

There is a critical distinction between monitors that have USB-C ports and those that are fully compatible and support the USB-C standard. The latter packs multiple functions – signal, data transfer, power – in a single cable and enables a display to take the place of a pricy, finicky USB hub and docking station.

## Workstation central

Increasingly, monitors are the hub of workstations. Even smaller monitors are the largest, most-used components of a workstation. Monitors can also be the hub because of USB-C support, which streamlines cluttered workstations.

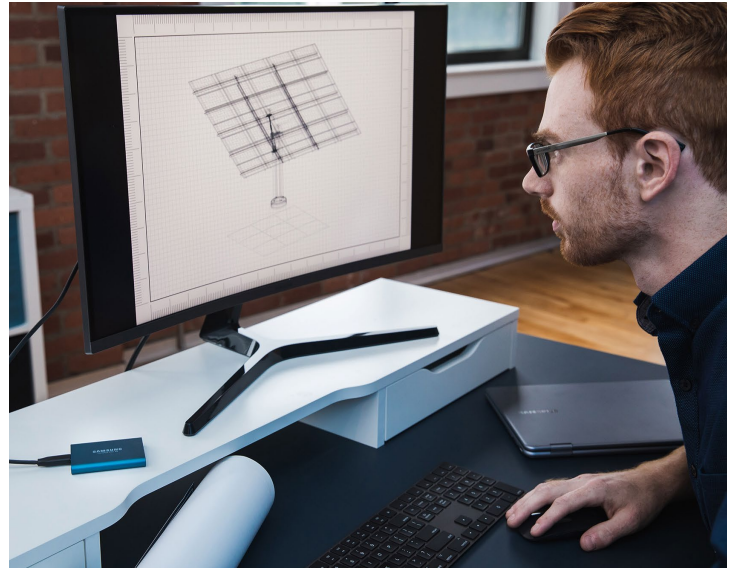
A display that supports Thunderbolt 3 through the USB-C standard is particularly powerful. A cable from PC to monitor provides a high-speed, QHD display signal. And with Thunderbolt 3, the connector is also bidirectional: While the cable is sending a signal and commands from the PC to the screen, it can also send back power to charge the PC.

Some monitors that support Thunderbolt 3 have more than one USB-C connector at the rear, so they can connect to a PC while the second port does something else, like daisy chaining the signal to a second screen. The monitor can also serve as a USB hub or dock through conventional USB ports that connect peripherals like a mouse and external keyboard, making the display far more than just a visual canvas.

## Monitors up to the tasks

It's good practice to fit a workstation's monitor to the type of work being done there, and to the workstation's circumstances.

Not everyone needs the benefits of premium monitors. A company's finance team, for example, working on invoices, spreadsheets and bookkeeping applications, will get little value from HDR or super-fast refresh rates. But they'd make great use of widescreen displays that allow them to view all of a budget's many columns at



once – without using a scroll bar, as they'd need to on conventional screens.

Most job roles require multiple applications be open simultaneously through multitasking-filled workdays. Conventional screens can layer application windows atop one another or support many browser tabs, but busy workers can be more productive when their display canvas is large enough to keep all the key elements always open and visible.

A single display providing all those extra pixels is generally preferable to a tiled pair of displays. Using multiple screens may drive up costs and will almost certainly introduce complications by requiring extra cables and switching boxes to make it all work – never mind the extra energy required to support both screens. When twinned screens are positioned in the center of a workstation, the visual sweet spot isn't the content and critical information but the inner edges of the screens.

Before widescreens, side-by-side screens were a logical solution. Now it's an unnecessary compromise.

## Circumstantial workstations

The global health crisis in 2020 accelerated what had been a steady increase in work-from-home arrangements. While many purpose-designed workspaces have equipment matched to the size and configuration of an office's desks and cubicles, home-based offices vary from worker to worker. A monitor that seemed too small when it was on a desk in an office with an open floor plan may prove too large for a new home office space that's been carved out in a spare room.

On the flip side, new home office arrangements may allow some people to upsize their workstations and put in place the monitor of their workday dreams, where size doesn't present any barriers. To simplify the shift to remote workspaces, some companies have provided staffers capital budget allowances to outfit their spaces with the supporting tech they need, including monitors.

Samsung's display line covers a full spectrum of solutions for different situations, from a space-saving monitor that can be pushed flush against a wall – recovering up to 40 percent of desk space – to a 49-in. extra-wide curved screen that immerses the user in their work.

## Nothing novel about curves

Flat-panel displays are commonplace and conventional, so curved displays may seem gimmicky upon first impression. But these screens are anything but novelty items.

Curved displays, which can be as big as 49-in. diagonally, have well-defined workstation benefits. Notably, a curved screen mimics our natural field of view.

Curved monitors have technical ratings, with the R after the number representing radius. The smaller the R value, the deeper the curve. With engineering advances,

Samsung designers are pushing that R value, offering progressively curved monitors with 1800R and 1500R ratings.

Research has shown that curved monitors – particularly widescreen curved monitors – reduce eye strain. On a flat display, the information in the center is closer to a viewer's eyes than the information at the edges, so the viewer's eyes are forced to work harder to focus and refocus as they scan the display.

Curved screens, by contrast, reduce visual distortion and strain by allowing the user to see everything on screen from roughly the same focal distance.

Curved displays are also easier on the upper body. The curvature enables peripheral viewing, which reduces the need for users to swivel their heads to view the edges of the screen.

## Maximizing productivity

Many professions involve spending many hours every day in front of screens. Fitting monitors to the needs and dynamics of the task at hand – and where it's done – helps maximize productivity for all of them. From the many available options, you can find a monitor perfect for your workday needs.

Learn more about Samsung's desktop monitors [here](#).