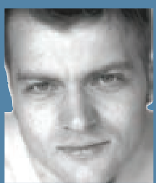
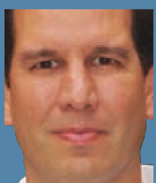

Andy Evans
Managing Director
aeCreate


Michael Hosp
CEO
kdg Mediatech


Sarah Bradley
Managing Director
Meedja


Miguel Clarke
Managing Director
Silicon Philosophies


Fabien Remblier
Independent
2D/3D Producer


Rob Aubey
Manager, BD Technologies
Sony Creative Software


Stuart Green
CEO
ZOO Digital


Philip Hall
Managing Director
Multi Media Replication

Where do you see your company's comparative advantage in this highly competitive market?

Evans With the consolidation of authoring houses to primarily high volume low cost, my advantage comes working with content owners where projects do not fit easily into those facilities. Whether artist, director or other talent is involved, they generally need high flexibility in producing their products whether DVD, Blu-ray, mobile apps or additional content.

Hosp As a general contractor we are a very broad-based company. This enables us to offer our customers a comprehensive service portfolio, starting from DVD/BD authoring through packaging consulting and media production right down to logistical and digital delivery. Of course, the whole of the industry keeps talking solely about the price, but other things are decisive in day-to-day business, too: reliability, perfect processes and innovative ideas, for example – in other words “best service.” Ultimately, you realise there’s a lot of truth in the good old business adage “buy cheap, pay dearly.”

Bradley We have unrivalled experience in the market and combine this with exemplary and personal customer service. This is why we have kept our customers loyal for many years - they appreciate the continuity and simplicity of working with us.

Clarke The acquisition of certain key products, combined with our competitor’s discontinuance of product development, creates new opportunities for us.

Remblier The advantage of working with me as an independent is my availability and my experience on both sides of the 3D market : production and technical.

Aubey Sony Creative Software continues to advance and improve the full range of media creation software that we are known for. In addition, we are introducing new applications and features regularly that take advantage of emerging technologies and capabilities. Our product lineup continues to provide users the tools they need to make their projects come to life across multiple media.

Green We are focused on providing workflow management solutions to creative and production businesses to improve efficiencies and reduce costs for our clients. Our proposition is differentiated in that we can deploy tailored systems that align perfectly with established client workflows at a fraction of the cost of bespoke IT systems.

Phil Hall While we have over 20 years experience in content preparation and distribution, although we are www.replication.com I'm thankful that, while we have excellent strategic relationships with the best replicators in the industry - we do not have pressure of owning and filling a plant. Instead, we are able to concentrate on adapting swiftly to our customers’ disparate data delivery needs.

Brown Competition amongst the majors has always been fierce. If I had to highlight one distinct advantage I would have to say our strong balance sheet.

Ingold For 22 years, I've provided expert digital media technical consultancy, now with a speciality in the secure delivery of premium film and TV content. Delivering effective architecture and services, with an entrepreneurial approach, gives me an edge. A case in point: When YouView costs in excess of £100m, Kangaroo cost £40m and Arqiva bought the technology for £8m, I delivered FilmFlex's infrastructure for a fraction of that cost and resource. FilmFlex Movies, jointly owned by Disney and Sony and one of the most successful video on-demand (VOD) services in Europe, powers Virgin Media's Movies On Demand and Channel 4's Film4oD. I advise start-ups, established companies and organisations like BAFTA's Digital Strategy Committee, the DTG and the UK Minister for Culture, Communications and Creative Industries as well as the European Parliament.

Bock We have a great expertise in music. And a long experience in preparing music content for audiovisual media. Having said this, of course, Pure Audio Blu-ray plays a significant role in our business.

Ed Hall As a broadcaster, we have access to more marketing channels than other independent labels, we also have several first-look deals with production companies and established relationships with comedy agents, and we have an iconic brand in Channel 4 and Film 4 which ensures we compete with higher-budget labels with regards to movie releases and strong TV and comedy titles.

Kohlen We have all the people and expertise in-house for DVD, Blu-ray and VOD. This enables us to be more efficient as well as highly competitive.

Bono Knowing the product and caring passionately about the end result, as well as being able to adapt rapidly. Working in a multi-language, multi-currency territory has also given us a special advantage in knowing how to tackle certain uncommon issues.

Gilliat-Smith By creating innovative and customised security solutions for studios in the pre-release and home entertainment space Fortium has been able to create a solid niche business that is distinct from others. Our advantage is being able to offer a production line of relevant and updatable security solutions that measurably protect content.

Schmidt Since our foundation in 2001 we always offer professional services for reasonable prices. And today it's more important than in the early years of DVD. Concerning Blu-ray and 3D Blu-ray we started early in adopting the new standard and therefore we're able to offer professional services at reasonable prices for these challenging formats.

Amongst the range of services you offer, which one did grow in importance over the past 2 years, which one diminished, and which new service(s) will you be offering in the coming 2 years?

Evans As this is my first year as aeCreate Limited, it's difficult to say, but for sure Apps are growing in terms of discussions and future requirements by my clients. They also require a lot more time spend educating to really understand the range and justification of the many formats to release their IP across.

Hosp Nothing too surprising: BD authoring has grown just as much as the overall number of units in BD manufacturing; DVD production figures have tended to be slightly down reflecting the international market figures; and amazingly enough, CD output has remained fairly stable. In overall terms, average order volumes are decreasing right across the board, for all types of media. Against this background, we continue to see tremendous market potential in the logistical services which we've had in our portfolio for over seven years. In this field we operate as a logistics supplier both for e-commerce as well as outside the media sector.

Bradley Over the past few years we have (unsurprisingly) seen a growing demand for re-versioning of existing products and there has also been an inevitable interest in apps, in particular video-as-apps.

Clarke Our software development and integration services has grown. We will extend our product offerings to include 4K and HEVC in the coming months.

Remblier 3D is still growing and I almost don't work in 2D anymore. I have made a couple of films in 4K - one in 3D, the other in 2D.

Green Our current growth areas are workflow management, localisation and language solutions for entertainment, including subtitling. Our DVD production services have declined over the past two years. We expect to offer a greater range of language and localisation services in the coming period.

Phil Hall Fast turn short run business, including unique products, has grown. We are excited about supporting major players as they resolve long tail challenges with Manufacturing-on-Demand disc publishing systems. We were proud to play a significant part in enabling Sony DADCs MOD capability. While overall replicated disc numbers/client fell in 2011/12, we are experiencing client numbers rising again. As a service bureau, predominantly in the niche and special interest market, we are steadily growing our offerings to embrace multi-format, multi-device delivery. Our experience of file-based methodologies and copy protection is proving extremely useful as one needs to engage with the client much earlier in the product cycle.

Brown In terms of growth in importance, our full service model providing distribution, freight management, demand planning and cash collections has and will continue to be industry leading. Obviously, with the worldwide adoption of Blu-ray our DVD volume has seen substantial decline. As for new offerings, our digital end-to-end solution will be a major step; watch this space, we will be dominant.

Ingold In the year I've been consulting, I'm most often asked to provide four things: (a) education, advising or public speaking on VOD technology; (b) technical audits or risk assessments on established or proposed VOD infrastructures; (c) build up an entire VOD infrastructure for premium film and TV content; (d) advise start-up boards and private equity firms looking to invest. In the coming years, I'll also get involved more on the Connected Home as well as Wearable Computing fronts.

Bock Blu-ray authoring and Pure Audio Blu-ray authoring have been growing in the last two years. DVD-only authoring has decreased.

Ed Hall Together with Film 4, we can now help fund projects in-house, such as *The Inbetweeners Movie* in 2011 and the *Stone Roses: Made of Stone* film in 2013, meaning we can capitalise on back-end revenue and ensure these Film 4 releases, previously funded and released by third-party labels, are kept in house. TV catalogue has declined on DVD due to the rise of VOD, set-top boxes and online content, and we have begun to introduce online-only releases (such as *Craig Campbell*) and day-&-date releases (*A Field in England*) in order to maximise all revenue streams across the C4/F4 business.

Kohlen Our subtitling department grew and DVD diminished by 10%. We are focusing more on UltraViolet and VOD.

Bono Growth is in the digital sector, no doubt about it. Packaged media is dwindling slowly, but it still has lots of potential – we just have to focus on the right products and services. UltraViolet is firmly in our sights and I see many companies in need of our assistance, especially in territories that share the challenges of the Nordic region.

Gilliat-Smith Without doubt file security has been the largest growth area in response to customer demand from those who have found that file delivery, especially via the cloud, is not secure. Our MediaSeal solution which protects proxy files 'at rest' on Avid, Final Cut and Adobe systems during post production is a good example of meeting such demand. DVDs predictably continue to be in remission, but Patronus anti-rip and DVD PIN-play continue to be popular for higher value pre-release and special interest content. Blu-ray seems nascent in Europe, while in the US early interest in protecting discs has not materialised although piracy levels continue to rise. In the coming year, we are creating a major new digital security solution for the leading distributor of non-theatrical movie content.

Schmidt As we began early in experimenting with 3D and 3D Blu-ray, this is the service that did grow the most in the last 2 years. Our DVD production diminished a bit, but the last months we see again a rising demand in DVD services. DVD will also be around for the next 2 years, so our services for DVD, BD and 3D BD will be available in the near future.

Steve Brown
CEO
Cinram

Maria Ingold
CEO
mireality

Stefan Bock
CEO
msm-Studios

Ed Hall
Operations Manager
Channel 4

Leon Kohlen
CEO
i-Frame

Mette Bono
CEO
DDD Solutions

Mathew Gilliat-Smith
CEO
Fortium Technologies

Christoph Schmidt
Managing Director
DVDesign GmbH

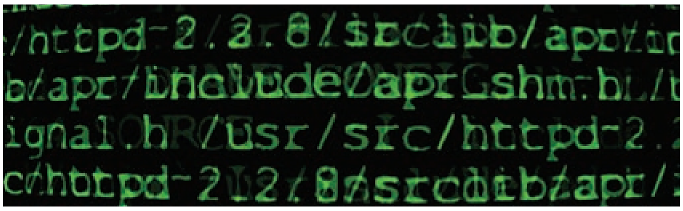
There's a lot of alarmist talk about the rapid demise of packaged media in the face of online delivery. What is your view as to how long discs will be around? And what could become the main target market of packaged media?

Evans Packaged still has a place for the artists that I want to work for as they have a fan base that desires them. Forecasts still suggest packaged will count for a large proportion of revenue for several years to come.

Hosp Of course, the output figures for packaged media are down throughout the world, but even so, packaged media remains the cash cow of the media sector. We don't see any signs of packaged media disappearing from the market in the immediate future. On the contrary. What we see is a rapid growth in the diversification of content offered right across all markets (including music as well as film). As a result, packaged media is increasingly set to become products for collectors and connoisseurs. The major challenge which the entire sector faces isn't the question of online versus packaged media. It's the question of distributing work in general. We've reached the stage where Internet online distribution has become much more complex and confusing than classic distribution channels ever were. If you can't be found online – and the likelihood of not being found is relatively high if you only have a small sales budget to work with – then you won't really be able to make much money in this supposedly seminal distribution channel.

Bradley Online delivery has already replaced packaged media for many consumers (myself included), but there are still large areas of the market that are not ready for the change; in particular, the older demographic and those living in areas with expensive or unreliable online connections. I was recently surprised when speaking to a group of my contemporaries to find that they still favoured owning packaged media over the idea of a digital locker, not trusting that the content would be available 'forever' online. This probably suggests that I'm now falling into the older demographic, as the younger people I've spoken to on the subject are just as happy with Lovefilm and Netflix.

Clarke My views have not changed. The availability of high quality downloadable content provides certain comforts; but this carries an immense risk for piracy.



As there will soon be 100GB discs available for content deployment, content creators have much better options, which should greatly extend the potential and use of replicated media.

Remblier I don't believe in the end of discs. In the end, we still need discs because digital copy can easily be erased or corrupted.

Aubey The age of packaged media is far from over. We continue to see increases in hardware player sales in many countries, and the use of high definition BD discs is increasing worldwide. A physical disc is still the best way to provide the full video experience to end-users. Whether that is a BD disc with HD video and high resolution audio options, or the bonus content and extra features that can be provided on a DVD or a BD disc, the consumer benefits from fixed-media delivery. Not to mention the outstanding playback qualities of a hardware player, qualities yet to be duplicated in online delivery.

Green Considering that VHS tape had a lifetime of almost 40 years, overlapping the heyday of DVD Video, I expect that packaged media has many years ahead of it. For the discerning consumer who appreciates the benefit of high quality video and audio, packaged media will continue to be the preferred solution for many years to come.

Phil Hall We believe that disc-based delivery, as we currently know it, will be around for another 10 years. The customer proposition will reverse with online delivery the preferred method, and physical media (including flash memory) as a complementary supplement. As media becomes richer and datasets larger, yet broadband delivery bandwidth continues to lag behind; in many areas the disc remains the lowest common denominator. We may well see Blu-ray become more widely accepted outside of major studio content. Given the continuing attrition rate of companies with unrealistic overheads or whose proposition is solely to undercut on price; we are also growing sales of quality recordable media.

Brown Physical is not going away anytime soon, and dependent on factors such as the visual richness of the movie title, it may never diminish entirely. Bit for bit, BD still is the greatest experience and the most cost-efficient way to deliver 50GB of content.

Ingold As an indicator, Nielsen's Cross-Platform report has continuously shown since Q1 2009 a decline in the amount of time people use their DVD/Blu-ray device and an increase in DVR playback. Nielsen's June 2013 report reveals that from Q1 2012 to Q1 2013, US owners of DVD/Blu-ray player fell 2.58%, while DVR ownership rose 7.81%. Discs are like books and record albums. They're great to display tastes, easy to share and provide a sense of ownership. But they're not easily portable in volume and they degrade in quality over time (scratches, etc.). They will continue to be collectable and provide a purpose and sharability that digital copies do not yet always provide or make easy. For disposable content or where portability is important, digital will be more dominant.

Bock I strongly believe in physical media. Although there are more and more alternatives in digital distribution, there will be a market for physical media for a long time. The revival of vinyl shows that physical is not dead. But there has to be a value to the product - be it content or because of the special packaging.

Ed Hall According to the BVA, consumer spending is up 8.2% across all formats in the first half of 2013, and there are around 1,000 more stores selling DVD/BD since the start of the year, so I feel packaged media will remain as the primary source of content to own for the foreseeable future, maybe incorporating digital copies of purchases as standard in the next 3-4 years. The supermarket chains seem to be the favoured choice of the general public for new release movies as they can use blockbusters as loss leaders to entice people inside. And hopefully HMV will re-establish itself on the high streets for back catalogue promotions, as well as compete with the supermarkets on new release. The fact that more stores are stocking DVD/BD can only be a good thing for the industry, and shows the market is still healthier than the pessimists would have you believe.

Kohlen I still think there is a future for packaged media. Especially for Blu-ray since I'm still waiting for comparable picture and audio quality in the Dutch streaming services.

Bono Packaged media will be around for several more years, but the focus should be on quality, not quantity.

Gilliat-Smith If my family is anything to go by, there has been a notable transformation over the last three years. Back then we were buying DVDs, two years ago we were renting packaged discs and this year we using VOD from Sky, Apple TV, catch up TV and so on. The exception being Christmas stocking fillers and birthdays where you need something physical. I think the availability of better quality TV programmes particularly from the US and the lack of new movie content via the above means TV is winning the battle for consumers' time and wallets.

Schmidt Of course, online media is growing and still will grow, but the past showed that physical media always had an advantage in comparison to online media - high bitrate. And in my opinion that advantage will remain at least for the next 10 or 15 years. We're at the beginning of Ultra HD and no online service is able to offer the bandwidth to the homes that is required to deliver high quality images in Ultra HD; physical media can. Blu-ray will obviously be the media of choice also for Ultra HD. Whether we will still have spinning discs in the future or hologram cubes, I don't now, but there will be a physical medium for video and audio content.

Given the slower than expected take-up of 3D, do you think 3D is here to stay or is consumer interest in stereoscopy temporary?

Hosp Even in the run-up to the IFA consumer electronics fair in Berlin very few developers wanted to talk any more about 3D. Marco Gonska, Managing Director of the WLC company which helps TV manufacturers to optimise their image display, was one of the few not to mince matters. He even spoke of a 3D disaster. And anyone wandering through IFA at this particular time will quickly realise that the hot topics are smart TV and UHD.

Bradley Many consumers have fully embraced 3D at the cinema, encouraged by must-see 3D theatrical releases such as *Life of Pi*, and many of my friends will now choose 3D over 2D. I'm beginning to revise my previous opinion of 3D as a temporary aberration.

Clarke People have been reluctant to buy 3D products mainly due to lack of content. Cinema releases have been well received – irrespective of the need for glasses. As the number of Hollywood features and games increases, 3D will become mainstream, since watching or playing content with "depth" is far more realistic and entertaining experience.

Remblier This is a journalist's description! 3D is growing very fast. Some 37 US films in cinemas in 2013, more than 40 in 2014… 3D VOD and Blu-ray titles are growing. The only thing that does not grow is 3D broadcast, but the problem is still the same: broadcasters have to build real channels, not just scheduling shows and documentaries without a real editorial line. One example: when you turn on your TV everyday on a 3D channel, you never know what you will watch. Broadcasters have to create "rendez-vous" time.

Aubey The production of 3D content and end-users' excitement has stalled in the last year, but the advent of higher resolution TV sets (UHD/4K) and the ability to provide 3D more efficiently on those sets will help reignite the market. 3D productions will continue to expand in theaters, and this will drive consumer demand for similar experiences at home.

Green There are two problems with 3D as a consumer proposition. Firstly, the well-documented inconvenience of glasses, and secondly the limited field of view of the picture in domestic settings. Stereoscopy has been embraced in theatrical presentations due to the sheer size of the screen and viewing area which helps to create a more immersive environment where our brains are more easily fooled into perceiving depth in the picture. A difficulty with 3D in the home is that the screens are much smaller and depth inconsistencies that occur at the boundaries of the picture create ambiguous messages that our brains find hard to reconcile, resulting in a poor stereoscopic experience. 3D in the home could see a revival if screens become much larger.

Phil Hall Slow take up says it all. We have chosen to invest in meeting iOS, Windows and Android second screen needs rather than 3D capability. Integration between various devices and Smart TVs, most without 3D seems a higher priority.

Brown I think it's title dependent at least until glass-free 3D arrives and even post that to a large degree.

Ingold I delivered the 3D movie on-demand service for Virgin Media cable, just prior to BSkyB's 3D launch. There is a wide variation in the quality of 3D content and the technology that delivers it. 'Great 3D' content has been designed in 3D with 3D in mind. 'Good 3D' can provide extra clarity and sharpness, but we can experience that with higher frame rates and resolution. 'Bad 3D,' which has been converted from 2D to 3D using techniques like rotoscoping and with Z-depths pointing outwards, can really detract from the experience. It will be interesting to see how 48 frames per second (fps) proceeds. *The Hobbit: An Unexpected Journey* received mixed reviews after being screened at 48fps and 3D. I found that it took my eyes an hour to focus correctly on that combined level of detail and depth.

Bock I don't think that 3D will take over as it was expected a few years ago. But as Hollywood titles are produced in 3D, these titles will still be made available for the consumers.

Ed Hall Industry scepticism over 3D and its chequered popularity, plus the costs in purchasing 3DTVs, set-top boxes and account subscriptions for a limited amount of 3D content on TV, and the necessity to wear glasses, makes 3D a niche market in my view. Some well known vocal critics also help sway the public feeling against 3D and the necessity to upgrade, especially as HD is a cheaper, clearer, easier and more widespread alternative to watch programming across all genres.

Kohlen 3D has a future, we just need glasses-free 3D TV sets.

Bono It's here to stay, as a niche market. The format's main problem seems to be the lack of proper marketing.

Gilliat-Smith The profile of 3D has certainly dwindled. I believe 3D is here to stay for theatres and is an excellent attraction to get you out of the house for the all-important full quality cinema experience. But for mass-market consumption it doesn't seem to have won the necessary appeal. Novelty is good for business, but the ROI for whoever is providing it is never guaranteed.

Schmidt I think 3D is here to stay. Of course, 3D is not suitable for every kind of movie, so the consumers in the end will decide which genre 3D is interesting. And there it will stay for a long time.

Do you think the consumer take-up of 3D depends on the arrival of glasses-free autostereoscopic systems? If yes, how many years do you believe consumers will have to wait for a high-quality glasses-free system to rival the existing shutter glasses 3D systems?

Hosp If 3D TV is to have any chance at all of penetrating the mass market – who knows, the train may already have left the station – then probably only in the form of an autostereoscopic display system. But even here some healthy scepticism is called for: the technology simply isn't compatible with our physiology (at least not yet). Even in protracted doses, autostereoscopy can cause many people to experience eye pain, headaches and feel dizzy. Ultimately, the consumer should feel completely fine with 3D. And technology should be there to serve people, not the other way round.

Bradley I don't see many people rushing to invest in 3D at home yet. This may be down to the price of the equipment, including investment in multiple pairs of glasses, but is more likely that in main home viewing it's a more casual activity – I certainly never have the opportunity to stay still in one place for the duration of a movie. I don't see this changing with glass-free systems as this will still require static viewing angles.

Clarke Not a question of time, but rather how quickly the devices become available and if there are no new issues like cost, viewing angle, resolution, etc. With every new creation there are always pros and cons. Acceptance is more related to price, availability, taste, ease-of-use plus what consumers believe is "cool." There are few things more dangerous and unnatural than smoking, skateboarding, bungee jumping, wearing high heels, or trousers hanging way below the waist, yet millions of people do so just for the thrill.

Remblier I always say "when you play bowling, you don't care wearing ridiculous shoes. When you watch 3D, you know that you will be wearing glasses." People interested in 3D don't care about glasses. Glasses-free TV will only make the market grow. I saw a Dimenco glasses-free 3DTV and I have to say I was amazed. I think glasses-free TV are already here and, yes, this will change everything for 3D. Remember what NHK said last winter: 4K is just a transition and they already work on 8K, and will use it exclusively for glasses-free 3D TV.

Aubey Autostereo TV sets that can effectively provide the 3D theatrical experience to many in the home is still a ways off. However, the ability of the UHD or 4K TV's to display HD stereo streams with the use of passive 3D glasses will bring the comfort factor within reason for many home viewers. The use of the same passive 3D glasses at home as in the showing full HD to each eye from a 4K TV set is a strong differentiator.

Green Yes, glasses-free displays are a necessary prerequisite for consumer take-up, but are not sufficient – much larger screens are needed to reproduce the same kind of viewing experience that we have come to appreciate in the cinema.

Phil Hall I think virtual reality, with the user immersed in the experience will leapfrog most 3D initiatives.

Brown Arrival and affordable are two different things. I'd ask the CE guys that one.

Ingold TV Licencing's Telescope 2013 report showed that in the UK 70% of TVs are HD-capable, but only 6% are 3D-capable. Poor 3D content and poor 3D hardware both have an adverse effect on 3D take-up. 'Passive' 3D TVs (active set and cheap passive glasses) were a significant improvement on 'Active' 3D TVs (passive set and expensive active glasses). You can even use 3D glasses from the cinema at home with the passive sets, but many consumers are still not choosing to do so even when they will watch 3D at the cinema. Given the low take-up of 3D at home even with inexpensive glasses, autostereoscopic systems will probably not make a big difference to 3D television purchases, especially as technologies such as 4K, 8K and 48fps are all aiming to provide a sharper experience as well. And TVs are increasing in size, slimness and flexibility (flexible OLED). Size will affect the aspect ratio and viewing angles. All of which affects the autostereoscopic viewing condition. Consumers didn't react well to *The Hobbit: An Unexpected Journey* in the cinema with both 3D and 48fps; it's unlikely they'll react better at home even with autostereoscopy. Interestingly, as autostereoscopic TV moves away from glasses, wearable technology moves towards it. And that's nothing new - Google Glass looks a lot like the technology MIT demonstrated in the emerging tech room at SIGGRAPH a decade ago. Rather than a shared experience, it may be that autostereoscopic 3D is instead a move towards a close and personal visual immersive experience.

Bock This will take another few years. These days, consumers shall be convinced of 4K displays. It will be hard to again sell new hardware in such a short period of time.

Ed Hall Yes – as mentioned above, I feel that glasses-free 3D pictures will accelerate 3D pick-up, but it depends on the overall quality and price for consumers. Probably not within the next 3-4 years.

Kohlen Yes. My guess is that it will take another 3-5 years to be as widely accepted as HD is now.

Bono Opposition to 3D glasses at home has been strong and loud, certainly. If CE manufacturers launch high-quality glass-free 3D displays that are also affordable, 3D might wake from its slumber. But it will require more effort than simply putting out a few displays; marketing and a variety of content are equally important. As for waiting... it feels like good autostereoscopic 3D is always 5 years away, doesn't it?

Gilliat-Smith I think people would love to watch 3D if they didn't have to change their habits or spend more money. When you attend CES, NAB and IBC and try the latest and greatest 3D experience with and without glasses some solutions seem very compelling while others are disorientating with blurred backgrounds so the jury is out as to how long glasses free will be available.

Schmidt Polarized glasses and Ultra HD is in my opinion the best solution at the moment and that can arrive in the next 3 to 5 years. The fact that the polarized system only has half HD resolution was one the biggest disadvantage in comparison to the shutter glass system. But if you have an Ultra HD display you can have full HD resolution for each eye in Full HD. The polarized glasses are light and easy to handle, so they don't really bother you. I doubt that in the near future there will we glass-free displays that really show the same stable quality than glass-based systems.

Cloud-based UltraViolet digital delivery has yet to make inroads in Europe. What needs to happen for consumers to embrace this digital service? Could UltraViolet be superseded by large retailers' own digital locker system like Tesco's Blinkbox?

Evans Steve Brown, Cinram CEO summed this up perfectly with his presentation at the UV Academy conference in September. It has to be EASY, SATISFYING, and an EXPERIENCE. Currently, UV is not that and all it can do is cause confusion unless it becomes a simple click experience for users. I find it hard for multiple retailers and multiple lockers as users won't put up with storing content in multiple places each with separate credentials to access it.

Hosp First of all, and let's be quite clear about this, end consumers aren't (yet) familiar with UltraViolet. So, above all it's the software and hardware providers who now need to get the concept across to the consumer. But to do this, all the important players first have to pull together (and once again, they're simply not doing this). Yet, if they don't, this system is unlikely to make any real inroads at all.

Bradley I'm disappointed that UltraViolet has yet to take off here as I'm a big fan of the concept, but I think that this is partly due to the lack of marketing in this region – no-one I speak to outside the industry has heard of the technology. It is also still quite complicated to use. If the UV locker could be tied in with an existing subscription services (Lovefilm/Netflix) with their simple and reliable cross-platform viewing, then it may start to register with the consumer. Blinkbox currently seems to be taking the upper hand (helped by a large marketing budget), but still doesn't have the universal playability that's required.

Clarke As broadband becomes less expensive and readily available, consumers will use whichever is more appropriate to their needs.

Green Firstly, education. I have five kids between the ages of 11 and 20, all computer literate and one studying for a degree in computer science, yet not one of them had heard of it! Beyond that, a big inhibitor is Apple's non participation; it will be tough to bring consumers on board when content purchased through the largest digital e-tailer is not supported.

Phil Hall Users need to be able to buy into a one-time, simple, generic, one-size-fits-all, studio- and vendor-agnostic membership system.

Brown Cinram has been putting content in the hands of consumers for over 40 years and UltraViolet adds yet another secure method to do this. UltraViolet is a heavily supported, comprehensive solution to provide secure content. Adoption at this stage will depend on the consumer-interfacing platforms which drive the UV standard. This is something we plan to be a big part of. Watch out for an upcoming release.

Ingold At the moment UltraViolet isn't always easy to use and can be difficult for retailers to monetise. The retailers who are best placed to both monetise from UltraViolet and make it easy for consumers are those who already sell the physical media and keep track of user's purchases through an account, whether that's Amazon or Tesco's Clubcard service. Indeed, an Amazon or a Tesco Clubcard customer is more likely to be familiar with the online service and will have an account that can be linked to the UltraViolet one. As UltraViolet grants users more access rights (12 devices, 5 other household members and 3 simultaneous streams) than other Electronic Sell Through (EST) services from the studios, UV retailers could dominate the market. Not only can they sell digital files online, but they can directly monetise their operation through consumer purchases of physical media. Consumers are thus provided with more flexibility than is the case with non-Ultraviolet digital copies.

Bock UltraViolet still needs a lot of consumer education. And of course, as alternative systems arise, it might become even more difficult.

Ed Hall There has to be a universal file format for digital – until this happens (and it's unlikely - DVD could be the last truly universal entertainment format accepted by labels and consumers) then the proliferation of digital lockers could result in this happening, even with British Video Association backing for UV.

Kohlen UltraViolet has a very good chance to become a major player. They need to make it more user-friendly with a self-explanatory and clear GUI.

Bono The companies backing UV really need to start pulling together for UV to succeed. So far, the efforts have been quite unfocused and fragmented, and as a result, consumers remain clueless about the format. If the industry gets its act together, UV has nothing to fear from retailers' own digital locker systems.

Gilliat-Smith Explaining UltraViolet to anyone outside the industry is an unenviable task. UV will be adopted more widely when it becomes seamless to the consumer and packaged with something of value.

Schmidt The technology that will be the easiest to handle and that offers the most content will be the one that wins. Surely, there will be more than one service that will survive. Plus digital delivery and VoD have to become "one" for the consumer. If you use your favourite VoD platform, wouldn't it be great if the platform recognizes your DVD and BD collection and you can watch this content for free, wherever you are? At the moment there are too many services, too many information that the consumer has to handle. As a consumer I don't want to know how all the services works, I just want to use them easily.

Do you think UltraViolet has the potential to increase sales of BD discs (as the studios intended) or will it be the death knell of packaged media?

Evans I don't think it will do much either way.

Hosp UltraViolet offers the BD buyer the bonus of a DRM-protected copy, which of course could be regarded as an additional benefit in principle. But then you start asking yourself whether the classic BD buyer is really interested in such "additional benefits" – all the more so, since some providers have clearly set time limits for their streaming offers. For consumers who definitely do not want to stick their films in some cupboard, but want to see them, quickly and legally, UltraViolet is clearly an interesting option. From today's perspective, and given that these are two completely opposite forms of consumer behaviour, UltraViolet is highly unlikely to have any major long-term impact on BD sales.

Bradley Packaged media won't be pushing up daisies that soon, but I don't believe UV licences bundled with disc will have much effect on sales.

Aubey Having UV codes available in BD packaged media has already proven successful. It will continue to grow if UV continues to improve in its account accessibility and friendliness to end-users.

Clarke Both are conflicting rather than complementing technologies.

Green Yes, if consumers truly believe that purchasing an UltraViolet product means they have the right to watch in perpetuity across current and future media formats, then this should encourage purchase of BD titles. I am a little sceptical that the industry will be able to deliver on this goal.

Phil Hall I think it has the potential to increase the sale of BD discs. Packaged media, with associated marketing initiatives, will continue to drive sales of new product.

Brown I believe that BD and UV are umbilically linked, on the contrary I believe BD will drive users to UV. So long as the route is clearly defined and the experience is good.

Ingold Retailers who sell both physical media and UltraViolet digital files will have an incentive to keep selling both, especially as they get a greater percentage of the physical media sales. Blu-ray with UV access gives consumers flexibility for sharing, carrying and showing off. They can then end up selling the BD disc and still keep the digital code. Or vice-versa, they sell the digital code, but keep the disc. (On the day I wrote this, there were 214 results for 'ultraviolet code' on ebay.co.uk, selling for about £1.)

Bock I believe UV does have the potential to increase BD sales. It is one of the extra values needed to make it attractive.

Ed Hall UV certainly helps BD, but only in terms of a triple-play sku, but I certainly don't see UV as the death knell for packaged media.

Kohlen I do believe it will increase the sales of BDs for the next few years.

Bono If implemented smartly, it certainly has the potential to increase BD sales, while simultaneously acclimating consumers to the all-digital future.

Gilliat-Smith There will always be different camps with those who want to own their content and those that are happy just to watch once. For those who like to own, UV is a great concept and it should build BD sales.

Schmidt Neither. It's nice to have UltraViolet, but it won't increase disc sales.

What do you see as the opportunities and pitfalls associated with Digital Copy on a disc?

Evans It's too late for digital copy on a disc, plus with UV coming along it just makes it even more confusing.

Hosp Based on what's available at the moment I'd say that the opportunities are somewhat limited. Clearly, BD/DVD buyers don't appear to be all that interested in this additional benefit, either.

Bradley Digital Copy on disc gets around the issue of limited and unreliable home connections, but has the inherent problem of how the content can be viewed - there have been discs released which have been poorly received because the Digital Copy on-disc version was not compatible with iTunes.

Brown If managed and communicated well, no pitfalls.

Green Future-proofing and ensuring that today's purchases will be viewable on tomorrow's devices (something with which consumers' fingers have been burned many times in the past) is surely the greatest opportunity. For most consumers, Digital Copy on a disc is probably just too confusing a concept.

Phil Hall The opportunities take out the objections to customers not purchasing physical content as needs evolve.

Bock Consumers' behavior has changed a lot in the last years. They got used to have their content available on multiple devices and locations. Without a digital copy, the life of physical media will become shorter.

Ed Hall Opportunities – the ability to own the product across a wide variety of formats, devices, etc, ability to side-step the high commission levels charged by Apple, ability to control the size and compatibility of the file, protect with security codes, build an online DC library. Pitfalls – what format? Apple or non-Apple? Potential to annoy/frustrate consumers expecting to add to existing libraries. There also needs to be some tidying up in terms of the consumer downloading the file from disc, it's a bit cumbersome at present, and consumers need to be able to control the size of the file so they can choose the level of quality. Plus download speeds need to increase into consumer households so they can access digital content easier.

Kohlen The Digital Copy does take extra space on the disc. This will affect the overall quality of the BD or DVD encoded movie. Also, if you damage the disc, the Digital Copy is ruined as well.

Bono Digital Copy on a disc is a waste of resources. Put the data in a cloud and while you're at it, make it UltraViolet.

Gilliat-Smith It will surely be seen as a competitor to UV. The name Digital Copy sounds logical, but I understand the concepts pre-dates many of the current DRM propositions which may be more technologically adept at achieving the same goal.

Schmidt At the moment where my favourite VoD platforms can deliver my content digitally, I really see a big advantage. Otherwise, I don't really see a big advantage.


Facebook servers

How much of a revolution does smart TV represent, given that consumers are already comfortable using other screens (laptops, tablets and smartphones) to access Internet-delivered content?

Evans I think smart TVs are great for delivering services like Netflix because all they need to do is connect to the internet without any other boxes. I'm not sure about Apps though as so many are personal experiences.

Hosp Smart TV is one of the top products at this year's IFA, even though the concept is hardly new. The take-up rate, at least in this part of the world, is still quite modest. A recent study indicated that there are only 14 million smart TVs in Germany. That barely covers 34% of all households. And of these, only 58% are connected to the Internet. Given that sales of TVs dramatically collapsed in the first two quarters of this year, manufacturers are now clearly pinning their hopes of better sales in the short term on smart TV. But the real underlying trend is towards intelligent connectivity of all available devices in the medium and long term.

Bradley I think Smart TV will become the norm as the ideal companion to other screens. When consumers are used to accessing content easily on tablets and smartphones they will obviously want to replicate this experience on the bigger screen - watching half a programme on the train on the way home from work, then picking up the remaining on the TV at home. This is reliant on the Smart TV manufacturers keeping pace with tablets and smartphones apps (frustratingly my Sony Smart TV doesn't have a Netflix app), but when the content can be accessed on the TV it leaves the smaller devices free for second-screening.

Remblier I don't think smart TV is a revolution. We already have boxes that do the same for years!

Clarke Consumers love mobility, so the restriction of being indoors to view television has its drawback. However, consumers can also route programmes from the TV to tablet, so Smart TV offers huge possibilities.

Green Smartphones have become incredibly popular because they have integrated a number of previously disparate personal devices. TV is different in that it is not designed to deliver a personal experience. Smart TV is a sensible convergence of technologies, but does not represent a revolution *per se*.

Brown Give the consumers choice. We provide the delivery of great content that our customers produce. The method of watching that content is up to the consumer. The more places they can watch it, the better.

Ingold According to TV Licencing's *Telescope 2013* report, while Smart TV sales are up 211% over the last two years, only 5% of UK homes have one such TV and 35% of them are not connected. The Diffusion Group's recent US report that says 8.8% of Smart TV users (compared to 3.5% of non-Smart TV owners) were 'highly inclined' to cancel their traditional pay TV service.

Bock Smart TV will be just another option for consuming content.

Ed Hall Smart TV is another portal for accessing the likes of Netflix/Lovefilm and other subscription or digital lockers, but mobile devices remain the more revolutionary medium to access online content. Plus the reluctance of Netflix to produce audience/viewing figures creates an illusion over whether online content is as popular as people believe.

Kohlen No revolution at all, not before they take it all to the next level from a user experience and quality level.

Bono It's not much of a revolution until Smart TVs are as fast and easy to use as our other screens. Awkward user interface and sluggish performance are a hindrance.

Gilliat-Smith This is another niche sector appealing to a limited sector. Laptops, tablets and smartphones are the established way of accessing content online and it will be hard to change habits to something that may be considered less easy to use.

Schmidt In my opinion, Smart TV will smooth the way for Video-on-Demand (VoD) services. There is still a difference if you watch a full-length movie on a TV or on a tablet. So, Smart TVs will be very important for Internet-delivered content.

Ultra high definition 4K TVs are coming to the market. Is this a response to consumers demanding a better quality picture or a push by CE manufacturers who need to introduce higher-margin products?

Evans I don't believe consumers are driving for better quality picture whatsoever. Production values right through to delivery of regular HD is so good that I'd love to see any 'regular Jo' seeing or even caring about any better quality images. Plus, I don't know how many productions are being made at 4K.

Hosp At the moment, 4K is undoubtedly a classic early adopter issue. If you consider that conventional HDTV took over 20 years from the time it was first invented until its eventual commercial breakthrough, then you realistically have to allow a couple more years of "development time" for UHD. Having said that, the situation in this regard is still even more muddled than it was at the time with HD TV. Japan already wants to establish UHD 2 – meaning 8K! – by 2020. Sure, the number of pixels may sound completely alluring, but the end-consumer is probably less inclined to upgrade his TV system yet again. What's more, not enough content has been produced to be compatible with the format. For BD itself, 4K is of course counter-productive: the format still has a long way to go before it even starts to rival the market penetration of DVDs, for example.

Aubey Improved picture quality is always a differentiator with customers. Production equipment capabilities and techniques continue to improve the picture and audio quality of theatrical releases all the way to independent video productions. Having an effective display TV to reproduce these levels of quality will always be popular and sellable.

Bradley There is a small consumer interest in 4K, but until the format is supported by broadcast channels or bandwidth high enough for reliable streaming I don't think the sales will be high.

Remblier I think consumers don't care about 4K in 2D. OK, the image is beautiful when you watch the demos with high bitrate. But when you see a broadcast programme, where is the difference with HD? Do you really think you can provide 4K with a low bandwidth? No. So, quality is bad and you loose all the benefit of 4K. But even on demos, when you are 3 meters from the screen, only an expert eye can see the difference with HD. 4K is only a benefit for glasses-free 3DTV. But even in this case, broadcasters will have to expand their bandwidth and bandwidth is expensive, that's the key to the problem.

Clarke It's insanity to spent €35,000 for a 84" 4K television. These are simply luxury items which provide bigger margins to the manufacturers.

Green I remember attending a presentation by an entertainment industry executive in the early days of Blu-ray at which DVD and BD pictures were shown side-by-side. He couldn't distinguish between the two! Sadly, my own experience is that the majority of consumers don't fully appreciate the quality of 1080p. I've often heard "DVD quality is good enough" and I've never heard "Blu-ray quality isn't good enough." I'm certain that 4K is being driven by CE opportunity rather than consumer demand, but that doesn't mean that 4K can't be commercially successful. However, I believe that much consumer education will be needed in order for 4K to become successful.

Phil Hall I fear it is the latter.

Brown The consumer will decide.

Ingold It's worth looking at the take-up of Smart TV, 3D and HD sets to get an idea of what might happen to 4K. In July, the BBC announced it would cease 3D programming for three years as some of its big-budget programmes had only attracted 5% of the 1.5 million 3D-capable homes in the UK (that's 5% of the 6% of UK homes that have 3D-capable TVs!). HD is definitely doing better, but still hasn't reached Standard Definition viewing proportions. According to TV Licencing, 70% of UK homes have HD-capable TVs. However, BARB's Q1 2013 quarterly reach report showed that ITV1 had a quarterly reach of 92.6% and ITV1 HD had 27.2%. In the same period Film 4 had 55.4% and Film4 HD had 3.1%. That said, Blu-ray (HD) sales are going up and DVD (SD) sales are going down. 4K uptake will depend on a combination of available content, cost-effective hardware, viable delivery options, cost of content and consumer demand.

Bock I don't see a demand from the end-user for 4K TVs. But as always, the industry will push this. In my opinion, this is more an evolution than a revolution.

Ed Hall This is more a manufacturer's push, I don't recall hearing of consumer unrest over HD quality pictures. Costs will remain prohibitive for the general consumer for the next few years.

Kohlen It is definitely a push by CE manufacturers who need to introduce higher-margin product or niche market.

Bono It's the latter, obviously. No regular consumer is asking for anything better than Blu-ray. Most consumers are still happy with DVD, and the majority can't tell the difference between SD and HD because they are sitting way too far from their displays or have their system set up incorrectly. Personally, I would love to see 4K gaining ground and sooner rather than later.

Gilliat-Smith I think it is the latter but 4K is going to be a fantastic viewing experience for a niche market due to cost and lack of available content. I think it is very important to keep innovating in this way.

Schmidt There wasn't really a demand, but a consequence of a technological development that is always going on. You won't demand it until you have seen it. It's really overwhelming and will make its way.

Do you think 4K could be the shot of adrenaline Blu-ray needs, given that a BD disc is best suited to bring ultra HD content to the home?

Evans No

Hosp I strongly doubt whether we – as independent replicators – really need this "shot of adrenaline." After all, given the way the market and profit margins are developing in our sector, who on earth can still afford to invest in the next and even more complex generation of optical storage media?

Bradley It's likely that when 4K is adopted by consumers the content will be provided online by download or streaming. I can't see another version of BD (or other physical media platform) becoming mainstream – most consumers have format fatigue and feel aggrieved if they're forced to buy yet another black box.

Remblier I don't know.

Aubey Absolutely. Blu-ray Disc has been, and will continue to be, the best, most efficient, and easiest way to deliver HD and or UHD content to the end user. Pricing and numbers will be important to provide the confidence that customers need to make the investment. All this, of course, provided the Blu-ray Disc Association approves this format extension.

Clarke Absolutely, as long as there is the corresponding content to enjoy in this format!

Green I'm not convinced that 1080p is widely appreciated yet as an improvement on SD, so it will be interesting to hear what consumers generally make of 4K. Rather than a shot of adrenalin, I think that 4K on BD will most likely lead to greater confusion amongst consumers (it will of course require a new variation of the format and most current BD players won't be forward compatible). How many times can we expect consumers to upgrade hardware?

Phil Hall It may help redefine and differentiate Blu-ray from Standard definition.

Brown The launch and education of BD was far from flawless, but now that people get it, it's great. I don't think we need 4K to give it a boost, it is already adopted and growing well. It can't hurt. So, if 4K takes off, great.

Ingold The good news is that a lot of films are being mastered in 4K or above, so there will be content available. But viable delivery of 4K to the home is key to its adoption. Discs that are capable of delivering compressed 4K films are not projected to be out until 2015 when both Sony and Panasonic intend to release optical discs that will hold a minimum of 300GB of data. 2015 is still two years away. According to the British Video Association, 179 million discs were sold in the UK last year - bringing in six times more money than on-demand services. However, on-demand is on the rise while 14% fewer discs sold in 2012 than the year before. On-demand could win the battle for delivering 4K, but it also needs better compression, bigger storage and higher bandwidth to deliver the ultra high definition content. For a start, 4K servers will be used to deliver content to the home - like that by Sony with its 4K TVs and Redray's 1TB 4K Cinema Player. The winner - 4K on-demand or 4K optical disc - is likely to depend on timing, cost and ease of use.

Bock No

Ed Hall Blu-ray will always suffer in the shadow of DVD. 4K will not change this.

Kohlen Yes

Bono Sadly, it might very well be a case of too little, too late.

Gilliat-Smith In theory yes, but the problem is technologically how to get such large content in to the home in a cost-effective and timely manner.

Schmidt It will be one more advantage that BD offers in comparison to DVD and it will be one more reason to buy a BD rather than a DVD. But DVD won't die because of that. And Ultra HD will benefit from a standard already known.

The revival of vinyl points to a renewed interest in high-quality audio. Pure Audio Blu-ray (BD disc with uncompressed audio) is being launched. Do you think there is a sustainable market for it?

Evans I think there is a market for it, but qualifying it for the long term is tricky. It currently exists because it is difficult to deliver hires audio to fans, but as internet speeds improve then like HD movies, they become a possibility to stream and download.

Hosp As a company who loves music and audio we have to say, unequivocally, that we see a market here. For us, BD Pure Audio is the new Super CD which literally opens the ears of true music lovers (and those who aspire to be like them). BD Pure Audio now has all the potential of enabling consumers to transform their home cinema into a concert hall.

Bradley I don't think that the vinyl revival is as much to do with the quality of the audio as a nostalgic regression to the time when music was appreciated in a different, more linear manner - the 'anti-shuffle' generation who likes nice artwork on their album covers. It's unlikely that Pure Audio BD format will be widely adopted.

Remblier I have a couple of Pure Audio Blu-ray discs. The sound is great. Not on every disc, but in general it is a real benefit for the listener. But why did they choose to re-edit albums that everybody already owns in LPs and CDs?

Aubey There very possibly is a market. The BD player has a solid penetration rate in many countries, allowing customers to play HD audio discs without investing in new equipment. BD provides a format that can deliver the high resolution audio quality desired through a stereo system in the same way that a CD does.

Clarke Yes. With Pure Audio Blu-ray, consumers can enjoy music on their fancy stereo systems, plus take the music with them 'legally' on mobile devices. More significant is that it allows the re-release of older successful titles, which will means high revenues for the record labels.

Green I find it intriguing that conventional wisdom suggests successive generations of technology deliver greater quality, yet the biggest revolution the music industry has faced, namely MP3, represents a degrading of quality compared to its forerunners. Consumers have been happy to trade quality for convenience. Yes, vinyl is seeing a revival, but this will only ever be a niche market. Super Audio CD and DVD-Audio both had their supporters, but were never commercially successful. Pure Audio Blu-ray will have its proponents, but it too will only serve a niche market.

Phil Hall Like the UltraViolet dilemma, education on the benefits of Pure Audio BD is the key.

Brown I love the Pure Audio product, but the question is "does the mass consumer understand it, where can they play it, and will it be enough to drive CE sales to do so?" After all, we are in an era where people listen to music through their phones speakers! They don't even see the need for great sound quality at the CD level. I wish it well but, well, we'll see.

Ingold The real difference for an audiophile between vinyl and CDs or digital files is the difference between analogue and digital. The revival of vinyl isn't just about high-quality audio, it's about high-quality 'analogue' audio. Vinyl provides a continuous uncompressed sound wave. In contrast, digital (CD, mp3) offers compressed audio via sampling. That's not the original recording. Even an uncompressed audio format like PCM samples the data. The warmer sound of analogue audio is what makes the difference for audiophiles. For them, vinyl will continue to win over any Pure Audio format.

Bock Yes

Ed Hall Yes, provided this can be converted into an MP3 or digital format. High-quality audio needs to be accessible across all media.

Kohlen There is a market for Pure Audio Blu-ray, the same way there was a market for Super Audio CD.

Bono Not really, no.

Schmidt Why should its fate be different from that of DVD-Audio? Besides, vinyl is not a 'high-quality' audio medium, its just another way of enjoying music. In the era of MP3 the demand for high-quality audio like DVD-Audio, SACD or BD Audio will be very small.

How do you see Hollywood squaring the circle between the inexorable fall of high revenue-producing packaged media and the unstoppable rise of low revenue-generating online digital delivery?

Evans They can't. They made such ridiculously high profits from DVD, and they still make profits today from it - just not as high as it was, but they need to make whatever solution universal like DVD was. If it's UV, then make it work the same everywhere. DVD works because everyone knows how to use it.

Hosp There's no doubt that digital delivery has its upsides: no manufacturing costs, fast handling, zero returns... At the start, enthusiasts promoting the idea thought that it would save them all the work and costs of sales and distribution. This idea has now been disabused. Even so, the consumption of digital content will increase, of course, because consumers no longer have the same TV habits. Packaged media however is increasingly turning into products for connoisseurs and collectors, but it definitely will no longer cover the mass market.

Bradley Subscription delivery is the current solution for reliable revenue generation, and so far these providers have avoided the 'Spotify-backlash' with paid subscription from the onset. These solutions can be seamlessly combined with digital lockers containing purchased 'right-to-view' content, and suitable priced to reduce piracy.

Remblier Perhaps by producing good artists and not thinking only about making money?

Clarke Hollywood controls the levers and can regulate the availability and delivery format based on simple laws of economics – demand vs. supply. Consumers can only access what is made available to them, and since Hollywood has a monopoly and full rights to movies, they could easily limit or allow access in whichever delivery method deemed more feasible or profitable.

Aubey Hollywood needs to agree on a better pricing model for the Blu-ray format. Blu-ray is the best way to deliver the highest quality video and audio to consumers. Until high speed broadband is fully stabilized and available, the most efficient and pleasing way to view high quality content will be from packaged media.

Green This has to be on the premise of differentiation – packaged media will deliver the best quality home entertainment experience for years to come. The interests of film studios and CE manufacturers alike will be best served by educating consumers to understand the quality benefits of packaged media. This will be especially true of 4K.

Phil Hall Hollywood and this industry must extol the benefits of a simple multi-platform digital delivery solution.

Brown It's a tough one. First we have to narrow the choices, make the route to digital clear and the experience better. Change is always a stimulating time.

Ed Hall Through subscription services such as Netflix, Blinkbox, may give these services exclusives at a higher price before physical release. This has been seen on TV already (*House of Cards*) and the transition to movies will surely follow in the next 12 months.

Kohlen At the moment, I have the feeling content owners want to make a Blu-ray title too fancy with too many extras. Just make sure the movie or TV series is encoded in the best quality and at the same time put more effort in better set-top boxes with a good GUI and better quality video.

Bono By first spending more effort on special packaging and content for deserving titles, adding UltraViolet to all new releases, then later by moving to digital-only and selling new releases at premium prices.

Gilliat-Smith Studios are experienced marketers and I am sure have looked at most things in trying to heighten the perceived value of the packaged media over online. Meaningful discounts for future purchases authenticated by proof of prior purchases, and other such concepts where consumer feels they are getting a good deal, much like Tesco offers at the checkout, would help.

Schmidt The market is regulating itself, and so will Hollywood. I think production costs will fall in the next years and also the number of films that will be produced. Hopefully, the quality will rise.

If you let your imagination run wild, what system, format or application aimed at delivering content to the home would you like to see implemented in 10 years time?

Evans Same as last year - I love the retro possibilities that formats like vinyl are making waves in.

Hosp As marvellous as the idea sounds – the idea that we are advancing towards a society in which all content is available at any time – the Gross National Product of Happiness – is unlikely to rise to any perceptible degree. Seen from this vantage point, what counts is not so much the quantity, but the quality of the content. And the same will still hold true ten years down the line. All this is inseparably linked to inspiration, creativity and the ability to strike a nerve and touch people's hearts. As human beings we are extremely fortunate in that this outcome isn't really programmable in advance. It's not really controllable. So, in the final analysis, technology is always a step behind people – and that's a comforting thought.

Bradley I don't think there will be any great shift in how content is delivered, but I can imagine having access to a large number of online 'broadcast' channels that are curated and created based on my personal viewing habits – the iTunes Genius, Tivo's smart functionality combined with social media input. I don't have enough time to research what I should be watching and currently rely on traditional broadcasters choosing for me, plus suggestions from friends whose judgement I trust. I can imagine all of this being combined in a single viewing portal that can be accessed from any screen (TV, computer, tablet, smartphone, Minority-Report-midair-touchscreen) at any time. However, I'm not sure where the revenue stream will be in this paradigm, so it may just be a pipe-dream.

Remblier I don't have to imagine, it's already here. The prices of 4K 3D glasses-free TVs have just to come down!

Clarke My dream is to have a tablet and pocket-sized device which can be synchronized wirelessly or through a docking station. Both should have integrated high-speed modems, SSD, telephone capability, display and HDMI ports and capable of running 64-bit applications. With these I can communicate, monitor and control everything in my life.

Green As a consumer I'd like to have an extensive selection of content available on demand, at my fingertips, delivered at digital cinema quality for playback on the largest flat panel, high contrast screen that will fit in my living room. I'd like bonus materials and other added value content to be available, but for me, picture and sound quality are most important; 3D is interesting and for some content, such as animated features, it can really add value, but mostly I find it rather distracting.

Phil Hall A one-time, simple, generic, studio- and vendor-agnostic membership system, allowing consumption of content. Standards are the key here, with the user experience apparently seamless in delivered content whether in the cloud, on the home server or on physical media.

Brown We at Cinram have a strategic view on that, ask me again soon. For now, I'd say give the consumer a compelling and easy route to a great experience and they'll take it. Confuse them with too many choices and a poor experience, and they will just wait and/or seek the content through alternate means.

Ingold Forty years ago, X10 allowed us to deliver some data around the home using the electrical wiring, and hippies were environmentalists. Now we have the Connected Home and Sustainability. Twenty years ago at IBM we were developing touch input devices and speech recognition. Apple made that mainstream with the iOS devices and Siri. Ten years ago, 3D printers were being showcased at SIGGRAPH; MIT was demonstrating screen projection onto glasses and all the Goths at the show (myself included) were dressed in cyber fashion. 3D printers produce new feet for ducks, and wearable technology is on the rise with Google Glass, iWatch devices and the Nike+FuelBand. Ten years from now, I want to see off-grid -powered Smart Homes that allow for the easy connection of technology throughout the home. Devices can receive all data from the 'cloud' as well as store locally. Movement tracking and speech recognition will have become more mainstream. 3D printing will make more products remotely accessible. And wearable technology, whether visual interfaces linked to data storage and retrieval, flexible OLED garments or health monitors will become more common in our daily lives.

Ed Hall High-speed broadband blanketed across the UK, not just confined to London and towns and cities. And affordable!

Kohlen It all will be in the cloud with codecs beyond the quality and efficiency of H.265.

Bono Holograms flying all over the place from my flexible bracelet!

Gilliat-Smith Immediate seamless viewing of new movie content on my home TV for which I would be happy to pay a premium for.

Schmidt 3D Ultra HD on hologram cube along with digital delivery on my favourite VoD platform wherever I am, with glasses with integrated surround earphones that displays 3D when I'm on the move outside.

A last word

Hosp Just as our industry increasingly lacks a feeling of self-worth, I fear consumers continue to lack a sense of collective responsibility. Anyone who doesn't pay or doesn't wish to pay anything for content contributes to the growing deterioration of quality in the creative economy. Now that leaves people working in this sector in a precarious situation. It's time to start realising this, too. After all, it's hardly what you might call an illustrious development for an advanced civilisation.

Bradley I'd like to state categorically that (now I've had a chance to watch it as it' has finally landed on Netflix) *Cowboys and Aliens* was a huge disappointment of a film not even saved by Daniel Craig wearing chaps!

Brown At the end of the day, it's all about content. People don't buy discs, or download digital files or for that matter even buy players or TVs for any other reason than to watch, listen and play content. If we make sure that we give the consumer easy and legal choices to do that, then we will all be fine.

Kohlen Let us all put quality first again, so we can have great products.

Index