

Is it time for Ultra HD?

 By [Paul Dival](#)

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Ultra High Definition (UHD) is here and it is beautiful. At 2160p compared to Full HD's 1080p - that's roughly four times the amount of pixels and 60 frames per second, not 24 - it's a "see it to believe it" kind of experience.

To make the experience fully immersive, UHD also brings us 24-channel sound, the ability to browse and run applications (Netflix, Pandora, etc) while you watch. Is it a good buy right now though? It depends on what you are looking for.

Ultra HD screens are relatively expensive: a 55-inch UHD TV costs about R60,000, a 65-inch R90,000 and a 86-inch over R175,000. Unless you have money to burn and are a videophile, the time may not be quite right. If you do buy, you may not be able to enjoy all those pixels fully just yet. While standard and HD grade visuals can be up-scaled for viewing on a UHD screen, the UHD content production line is in its infancy and broadcasters are unlikely to offer UHD channels for some time.

While there are cameras available that are capable of recording UHD footage at 60fps at resolutions of 3840×2160 (8.3 megapixels) for 4K UHD, this puts a lot of pressure on storage capability - try 4TB of data for 20 minutes of footage. It makes sense for professionals to use the best cameras they can and capture footage in the highest resolution possible to ensure the longevity of their material since the digital images can be downscaled to HD or even standard definition. However, they will need to adapt their capture and store strategies.

For the consumer, there is another challenge. At present, it will take serious compression to put a UHD quality movie onto any kind of easily portable physical storage. Consider that a high-capacity Blu-ray disc in BDXL format holds 128GB. Sony and Panasonic are currently teaming up to develop a 300GB disc by 2015, but this is still not enough to hold a full length UHD movie.

Similarly, streaming UHD format movies would require at least 15Mbps throughput, even at 24fps compression rates. You would need fibre optic grade throughput to the house to stream full UHD. In South Africa, many are lucky to get 2-4Mbps, putting this out of our reach for now.

And what about broadcasting? At present, an HD channel takes up four times the bandwidth of a standard broadcast. A UHD channel would take many times more than that, demanding a new standard in compression. In addition, decoders would require a new chipset and software to decode UHD. With High Efficiency Video Coding (HEVC), a new video compression format, only just broadly accepted (October 2013), it's fair to say UHD broadcasting is in its infancy globally. HEVC is essentially expected to double data compression ratios to provide better video quality at a low bit rate. It will support resolutions up to 8192×4320 (8K).

So will you buy into UHD? HD technology in South Africa has over the past decade seen fair adoption, with HD taking about 20% of the market. UHD is likely to take only 1 or 2 percent of that market in the near future. For consumers, the cost/benefit equation may not yet make sense when it comes to buying a UHD TV. For professionals in the film and video production industry, however, the time may be right - their new investments should certainly support 4K. 4K UHD cameras are being launched with reasonable price tags. With the right equipment, professionals can futureproof, or at least extend the longevity of their outputs.

As to where the future of visual display may lead, perhaps the only constraint in the future will be the size of your front door and, to some extent, the size of your wallet.

ABOUT PAUL DIVALL

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