

# Entertainment Challenges in Today's Digital Society



## Part iii of vii

by Gabriel Dusil

### 3. Is there a future for 4K video in broadcast?

Yes, there is a future for 4K in broadcast but it will take some time. Broadcasters will trail in the adoption of 4K Ultra-HD video (UHD) for a few reasons - the main one being the tremendous amount of bandwidth real estate needed to transmit 4K over a broadcast service. Looking back at high-definition adoption, many broadcasters still transmit HD video as 720p (1280x720), and not full HD (1080x1920 video). This way they can save on precious bandwidth while improving their quality of service and still offer marketing support for HD programming. Only a few global broadcasters on an international scale are utilizing full HD video for their premium channels. This is partially due to the fact that each 1080p channel takes up as much as six standard definition (SD) channels. Replacing SD with HD programming requires a solid business case – a combination of substantial revenue potential, consumer demand for higher quality, and competitive pressures. At the moment, the HD business case justification has been established in the arena of Pay TV such as sports bundles, movie channels, and other premium content like the Olympics. But for mainstream programming, SD is still the norm.

These same broadcast challenges face 4K adoption since this signal takes up 4 HD channels or an equivalent of 24 SD channels.

Meanwhile, 4K is becoming synonymous with H.265 (otherwise known as High Efficiency Video Coding or HEVC). Without consumer grade equipment to decode H.265, 4K currently must rely on H.264 which needs at least double the bandwidth. It is also worth noting that in the absence of devices that support HDMI version 2.0, there is little motivation at this early stage for broadcasters to

implement 4K. This is because HDMI v1.4 only works up to 30 frames per second (in the USA, or 25 fps in Europe) at 3840x2160 (Quad HD)<sup>1</sup>. Broadcasters require televisions to support 50Hz in Europe and 60Hz in the USA and that requires HDMI v2.0. Thankfully, the development of the standard was ratified in September 2013. Consumers typically need to wait at least one year before the implementation of a new standard is found in consumer electronic devices.

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& eventually becomes expected.*

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The transition to 4K is often compared to the 3D hype of the past. But it's unfair to compare 3D with 4K when discussing the next frontier of video technology. Unlike 3D, which had several false starts over the past 60 years, 4K shows much more promise. History has shown that consumers are driven to better quality and a more engaging entertainment experience. Consumers want to be immersed in their entertainment, and 3D, with its cumbersome glasses and requirements for an optimal seating position takes all the fun out of it. Try to lie down or tilt your head while wearing 3D glasses and you'll see what I mean. As home entertainment moved from VHS to DVD and then to Blu-Ray, the video quality and subsequent frame size grew significantly with each upgrade.

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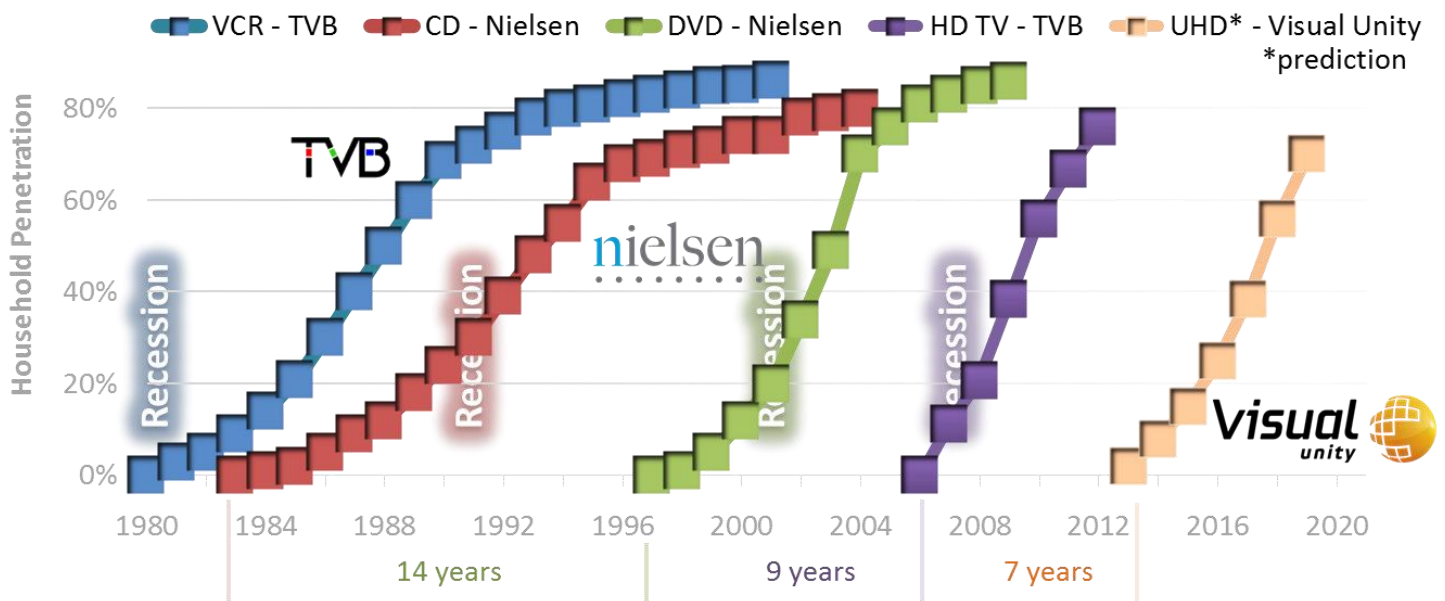


Figure i – Audio-Video Adoption in USA Households

Consumers considered 36" CRT screens huge in the 90's, while 50" screens became the new benchmark in the naughts. Now 80" screens are considered massive. Higher resolution allows for larger screen sizes and creates a more immersive experience from the comfort of one's living room sofa.

Some consumers, and even the media, consider that 4K is coming to market too soon. But this is certainly not the case when one looks back at recent history. There was a fourteen year wait between the introduction of CDs and DVDs. Consumers then waited nine years for Blu-Ray. The introduction of 4K televisions at the beginning of 2013 shows a seven year gap since full HD

televisions were launched. Entertainment is moving at an increasingly faster pace, and these windows of adoption are shortening with each subsequent introduction of new technology. In fact, as shown in Figure i, looking at the adoption curve of entertainment technology over the past two decades, 4K is arriving just in time<sup>3</sup>.

What initially strikes us as extraordinary soon becomes normal, and eventually becomes expected. So even today's massive screens will eventually become passé. As consumers hunger for larger televisions, they will also need higher resolutions. Therefore, the successful adoption of 4K is just an evolutionary step to its successor 8K,

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which will take the reins sometime in the next decade.

In spite of 4K broadcast challenges, a recent study by IHS Electronics & Media estimates that there will be one thousand 4K channels by 2025<sup>4</sup>. In the meantime, consumers will enjoy 4K by other means, mainly through the Internet and OTT services.

## • Entertainment Challenges in Today's Digital Society

• Check out additional thought leadership answers to the entertainment challenges in today's digital society:

### 1. Is 2nd Screen a threat to broadcasters? What are the challenges for OTT moving forward?

<http://gdusil.wordpress.com/2013/12/24/entertainment-challenges-in-todays-digital-society-i-of-vii/>

### 2. How will 4K be adopted by consumers?

<http://gdusil.wordpress.com/2014/01/13/entertainment-challenges-in-todays-digital-society-ii-of-vii/>

## • Synopsis

Understanding the entertainment market from ten thousand meters helps industry executives make strategic decisions. This leads to tactical initiatives that drive innovation, new services, and revenue growth. This Q&A series takes a top-level view of today's digital landscape and helps decision makers navigate through the latest technologies and trends in digital video. Gabriel Dusil, Chief Marketing and

Corporate Strategy Officer from Visual Unity discusses the ongoing developments in Over the Top (OTT) services, how these platforms are helping to shape today's digital society, and addresses the evolving changes in consumer behavior. Topics include 2nd Screen, 4K Ultra High-Definition video, H.265 HEVC, global challenges surrounding content distribution, and the future of OTT.

## • About Gabriel Dusil



Gabriel Dusil is the Chief Marketing and Corporate Strategy Officer at Visual Unity, with a mandate to advance the company's portfolio into next generation solutions and expand the company's global presence. Before joining Visual Unity, Gabriel was the VP of Sales & Marketing at Cognitive Security, and Director of Alliances at SecureWorks, responsible for partners in Europe, the Middle East, and Africa (EMEA). Previously, Gabriel worked at VeriSign and Motorola in a combination of senior marketing and sales roles. Gabriel obtained a degree in Engineering Physics from McMaster University in Canada and has advanced knowledge in Online Video Solutions, Cloud Computing, Security as a Service (SaaS), Identity and Access Management (IAM), and Managed Security Services (MSS).

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## • Tags

• 4K, Broadcast, Connected TV, Digital Rights, Digital Video, DRM, Gabriel Dusil, H.265, HEVC, Internet Piracy, Internet Video, Linear Broadcast, Linear TV, Multi-screen, Multiscreen, New Media, Online Video, Online Video Platform, OTT, Over the Top Content, OVP, Recommendation Engine, Search & Discovery, Search and Discovery, second screen, Smart TV, Social TV, TV Everywhere, Ultra HD, Ultra High Definition, Visual Unity

## • References

- <sup>1</sup> or HDMI 1.4 supports up to 24fps at full 4K (4096×2160)
- <sup>2</sup> “What is initially extraordinary, soon becomes normal, and eventually becomes expected.”
- <sup>3</sup> “Building a Case for 4K, Ultra High Definition Video”, by Gabriel Dusil, 15<sup>th</sup> July 2013, <http://gdusil.wordpress.com/2013/07/15/building-a-case-for-4k-ultra-high-definition-video/>
- <sup>4</sup> Tom Morrod, IHS Electronics & Media, “1000 Ultra HD channels by 2025”, <http://advanced-television.com/2013/10/17/1000-ultra-hd-channels-by-2025/>