An Introduction to 4K
A profound leap in clarity for pro users and more

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Still in the early stages of market penetration, it will be some time before 4K display technology becomes the mainstream standard for any type of display, be it desktop, large screen, or TV. In the meantime, 4K displays offer premium visual benefits for individuals whose livelihood relies on the processing of visual data, as well as organizations with well-matched budgets and applications.
Introduction

The latest next big thing in digital display technology, 4K resolution sounds impressive by any of its many names. Originally introduced as QFHD for “Quad Full HD,” this latest generation of pixel performance offers four times the pixel count of Full HD 1080p at the same 16:9 aspect ratio. Now referred to by the acronym UHD (ultra-high definition), this resolution packs roughly 4,000 pixels horizontally and 2,000 pixels vertically (3840 x 2160 to be exact)—thus giving rise to another popular nickname: the 4K2K display. Most often, however, this impressive pixel count is succinctly summarized as simply 4K or 2160p.

The tech media is abuzz with news of the 4K revolution, and consumers are more aware than ever of the benefits of increased pixel densities thanks to Apple’s massive marketing push for its “Retina” display, plus the proliferation of smartphones boasting 1080p screens, and tablets promising to deliver 2.5K (2560×1440). Tech enthusiasts, early adopters, and even many garden variety consumers are eager to experience 4K. All of which leads to the question: Who can best benefit right now from this emerging technology?

PC vs. TV

Much of the noise about 4K is being generated by home theater enthusiasts eager to enhance their viewing experience. While 4K will no doubt deliver the anticipated viewing rewards for this audience, the true transition to 4K TV is far from underway, primarily due to a lack of 4K content and broadcast service support. Many industry analysts have thus proclaimed the PC to be the perfect partner for pairing with a 4K display.1,2 As summed up by one such observer, “Unlike 4K TVs, higher resolution monitors offer some real practical benefits. We sit closer to monitors, so individual pixels are much easier to discern. More screen real estate is a major boon to productivity. And scaling the operating system, like Apple does with its ‘Retina’ displays, results in much sharper text.”3

Supporting the assertion that 4K has begun the journey to mainstream adoption by PC users, research firm NPD DisplaySearch projects that 4K desktop monitor shipments will reach 2 million by the end of 2014, due to decreased production costs that in turn are leading to declines in average selling prices (ASPs). By 2017 the firm forecasts shipments will account for around 8% of the PC display market, with ASPs for 4K monitors declining from $1,347 in 2014 to $927 in 2017.4

While these numbers do predict eventual mass market adoption of 4K technology, eight percent is still a small piece of the pie, and full transition is likely to take several more years. In the meantime, there are a few distinct groups of users for whom the investment in a 4K display today is warranted.

4K desktop displays: Powerful benefits for power users

Anyone whose professional work revolves around detailed visual data can benefit significantly from the unparalleled visual clarity offered by a 4K desktop display. This includes graphic artists, CAD/CAM designers, CGI animators, serious photographers and video editors, geo-physical mapping professionals, and many types of...
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engineers. Clarity of detail is of critical importance to professionals in these, and other visually-oriented professions. Greater resolution and higher pixel density deliver finer detail for more legible text and more visible onscreen information. As noted in one article advising on the ideal attributes of a graphic design display, “When it comes to pixel resolution, more is better, especially if you’re doing highly detailed work.”

Vision care professionals second the recommendation for using the highest resolution monitor possible to help reduce the eyestrain and related symptoms that occur in 50-90 percent of computer workers. For professionals whose workday revolves around intense and prolonged focus on their display, the crisp, sharp images offered by 4K resolution can improve their physical comfort and quality of life both on and off the job. Easier on the eyes, UHD can help professionals accomplish more, without the eye strain, slouching, and headaches that can result from attempts to compensate for tired eyes.

Beyond the brilliantly detailed graphics and video, 4K delivers a bigger work surface without a loss in pixels-per-inch, a productivity-enhancing benefit for anyone working with high-resolution images or video. This added screen real estate enables large UHD displays to effectively function as both screens in a dual-monitor configuration – a setup considered requisite by many CAD professionals. The result: more desk space plus the convenience and ease of dual displays without the distraction of two bezels or clutter of additional cords.

In short, for users whose profession requires intense daily focus on their display, 4K can deliver increased productivity, improved quality of work, and added comfort in the form of reduced eye strain and a more efficient use of workspace.

4K desktop displays: beyond pro users
In addition to professional use by power users who stand to benefit from improved productivity and reduced eye strain, tech enthusiasts will also be among the early adopters of 4K technology. This distinct group of energetic users will have already created content at UHD or greater resolution and will be willing to pay a premium to get their hands on the latest display technology.

General entertainment enthusiasts, too, are likely to be at the forefront of early 4K usage as ultra-high definition promises to deliver incredible imaging for movie content, as well as a more immersive experience for video games. Often among the first to adopt new technology, entertainment enthusiasts and home theater aficionados may undoubtedly be among the heaviest early and eventual users of 4K technology. Whether or not they are willing to make the move will depend on their home entertainment budget and desire to upgrade their home theaters to support 4K displays.

4K large screen interactive displays
The stunning clarity offered by ultra-high definition technology makes it an attractive option for large
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In a large desktop display. With four times the resolution of Full HD, users enjoy more on-screen content with higher clarity at a more mainstream price tag. Versatile connectivity options enable efficient multitasking and enhanced productivity, with the ability to toggle between inputs, daisy chain multiple monitors, or simultaneously display two inputs on one screen. The sleek design and striking chrome finish lend the VX2880ml a futuristic appeal worthy of its stunning graphics.

CDE8451-TL 84” 4K Interactive Large Format Display

Big, bold, and a terrific team player, the ViewSonic 84” CDE8451-TL Interactive Large Format Display offers one of the most vivid collaboration canvases available for medical training, geographic imaging (GIS) and other scientific applications, corporate boardrooms, wayfinding, and other high-end uses. A fully integrated large-screen touch solution, the CDE8451-TL delivers four times the detail of a Full HD display. Six-point simultaneous touch plus ViewSonic® ViewBoard™ software enable multiple users to simultaneously write, highlight, edit, and transform documents and images on-screen in real-time using a finger or stylus. Screen recording and magnifying functions, meeting notification alarms, and the ability to access online resources add further convenience. Designed for heavy usage in high-traffic areas, the robust display features a tempered glass overlay, anti-glare treatment, and rounded corners.

Conclusion

Still in the early stages of market penetration, it will be some time before 4K display technology becomes the mainstream standard for any type of display, be it desktop, large screen, or TV. In the meantime, 4K displays offer premium screen interactive display applications. As time passes and costs decline, 4K displays will become the norm here as well as in the realm of desktops. For the time being, large interactive 4K displays deliver a premium interactive experience for those positioned to benefit most from its advantages.

The use of interactive white boards in an educational environment has been demonstrated to deliver improved learning outcomes. While not currently cost-accessible for widespread educational use, interactive 4K displays are well suited for specialized curriculum in support of STEM (science, technology, engineering, and math) initiatives in K-12 as well as for higher education lab courses in these areas.

Other applications well served by the size, collaborative capabilities, and detailed images offered by large touch screen 4K displays include:

- Corporate boardrooms
- Medical training
- Geographic information system mapping and other GIS applications
- High-end hospitality and luxury retail installations
- Wayfinding signage

ViewSonic® 4K displays

A leader in display technology for over 25 years, ViewSonic is at the forefront of ultra-high definition display development. One of the first companies to debut a 4K interactive display at the Consumer Electronics Show in 2013, ViewSonic currently offers a competitively priced 4K desktop display and a premium 84” 4K touch screen display.

VX2880ml 28” 4K Desktop Display

Ideal for CAD designers and other professional users, the 28” VX2880ml delivers stunning 4K resolution in a large desktop display. With four times the resolution of Full HD, users enjoy more on-screen content with higher clarity at a more mainstream price tag. Versatile connectivity options enable efficient multitasking and enhanced productivity, with the ability to toggle between inputs, daisy chain multiple monitors, or simultaneously display two inputs on one screen. The sleek design and striking chrome finish lend the VX2880ml a futuristic appeal worthy of its stunning graphics.
visual benefits for individuals whose livelihood relies on the processing of visual data, as well as organizations with well-matched budgets and applications. The logical choice for applications such as computer graphics, photo processing, CAD/CAM, and multi-operation environments, 4K displays offer the ability to improve productivity and quality of work while reducing eye strain and desk clutter. Large touch screen displays with ultra-high definition 4K resolution can likewise deliver improved quality and efficiency for STEM education, medical training and GIS applications. These vivid interactive displays can further add functionality and cache for luxury hospitality and retail environments and corporate boardrooms.


