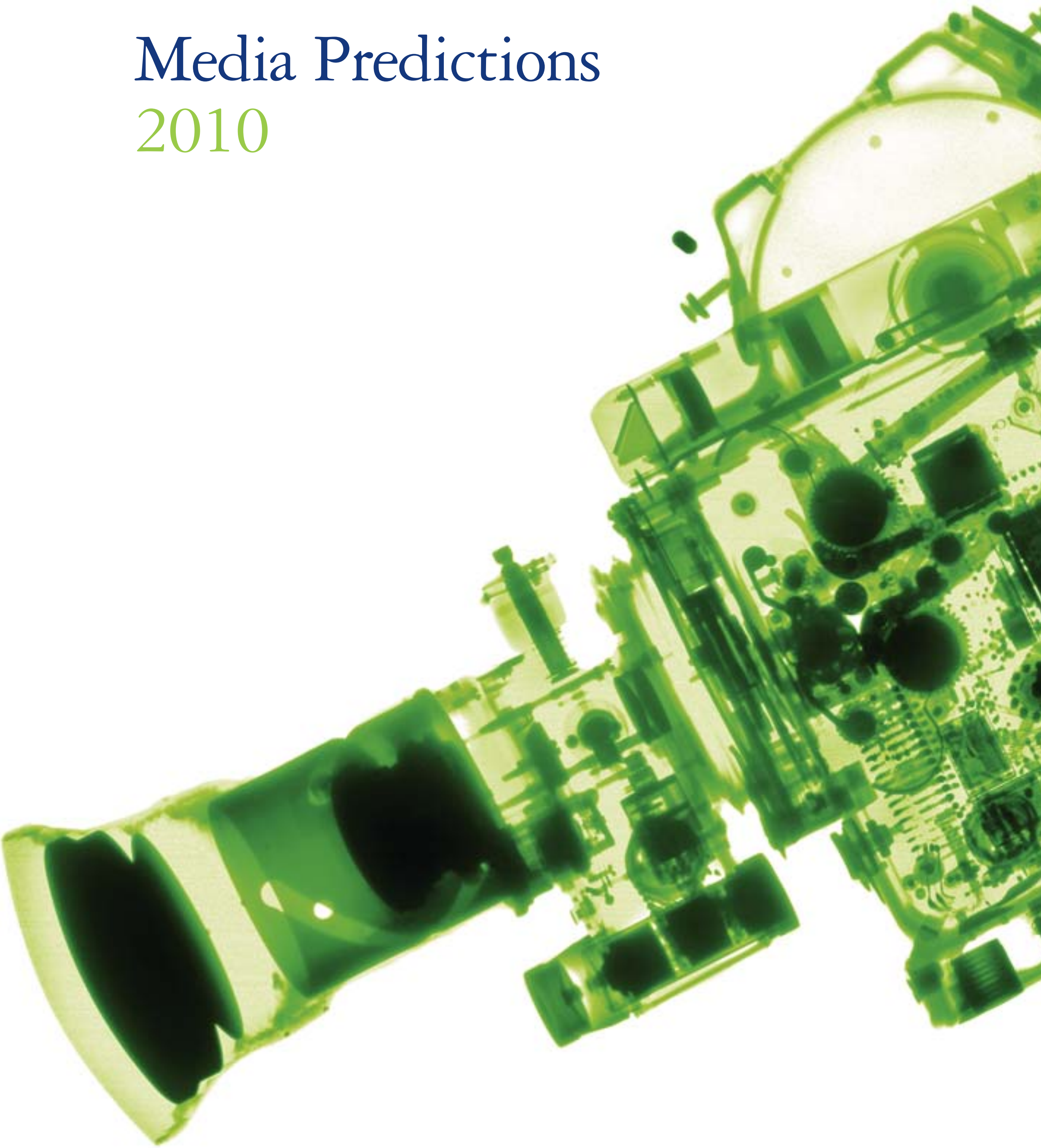
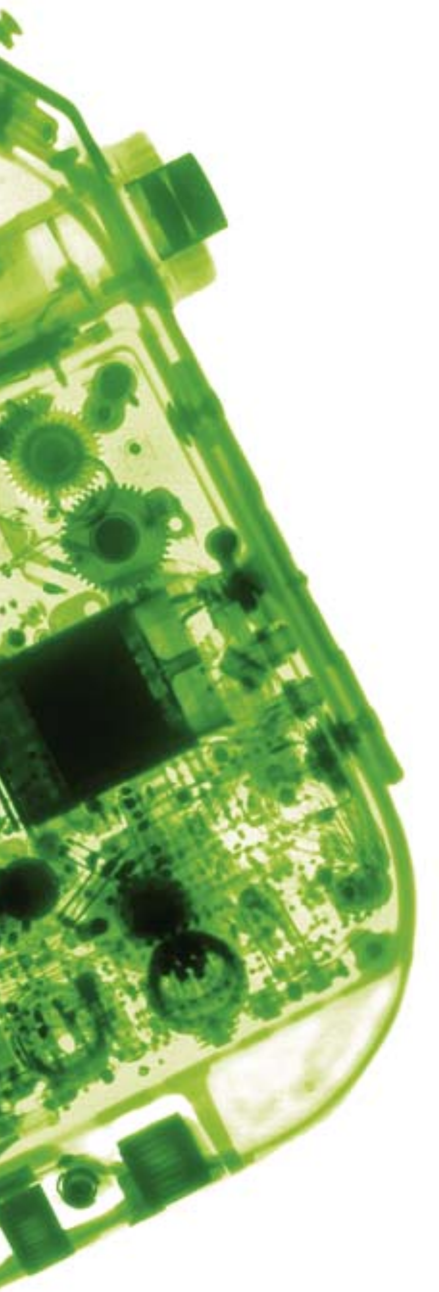
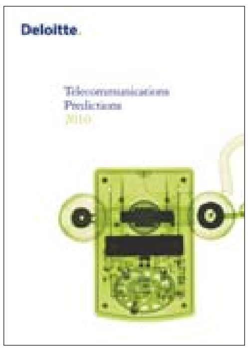
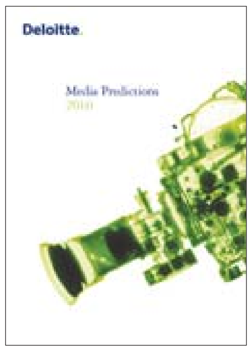
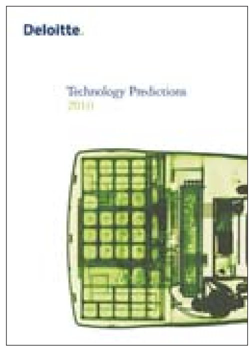
# Media Predictions 2010





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There are dedicated TMT practices in 45 countries in the Americas, EMEA, and Asia Pacific. DTT's member firms serve 92 percent of the TMT companies in the Fortune Global 500. Clients of Deloitte's member firms' TMT practices include some of the world's top software companies, computer manufacturers, semiconductor foundries — wireless operators, cable companies, advertising agencies, and publishers.

**About the research**
The 2010 series of Predictions has drawn on internal and external inputs including: conversations with TMT companies, contributions from DTT member firms' 7,000 partners and senior practitioners specializing in TMT, discussions with financial and industry analysts, and conversations with trade bodies.

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# Foreword

Welcome to the 2010 edition of Media Predictions. This is the ninth year in which the Deloitte Touche Tohmatsu (DTT) Global Technology, Media & Telecommunications (TMT) Industry Group has published its predictions for the technology, media, and telecommunications sectors.

Predicting always presents fresh challenges — which we are pleased to address. This year's report has been shaped by two in particular.

First, the global economy. If there was one advantage to making predictions for 2009, it was confirming the consensus view that most major economies were expected to fall into recession. (They did, with a few notable exceptions, such as India and China.) In 2010, the picture is far more mixed. While it is generally agreed that most economies should recover, there do not appear to be enough shapes or letters available to describe the possible permutations that recovery may take — will it be a U, a V, a W, or a square-root recovery? And a double-dip recession is still possible once the stimulus ends. At the time of writing, governments appeared bullish, corporations more bearish, and economists divergent.

Digitization also continues to be a force. Although it precedes the current recession by decades, it is still contributing to a reinvention of the global media sector. This fundamentally simple transition — the conversion of analog data into digital form and its distribution via digital networks — not only changes the balance of power within the industry but can also reset the scope of other sectors. Anticipating digitization's impact is commendable. But timing is everything and preparation is paramount. Being caught out by the pace of digitization has been, and will continue to be, catastrophic.

Most of 2010's media predictions are focused on the consequences of technological change — particularly digitization — and are shaped by 2010's economic outlook. We address a wide range of topics, including demand for on-demand, online advertising, eBooks and eReaders, business models for recorded music, the integration of television and the Web, print's monetization of digital, the relevance of the vending machine in a digital world, and the short-term prospects for 3D television.

I am often asked about Predictions' track record. We are never likely to be 100 percent correct. But with a sustained focus on pragmatism and an aversion to hype, we are more often right than wrong. We never include a prediction only because it may come true in the next year. Rather, our focus is on identifying potential "black swans" whose impact could have major, strategic ramifications for companies in the sector not just in the coming year, but possibly for many years to come.

As a result, each prediction is designed to start or stoke a further conversation – not to stop it. And we trust that the Predictions' launch, expected to take place in over 50 cities around the world in 2010, reaching over 5,000 industry executives, serves precisely this purpose.

I wish you every success for 2010.

**Jolyon Barker**
Global Managing Partner
Technology, Media & Telecommunications

# Linear's got legs: the television and radio schedule stays supreme

DTT TMT predicts that in 2010 most video and audio content will continue to be consumed linearly — that is, according to broadcasters' programming schedules. Our estimate is that over 90 percent of all television watched and over 80 percent of all audio content consumed will be via traditional broadcast. Linear will prevail despite the proliferation of technologies, such as digital video recorders (DVRs), pay-per-view, on-demand television, podcasts, and online music services, all of which permit viewers and listeners to opt out of the broadcasters' schedules.

The sovereignty of the schedule runs counter to many commentators' expectations. Indeed, the fact that schedules still determine what and when the majority sees or hears belies many predictions over the last decade foretelling the imminent demise of schedulers, disk jockeys, and conventional broadcasters.

A few, among them many industry executives and their families and friends, may already largely bypass television and radio schedules. But for the mass market, the vast majority of content consumed is likely to be linear. In 2010, average weekly consumption of scheduled television is likely to run between 20 and 30 hours in major markets.[1] This compares to an average of 90 minutes to two hours for all forms of nonlinear television, whether in the form of DVDs,[2] DVRs,[3] or video-on-demand.[4] To put the contrast in perspective, US consumption of online full-program video would have to rise over 75-fold just to equal scheduled TV viewing.[5]

Despite the success of MP3 players and the ubiquity of CD players, the average time spent listening to the radio is likely to be up to about 20 hours.[6] In many markets, radio is likely to remain more popular than the Internet, despite the variety of consumer activities and applications available through the Web. In a few countries, the majority of citizens may choose not to listen to any pre-recorded music on any given day.[7]

Linear's supremacy is likely due to both ease of use and inertia. For some, the ability to choose what to watch or listen to and when is a necessity. But for the majority of individuals, for whom time is less of a constraint, the volume of television watched — an average of 35 hours per week in the United States — makes choosing programs one-by-one tedious and superfluous.[8]

Linear's lead may actually increase in 2010.[9] Generally speaking, the purchase of a new piece of television equipment, or the launch of a new service, such as high-definition (HD) or a movie channel, causes a spike in consumption. In developing countries, sales of new television sets have been particularly strong.[10] In these countries, the progress of broadcast television is evident because of strong growth in advertising revenues.[11] In many markets, HD adoption rates are progressing steadily.

Consumption of linear TV may also be encouraged by the availability and demise of on-demand sites. The availability of on-demand can increase overall demand for scheduled programming: content watched using online catch-up services can encourage consumers to watch the next episode or listen to a radio presenter's next show live. The most popular content viewed online tends also to be the most popular watched via broadcast.[12] And while new online video sites continue to be launched, there may also be a number of high-profile failures, largely resulting from the inability to make online advertising-funded video pay.[13]

Consumption of scheduled content could also grow because of the introduction of charging for nonlinear services that were previously free.[14]

Misperceptions of linear broadcasting's imminent demise may be due to misinterpretation of market data. In 2010, many surveys of media consumption are likely to feature self-reported data. Respondents to such surveys tend to reflect their idealized selves rather than their actual consumption habits.[15] As a result, documentaries and news programming may be over-emphasized, viewing of traditional media understated, and use of new media and new devices inflated. Some linear consumption may also simply be overlooked, such as the many hours spent listening to the radio while commuting.

It may be that in the long run the majority of all audio and video consumed will be nonlinear. But in 2010, most consumers of content are likely to remain happily beholden to the schedule, rather than resentful of what some pundits have labeled the "tyranny of the schedule".

Further, comparisons of nonlinear to linear are often nonequivalent. Consumption of nonlinear may often appear greater as the numbers reported are larger.[16] But a like-for-like comparison, based on viewing or listening hours, for example, would probably reveal a contrary picture. Broadcast is measured by viewers. Metrics for online video include page impressions, page views, unique users, and requests. Often, little distinction is made between a clip and a full program even though the commercial significance for each may vary considerably. The definition of an online "user" may remain vague,[17] as well as the quantification of an online view.[18]

It may be that in the long run, the majority of all audio and video consumed will be nonlinear. But in 2010, most consumers of content are likely to remain happily beholden to the schedule, rather than resentful of what some pundits have labeled the "tyranny of the schedule."[19] However, given that hundreds of millions of individuals may be spending at least 40 percent of their waking hours listening to television or radio, linear is likely to remain dominant not just in 2010 but for many years to come.

**Bottom line**

The broadcast industry and equipment manufacturers should bear in mind that consumers do not necessarily embrace the options afforded to them by advances in technology. The behaviors of early adopters do not always become mainstream.

However, the fact that consumers are happy not to choose the majority of their audio and video content does not mean that consumers will not value and pay for the availability of choice. Consumers appear quite content to purchase devices and subscribe to services that they then hardly ever use.

For these reasons, initiatives to offer greater choice via non-linear are valuable, as long as monetization is primarily focused on the option to choose.

Advertisers should carefully analyze the various statistics regarding media consumption. If linear continues to dominate, concerns about ad-skipping on DVRs and the possible success of ad-free video on demand are likely overstated, while buying ads on conventional radio and television may remain more effective than some analysts are forecasting. Advertisers should not necessarily accept the common perception that television audiences are in long-term decline. In several mature markets, as well as most developing ones, broadcast television viewing is more likely to rise than decline.

The industry should also consider that, for many, the schedule is far from an inconvenience. In fact, the scheduler and the content timetable are fundamental threads of the social fabric in many societies. Despite the fragmentation of both television and radio sectors, programming remains a major source of discussion.

# The shift to online advertising: more selective, but the trend continues

DTT TMT predicts that in 2010, online advertising spending will not only grow in absolute dollars but is also likely to grow substantially faster than the total advertising market, and continue to gain share. Not all online ad categories will participate equally — display[20] is likely to underperform — but the broad category will likely see its global share grow from roughly 10 percent at the end of 2009 to 15 percent by the end of 2011.[21]

This does not entirely differ from the consensus: there are those who also forecast a continuing shift to online — but some of these observers are not impartial. Meanwhile, the non-online (traditional advertising or media industries) are hoping (and predicting) that the online share gains of the last five years are about to slow, halt, or even reverse. This may be wishful thinking.

Prior to the recession there was a common belief that online share would continue to grow no matter what. The evidence of recent quarters does not support this view. Year-over-year online advertising revenues fell in each of the first three quarters of 2009.[22] However, two important qualifiers are necessary. First, although online fell roughly 5 percent, this was still a much smaller decline than almost any other advertising category.[23] In other words, *even though online growth was negative, it continued to gain share*. Second, although the overall online figure was negative, that weakness was largely caused by areas other than search and video. Banner ads, for example, were very weak.[24] For the first three quarters of 2009, search actually grew by almost 7 percent, meaning its relative growth rate versus traditional advertising spending widened, even during the recession. There is a possibility that the recession has not slowed the growth of online share, but accelerated it.

As the global economy emerges from the crisis, most analysts expect advertising spending to grow by about 2 percent in 2010,[25] albeit from severely depressed levels. However, our discussions with advertisers, ad agencies and traditional media indicate that many advertising buyers continue to believe that online spending offers "more bang for the buck." They also claim that online is currently too small a portion of their spending, and that it is the only solution that allows advertisers to measure the effectiveness of their spending.[26] Far from peaking at 10 percent share, some advertisers think that the gains in online seen in the past five years will in fact gather speed in the next five.[27]

The categories of online that are likely to experience the greatest growth remain search, click, social network, and cost per action (CPA). Based on their performance in the first half of 2009, the traditional media industries that seem the most vulnerable to losing share to online are magazines and newspapers, with radio and outdoor in the middle, while broadcast and specialty TV/cable seem to be the most resilient.[28] Regardless of the reasons why, this trend seems likely to continue.

Broadly speaking, any category of advertising that allows for measurement of spending effectiveness is likely to be relatively successful. Advertisers increasingly want the ability to measure effectiveness and are becoming indifferent to other purported advantages.[29]

**Bottom line**

If online advertising continues to gain share in 2010 and beyond, then the bottom line for the media and advertising industry will be straightforward: do what has worked over the last five years. But there is another possibility. The media and advertising industry may be about to undergo "innovative disruption."[30] If online advertising turns out to be a disruptive technology, then there are two likely consequences, according to the theory of innovative disruption.

First, the disrupting technology begins to take market share from the existing players — in some cases more than 90 percent — as digital has in the photography market. Second, even when market share is low, the disruptive technology lowers prices and causes the size of the market to shrink. This deflationary effect is partially offset by elasticity of demand (as prices drop, buyers buy more), but usually the market can shrink in dollar value for years. Recorded music would be an example: sales have dropped every year since 2000, and have fallen by almost 50 percent in that time.[31]

Should online advertising have this effect on the traditional advertising model, industry players would need to plan for a possibly sharp and permanent reduction in revenues and margins. Online represented roughly 10 percent of the $600 billion global advertising market in 2009, and in a disruption scenario could see its share climb over 50 percent, while also causing ad rates to fall and the market to contract.[32]

In that case, the entire advertising and ad-supported ecosystem would need to consolidate, control costs more aggressively, and seek new business models.

Traditional media companies may need to explore tactics that will allow them to bridge a period of continuing losses in advertising market share. Absolute revenues may increase, depending on the strength of the global recovery, but business decisions predicated on a return to the "old normal" might not be optimal. Cost growth should be restrained in case EBITDA margins are further compressed. These companies also need to embark on a two-track strategy. First, they need to develop an earnings-positive online platform that supports their traditional business. Second, they quickly need to embrace tools, technology, and a new business model that matches the perceived advantages of online, specifically the measurement of advertising effectiveness and delivery of value for dollars spent.

Those who create advertising are also likely to be affected. Generally speaking, ad agencies get paid based on the size of the media buy. Developing a $40 million ad campaign is usually about four times as profitable as a $10 million campaign. But, in this new world, if a $10 million campaign can be measured as producing equivalent results to a much larger spend, then the ad agency should be paid as much money as before. More in fact – since they just saved the ad buyer $30 million. In a world where advertising budgets could undergo innovative disruption, agencies need to charge on the basis of results, not budgets.

# eReaders fill a niche, but eBooks fly off the (virtual) shelves

DTT TMT predicts that in 2010 stand-alone eReader devices will likely sell five million units globally. Meanwhile, electronic versions of books (eBooks[33]) could sell as many as 100 million copies. While the makers of eReader devices might be initially pleased to hear this, the downside for them is that more eBooks may be read on PCs, netbooks, smartphones and netTabs[34] than on single-purpose eReaders. With sales of $1.5 billion[35] likely, eReaders are far from failing, but competition from other devices is likely to slow their growth rate going into 2011, even as eBook growth remains close to 200 percent.[36]

The consensus is that eReaders are poised to take off as consumer devices.[37] The combination of eInk (a technology that produces relatively high-quality black-and-white images with very low-power consumption) with a book-retailing ecosystem and software (that facilitates eBook purchases) is considered to be sufficient to spur significant adoption by consumers. Some forecasts expect 2010 sales to reach 10 million units[38] or more. Further, many analysts have dismissed the threat of non-specialized devices to eReaders, citing their disadvantages of short battery life, form factor, and small screen size.

Although eReaders are likely to experience very strong growth in 2010, the claim of a "breakout success" may be harder to live up to. The devices have been available in various versions since 2004.[39] But with roughly 1 percent household penetration today, the eReader's adoption curve lags those achieved by portable and connected consumer devices, such as Internet-connected smartphones, GPS units, and netbooks.[40]

Consumers have voiced numerous objections to the eReaders currently on the market.[41] The devices are seen as too expensive, well above the optimal $199 price point. There are concerns about ruggedness. The display is a major issue. Although eInk technology is more power-efficient, the look has been compared to a dirty newspaper. It can't yet display in color, and the refresh speed is slow. While user interfaces are generally well regarded, consumers are finding the differences between a physical book and the eReader challenging. In one well-publicized test at a large US university, many of the students who were given free eReaders (bundled with e-textbooks) were dissatisfied, citing their inability to attach sticky notes, make notes in the margins, scroll back and forth rapidly, and rely on consistent pagination for citations.[42]

One challenge to both eReaders and eBooks lies in the different consumer ownership rights for traditional print versions versus electronic versions. Digital books have no right of resale, eliminating the electronic equivalent of the $2.5 billion used-book market (with textbooks representing $2 billion).[43] That said, there have been isolated, but well-publicized, instances of eBooks being remotely deleted from users' devices because of copyright issues.[44] Finally, and in direct contrast to one of the features that helped sell over two billion MP3 players, consumers who buy a print copy of a book have no ability to add it to their electronic library.

The ownership rights issue seems to be a barrier to consumers adopting eReaders, but does not seem to bother (or not as much) those who are buying electronic versions of books and reading them on non-eReader devices, probably because the content provider can't remotely delete the book.

Although it may seem suboptimal to some, perhaps even defying reason, evidence shows that consumers are willing to read (and in some cases even write[45]) full-length books on small-screen smartphones or large and heavy laptops.[46] Each extreme may seem less than ideal for reading, but it is the general nature of PCs and smartphones — not to mention their ubiquity and connectedness — that has consumers willing to read on a device that is "good enough" rather than buying another expensive and fairly bulky device.

Further, if our technology prediction on netTabs comes to pass, these multipurpose devices will be similar to eReaders in portability and cost, and could be expected to offer an even more credible or desirable eReading alternative to consumers.[47]

**Bottom line**

Magazine and newspaper publishers may be serendipitous beneficiaries of the growth of the eReader. Although most devices focus on the book applications, subscriber revenues for other print content may have potential if enough consumers get used to reading — and paying for — content on their electronic devices. One challenge of getting online subscriptions has been the sometimes complex payment process. Partnering with a single central clearing house, whether an app store or e-commerce portal, could remove that barrier.

The success of eBooks poses a potential challenge for authors and publishers as well. Although eBooks are easy to purchase, the low price for the average title suggests that the economic model is changing. The amount left for content creators and publishers on a $9.99 sales price is likely to be much lower than in the past.[48] Lower price points are not new in the publishing industry,[49] but these have tended to be restricted to a few best-sellers, not hundreds of thousands of titles. New revenue-sharing models are probably necessary.

The recorded music industry has been badly damaged by the emergence of digitized music, music players, and the piracy that has followed. Yet the CD remains attractive, in part, because purchasers buy the right to make a copy for personal use for their own MP3 player. If those who bought print books or magazines were given a similar right to download content to an eReader, or other devices, it would likely help maintain sales of the physical copy.

As with any transition from analog to digital, piracy is a risk. So far, the problem has not been significant, but there is cause for concern. A recent best-seller saw hundreds of illegal copies available for downloading, only minutes after publication.[50] The solution, tighter digital rights management software and devices supporting fewer publishing formats, could cause its own problems of potential "lock-in" issues for consumers, dissuading purchases until a single unified standard emerges.[51]

"eReaders have been available in various versions since 2004. But with roughly 1 percent household penetration, adoption lags that achieved by other portable and connected consumer devices, such as internet-connected smartphones, GPS units and netbooks."

# Publishing fights back: pay walls and micropayments

DTT TMT predicts that in 2010 the newspaper and magazine industry will continue to make noises about charging readers for the online portion of their business. But that talk is unlikely to be matched by actions or results. Only a small percentage of titles worldwide are likely even to attempt to implement pay models, and even fewer are likely to do so profitably. There will likely be at least a few online pay initiatives that result in high-profile successes, although they may be the exceptions that prove the rule. In short, across the entire publishing industry, online revenues will continue to consist mainly of advertising.

Most observers agree that the online newspaper and magazine model of free content supported only by advertising is broken. Even "successful" online sites, with tens of millions of unique users, produce minuscule revenues, measurable in tens of thousands of monthly dollars. Further, the practice of making the entire publication available for free online seems to be accelerating the decline of high-value print subscribers. Some analysts believe that it is impossible to go back to an online paid model, suggesting that "you can't put the genie back in the bottle."[52] Others argue that every title should move to a pay model, and that the free model is "flawed."[53] We believe that the more likely outcome for the industry will be a mix of models motivated not (in most cases) by the revenues generated, but by the need to reduce ongoing cannibalization of existing print subscribers.

A few pioneer publishers either refused from the outset to join the stampede to free content, or reversed course and starting charging customers for their online versions. So far, at least one or two titles have seen success with this strategy, and print subscriber losses have slowed or even reversed. Online earnings from titles like these may be modest, but they still contribute to the bottom line, and advertising revenues have not been adversely affected, at least for these titles.[54] One of these publishers has gone even further, charging separate fees for print and online, and an additional fee for specialized mobile versions.[55] One advantage of pay walls for online editions is that although the number of online readers drops (sometimes by as much as 90 percent), the remaining readers are better understood from a marketing perspective and produce higher-quality online earnings and higher click-per-mille (CPM) rates.[56]

After the success of these pioneers in 2008, many titles considered charging for online access to content, but only a handful did in 2009.[57] Several large newspapers and chains once rumored to be thinking about pay walls have now decided against it, or are choosing hybrid models where almost all content continues to be free; however, some very limited premium or specialized content carries a charge.[58]

Billions of dollars of revenue have already been generated 99 cents at a time. The micropayment model is working well so far in the music and smartphone app markets and is being considered as an option by publishers. Instead of monthly or annual subscriptions, readers will be able to purchase content "one bite at a time" — individual articles for five cents, features for a dime, or editions for a dollar or less.[59] But some analysts have argued that newspaper and magazine readers are somehow different and will refuse to pay even small amounts for access to content. Our view is that online readers might be willing to become micropayment customers (or subscribers) — but only if the content is good enough. Further, they are more likely to buy one 99 cent edition than 20 articles at five cents apiece.

That said, 2010 may not be the breakout year for micropayments. There are too many hurdles, such as the likely absence of standardized or convenient methods of payment, as well as a proliferation of payment platforms. Existing credit and debit card issuers, alternative payment platforms, technology vendors, and telecommunications operators might all offer their own micropayment platforms.[60] However, purchasing a week's worth of groceries online justifies the time taken to enter credit card details, but acquiring an article for 30 cents in an online newspaper may not. Also, the value of the micropayment strategy to the content provider requires volume. Accepting one micropayment per customer every two weeks might result in transaction costs exceeding gross margins.

Newspapers and magazines will likely at least consider these options in 2010. But the most important strategy will probably be to continue to retain as many print subscribers as possible and hope for a recovery in print advertising linage. Getting that right may have ten times the immediate economic impact of any pay wall, or micropayment.

**Bottom line**

The biggest challenge of pay walls is to ensure (before the walls are put in place) that the number of subscribers gained and print customers retained is of greater economic value than the drop in traffic that will almost certainly accompany the move to a paid model. Extensive market research is a must. Early data suggest that publications with wealthier readers may be more attractive candidates for pay walls.[61] Publications should use the latest marketing technology to capitalize on their knowledge about online paying subscribers and provide relevant and targeted ads that sell at a premium, not a discount. Further, the walls need to be uniformly secure — forcing some customers to pay — while leaving an open back door will annoy those who do subscribe and subsequently reduce their numbers.[62]

Those publishers who use pay walls will need to maintain and publicize the premium nature of their content. Excessive cost-cutting will likely devalue the brand and cause online subscribers to shop and read elsewhere.

Publishers considering micropayments should weigh the costs and liabilities as well as the potential rewards. While micropayments can boost revenues, the complexity and scrutiny implicit in offering this payment platform should not be underestimated.

Content creators should try and make transactions as large as possible to reduce transaction costs. Commission models for micropayments are likely to incorporate a minimum cost — reflecting the cost structure of the payment provider. Content aggregators should avoid losing their entire margin on transaction payments.

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# TV and the Web belong together, but not necessarily on the same screen

DTT TMT predicts that efforts to converge two of the biggest media distribution platforms — the Web and TV — will intensify in 2010. By year-end, more than 30 percent of broadband-enabled households are likely to interact occasionally or regularly with what they are watching on television through some form of computing device.[63]

However we anticipate that the most popular approach to delivering a converged Web and television experience won't be technology enabled. Instead a more pragmatic approach is likely to dominate: consumers are likely to fuse standard television sets with existing browser-enabled devices, such as WiFi enabled laptops, netbooks, MP4 players and portable games consoles and smartphones[64]. The convergence of television and the Web will be driven by the user him or herself.

Attempts to move Web-based content onto televisions have been under way for many years, with little progress.[65] Content optimized for PCs generally does not display well on television. Plus, content created on the assumption that the user will be equipped with a keyboard and mouse has proved challenging to interact with via standard remote controls. Also, and perhaps most critically, few televisions are Internet-connected. Even fewer have integrated Internet connections.

2010 is likely to see progress on all three fronts.[66] Websites are being built specifically for access and control via televisions. Web-based applications being adapted for access through a television set are being marketed as "TV widgets." Social networks, weather information, and content streaming services are some of the many applications that widgets will make accessible through the TV screen. A growing range of next-generation televisions is being launched not only with integrated broadband connections but with pre-loaded TV widgets as well.[67] Next-generation digital video recorders (DVRs) and set top boxes (STBs) will come with standard Internet accessibility.[68] Tens of millions of game consoles are Internet ready, even though consumers may not always choose this option.

Despite this progress, we still expect that the most popular approach to converged Web and television consumption will be the rough but ready combination of standard television viewing and consumers' existing browser-based devices.

The mismatch between the standard ten-year renewal cycle for televisions and strong existing consumer desire for concurrent consumption of Internet- and television-based content has contributed to the triumph of the pragmatic approach to date.[69] Most consumers are unlikely to justify a brand-new television just to have additional access to the Web, but they want to combine the Web and TV today. They want to discuss a television program with friends (or strangers), read movie reviews before deciding what to watch, search out gossip on a current show or series, or check sports statistics while the game is under way. And they do not want to wait for devices to catch up.

But a bigger reason why the demand for a truly integrated Internet and television environment may remain limited is that superimposing a Web application on top of a TV image may be as irritating as someone standing in front of the screen. An entire family's simultaneous social network commentary on the season finale of a reality show may leave little room to see what actually happens. And for some, sharing their personal commentary on a program with fellow viewers may be as appealing as making a romantic phone call in a crowded room.

One of the major beneficiaries of increased simultaneous usage of the Web and television may be advertising. In 2010, global television advertising is expected to be worth $180 billion, while global online advertising is projected at $63 billion. Commercials viewed on television can direct viewers instantly to websites: it is now possible for a product seen during an advertising break to be purchased before the program resumes.

**Bottom line**

The idea of blending the passive experience of television and the reactive elements of the Web is likely to become a significant phenomenon by the end of 2010. But the main agents of this fusion are likely to be the user, the content producer, and advertisers rather than an integrated device.

Making televisions Internet-enabled, either through the set itself or an adjunct device such as a DVR, is likely to create value. Functionality ranging from catch-up on a big screen to remote software upgrades is also likely to be valued. But superimposing elements of the PC Web experience onto a television screen may prove to be the most commercially successful combination of Web and TV.

One of the major beneficiaries of increased simultaneous usage of the Web and television may be advertising. In 2010, global television advertising is expected to be worth $180 billion, while global online advertising is projected at $63 billion.[70] Commercials viewed on television can direct viewers instantly to websites: it is now possible for a product seen during an advertising break to be purchased before the program resumes.[71] One study found that using online and television together resulted in 47 percent more positivity about a brand than using either in isolation[72].

As simultaneous Web and television use becomes more popular, television producers should create websites that not only support programming, but also feed off viewers' eagerness to react to what they are watching. Viewers can be directed to associated websites rather than surfing blindly looking for relevant information. Tie-in websites should be created for a range of devices (such as an MP4 player, netbook or smartphone), not just a PC. Talent shows, for example, may offer the chance to rate participants and their judges as well as guess that week's contest results.[73] Sports programming may provide relevant, real-time statistics. Documentaries are likely to offer ancillary information. All genres are likely to solicit viewer feedback.

# Music as a service rises up the charts

DTT TMT predicts that in 2010 subscription music services should finally start to thrive. Granted, the track record so far has been poor, ranging from modest success (a few hundred thousand subscribers per service[74]) to ignominious failure.[75] In 2010, the number of paying subscribers — as opposed to individuals who simply register — should exceed 10 million for the first time. With subscriptions ranging between $40 and $180 per year, total revenues are likely to be small, at about US$100 million, especially compared with global sales of CDs ($14.4 billion[76]) or digital downloads ($6 billion). But the decline of the CD is well documented, and the medium is unlikely to see a renaissance. This opens a large door for subscription services.

There is unlikely to be a single stand-out reason for this expected growth. But overall, the subscription music service is likely to offer greater levels of functionality and become accessible on more platforms, including smartphones. As these services become more useful, consumers will probably buy and enjoy more subscription services, and they will become more valued as a result.

Online and offline access[77] through mobile phones and other portable media devices[78] across all major platforms[79] should be a key driver of adoption. To date, subscription services have largely been fixed, PC-based offerings. Extending the service to portable devices — and in particular to the increasingly pervasive smartphone — enables the service to accompany the customer at all times, rather than just when sitting by a computer. The strong success of the MP3 player market this past decade and the enduring appeal of music radio has shown how powerful music is when portable. Enabling the music service to follow its owner blends ease-of-use, choice, and portability.

The growing desire among major industry players to make subscription music succeed is also likely to be key.[80] Existing industry players are likely to develop a more accommodating approach to licensing, with declines in global CD revenues encouraging that flexibility.[81] Music services may be offered licensing deals similar to those offered to radio stations, rather than just on a per-track basis.[82]

The number of subscription music services available should grow in 2010,[83] even if some current providers close shop. Several major new music services are expected to launch. These may be pure-plays or existing technology or media companies aiming to diversify their revenue streams.[84] Each wave of promotion, whether through conventional or viral advertising, is likely to raise the awareness of music services — although the entrance of new players could also drive average subscriptions down for the entire sector.

Competition should ideally encourage better overall service. The result should be a compelling, comprehensive service that blends the best elements of radio, music video, CD, and MP3 players, while exploiting the different capabilities of the devices used to access the service, including PCs, smartphones, and other portable music players.

By the end of 2010, new features are likely to include exclusive material such as live recordings[85] or tracks from finalists in televised talent shows; celebrity top 10 play lists, narrated by the individual; content that puts music in perspective, such as documentaries or artist interviews; search functionality, including searches by lyric or sound sample[86]; click-to-purchase for tracks currently playing[87]; variable streaming quality; expert and algorithm-generated recommendations; and even step-by-step guided tours of cities with a musical heritage.

As music subscription providers push users towards premium tiers, free services currently used as a draw may be downgraded. The number of tracks that users are allowed to listen to per day will be limited, for example, and advertisements attached to free tracks will be played at higher volumes. Thus, the free versions of the service will be less appealing, and non-paying customers will be encouraged to upgrade to a paid subscription.

**Bottom line**

The music industry needs little reminding of the need to fix the recorded music model. While demand for music in general remains strong and widespread, the CD is no longer a vehicle for growth.[88]

Premium subscription music services should be regarded as complementary and positive, not as a last resort. They should be considered a means of arresting the decline in recorded music revenues. The music industry should also be encouraged to note that the annual revenue per music subscriber is up to $180 per year, and is higher than that of a “heavy” CD buyer (someone who purchases at least one CD per month.)

Subscription services could also convert some of those who currently listen to music for free (legally or otherwise) from freeloaders to customers. Even in developed markets, a large proportion of the population does not purchase recorded music. For example, in the UK, 60 percent of individuals aged 12 and over do not purchase recorded music.[89]

The success of premium music services will depend on positioning. Selling on the basis of the money saved by not having to purchase all tracks is unlikely to convince most potential customers to buy in. Rather, services should be promoted on the offer of added value, whether because of its ability to access the service from any platform, the degree of customization available, the variety and caliber of exclusive content offered,[90] or the integration with functionality specific to each platform.

Offering complete catalogs is likely to be important, but all services may suffer some omissions. Some artists may prohibit their content from pay services if they feel they could earn more through other distribution channels. Others may impose a window of availability. For instance, the song may only become available through the service after an initial period of exclusivity. Music services are likely to be selected on the basis of their momentum: if an increasing number of artists make their tracks available and offer custom content to one service, this should bolster a service. A steady flow of departures, however, could become ruinous.

While subscriptions offer a vast range of content, they need to be manageable to be useful. Without guidance, listeners are likely to get stuck in a rut of familiarity. Music may need to be more like radio (which in many markets remains the most popular way to consume music[91]) to show off the choice available.

The industry should also manage CD revenue falls without undue sentiment or haste. The CD has been in decline (from a revenue and average selling price perspective), for most of the decade. However, it is still likely to generate billions of dollars in revenue for several years. The industry should still enjoy some major CD successes, similar to that experienced by the Beatles Box Set, which sold strongly, even at $250, when it was released in September 2009.[92] However the success of this re-master is more likely to foretell the CD’s long-run destiny as a collector’s item than signal its renaissance as a mass market medium.

# Video-on-demand takes off — thanks to the vending machine

DTT TMT predicts that 2010 should see strong growth for video-on-demand (VOD), although the technology behind this growth — the vending machine — may surprise.[93] Our expectation is that the volume and value of DVDs distributed via vending machine will double in 2010, mostly due to additional capacity.[94] By the end of 2010, an estimated 30,000 DVD vending machines will be deployed in the US alone,[95] each capable of holding up to 700 units[96] and generating up to $50,000 a year.[97]

The common view is that telecommunications networks should eventually be the main distribution platform for VOD. We agree. At some point in the future, the Web should become the most efficient means of distributing long-form content. In fact, in many markets the network is already the best vehicle for disseminating short-form video. But in 2010, the vending machine is likely to be the principal driver for self-service, long-form VOD.

Technology, media, and telecommunications operators have long experimented with network-delivered VOD. Trials have generally proven technological feasibility but have been less convincing commercially. At one point in the mid-1990s, over 50 concurrent trials were under way — but most concluded without precipitating a commercial launch.

Despite significant investments in network-delivered VOD, by the end of 2009 the most commercially successful approach to self-service long-form video distribution was still a hybrid of Web-based self-selection and postal delivery. In the US in 2009, over 2 million DVDs were mailed daily to over 11 million subscribers,[98] an outcome that few would have anticipated at the start of the decade. Indeed, the market leader for the United States, Netflix, was so-named in 1997 under the assumption that delivery of movies would eventually migrate to the Web. Similarly, lovefilm, a European player, was originally branded lovefilm.com under the assumption that most of its distribution would soon pass to the Web.

In 2000, even fewer would have anticipated that the greatest threat at the decade's end to both the Web and the post-hybrid models would be a 19th century technology: the vending machine.

Key drivers for the success of the DVD vending machine include price and ease-of-use. In the US market, DVDs are rented at a price of $1 per night, lower than the minimum subscription for most post-based or store-based rental services. In other markets, rentals are more expensive but still competitive with available alternatives. For customers in economies still in recession or recovering slowly in 2010, the low price is likely to hold its appeal, even if cumulative late fees may eventually exceed the DVD's retail price.

Ease-of-use is a major factor due to widespread familiarity with vending machines, among all age and social groups. In many markets, over 40 percent of the population remain infrequent users of the Internet. Also, accessibility is likely to become an increasingly powerful driver. Vending machines are likely to be deployed in locations with high foot traffic, such as fast food outlets, convenience stores, and subway stations. The more vending machines that are deployed, the more places DVDs can be rented from and returned to. Consumers will also likely be drawn to the immediacy of the delivery (at the push of a few buttons) rather than the need to wait for a few hours, as can be the case with network video-on-demand, or a day or more in the case of postal distribution.

Still, the vending machine model is likely to face some challenges in 2010, the most prominent of which is restricted access to DVDs. Some content owners may delay the sale of their DVDs to vending machine owners until a few weeks after initial release to protect sales revenues.[99] Another challenge is the launch of lower-cost DVD rental plans or comparably priced pay television bundles.

**Bottom line**

Old technologies can age well, and in the case of the vending machine they can still add value over a century after their invention.

Content owners, particularly in markets where DVD sales are in decline, should determine whether low-cost rentals are the cause of revenue declines or simply coincidental. It may be the case that those renting at $1 per night would never otherwise watch the movie. And those renting a movie may purchase the sequel or watch it at the movie theater.

Content owners should also consider how low-cost rental vending machines could drive complementary revenue streams, such as the ability to purchase the DVD outright. There may even be a business case to be made for vending machines specialized in new-release DVDs. New releases could also be rented at a higher price in the first week or two weeks after release.[100] This could be particularly useful in markets whose retail distribution channels have shrunk in recent years.[101]

Content distributors should keep a close watch on the progress of network-delivered video-on-demand, even if this approach is unlikely to see major revenue growth in 2010. At some point the volume of Internet-connected PCs, as well as the ubiquity of sufficiently fast download speeds, should finally permit network-delivered full-length video. But there is a caveat. As more people get Internet-enabled televisions and networks get faster, file sizes are also expected to grow. The current size of a DVD runs to about 9 GB. The size of an HD DVD may reach 25 GB.[102] Content distributors should note that envelopes (for mail delivery) and slots (for vending machines) are already able to handle such significant increments in file sizes — as long as the size of the disc remains constant. Networks may find it harder to be similarly future-proofed.

The content industry should also note the possible motivations for companies wanting to deploy DVD rental machines on their premises. Some retailers may simply want to generate rental income from third party vending machine distributors. Others may consider it simply as a means to generate additional revenues from their consumers. But in some cases the primary motivation may be to increase foot traffic and frequency of customer visits. In this latter case DVDs may be rented out at cost, or even less.

Despite significant investments in network-delivered VOD, at the end of 2009 the most commercially successful approach to self-service long-form video distribution was still a hybrid of Web-based self-selection and postal delivery.

# One step back, two steps forward for 3D TV

Following a bumper year for 3D at the movies, DTT TMT anticipates that expectations will be high for an equivalent 3D-fueled boost to the television sector in 2010.[103]

This year should see several significant firsts for 3D television, including the launch of the first 3D TV channels in Europe[104] and North America and the launch of numerous 3D-capable television sets.[105] But 3D TV is likely to face some significant challenges as well. The potential for 3D to bolster the television industry's revenues is strong. But by year-end subscriber numbers, subscription and equipment revenues as well as available content are likely to remain negligible.

Much of 3D TV's initial challenge will likely be due to customer confusion, with the lack of a single 3D TV standard serving as the central obstacle. Consumers are likely to be presented with an array of products and experiences all bearing 3D branding, but none of them quite the same.

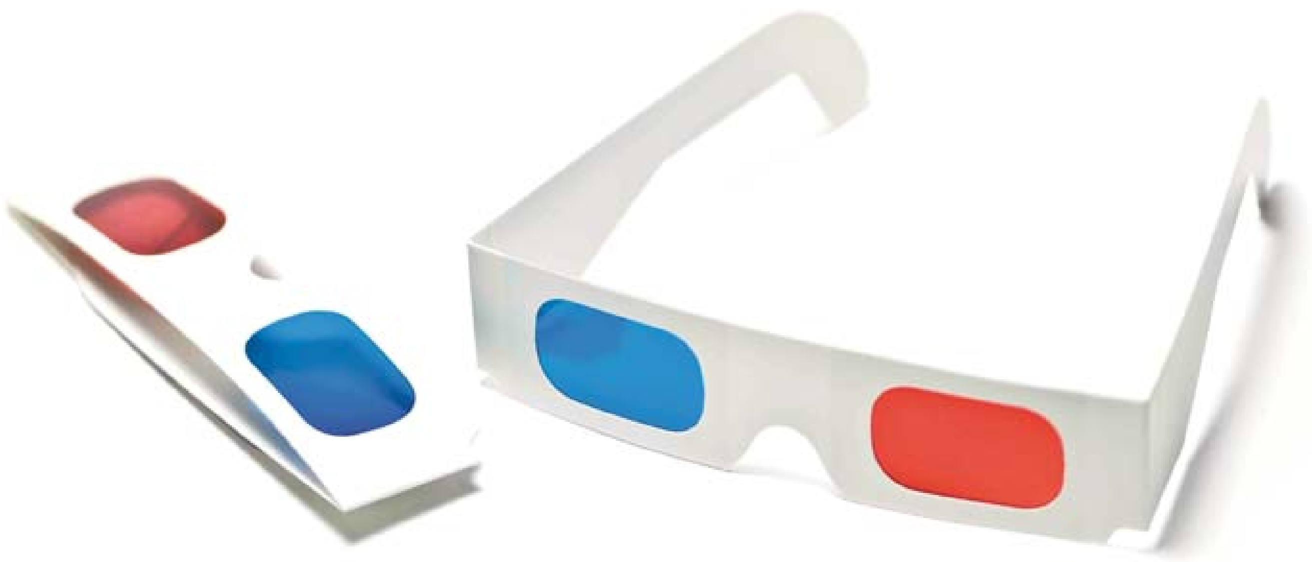
Indeed, in the first half of the year, the most common form of 3D watched on television sets may well be based on technology first used in the 19th century — the anaglyph.[106] This requires viewers to wear red and blue colored glasses, which, when used with anaglyph images, combine an image for the left eye with one for the right to create a 3D effect. While technologically stagnant, it is available to any household with a TV set. The only device upgrade required — a set of anaglyph glasses — is cheap enough to be given away for free.

As of January 2010, tens of millions of households around the world are likely to be the recent, proud owners of a set of anaglyph glasses, courtesy of 3D DVD gift box sets.[107] In early 2010, some broadcasters may decide to seize on the cinema-driven popularity of 3D and the ubiquity of 3D glasses to offer anaglyph 3D content.[108]

At the same time, the spread of anaglyph in the home may well confuse those whose expectations of 3D quality have been set by their experiences at the movie theater. Most cinemas projecting in 3D use polarized images.[109] This technique, based on controlling the amount of light reaching the eye, is far superior to anaglyph, so watching movies using the old technology may prove disappointing. 3D simulation may appear less realistic, and the viewing experience may prove tiring for some.

To compound the confusion, a growing number of 3D television sets, based on two other approaches, are expected to be available in 2010. Each approach offers a different blend of cost and user experience.

The first pairs a television set featuring a screen refresh rate of at least 120 Hz with shuttered glasses that alternate left and right images.[110] The shutter is controlled by a unit connected to the television. The result is a 3D experience with an equivalent refresh rate of 60 Hz or higher. The disadvantage is that the glasses are likely to be expensive, initially roughly $50 per viewer.[111]



The other technology combines a television with low-cost, polarized glasses, the same type currently used in movie theaters. However the cost of such television sets, which feature a special polarized screen, will likely remain at over $3,000 for most of 2010.[112]

The coexistence of multiple standards could frustrate customers. Some subscribers to 3D television services may find that their 3D-ready television is incompatible with the service they have signed up for. But by year-end, the hope is that resolution on 3D standards will be imminent.

Another possible challenge for 3D TV is a lack of 3D content. Available 3D content, mostly films, may prove too expensive to license for anyone but pay-television channels. Broadcasters and independent producers — many currently absorbing the additional costs of high definition (HD) production — might be wary of producing in a format with even greater costs. The majority of 3D content created specifically for television in 2010 may be limited to major sports events and high-profile nature documentaries.

The costs of making television in 3D should become more affordable over time. There are likely to be several significant technological breakthroughs in 2010, such as the launch of integrated 3D cameras.[113] But overall, the cost of creating in 3D is likely to remain markedly more expensive than 2D.[114]

By the end of 2010, 3D television should have made steady progress. The quantity of content broadcast, and the addressable market for 3D TV, are likely to remain tiny by year-end. But the potential should still be significant as the foundations for 3D productions begin to fall into place, and consumer interest in 3D should remain high due to a constant flow of 3D movies.

**Bottom line**

The television sector should drive additional revenues from 3D in the mid-term. As with many innovations, such as HD, mass-market demand is not going to emerge overnight.[115] But the mid- to long-term benefits of making 3D television work, in the forms of remaining competitive with other forms of home entertainment, generating incremental subscription revenues, offering a compelling advertising medium, driving equipment sales, and even contributing to the fight against digital piracy, are on the whole significant enough to make 3D more likely than not.

A minimal role for 3D at year-end 2010 — particularly following another strong year for 3D at the cinema — should not therefore be regarded a failure.[116]

The television sector needs to set expectations accordingly, both internally and with the public. A key objective should be to agree on and promote a single definition of 3D television.[117]

The industry should steadily develop all aspects of its 3D capability, from learning how to storyboard in 3D, to developing affordable post-production techniques, to evolving cost-efficient transmission approaches. Those who commission TV programs should consider 3D for all forms of content and not confine commissioning to thrillers and sports. Specialist channels such as shopping channels should evaluate 3D's potential impact on sales volumes.

The sector should also consider a variety of business models. 3D broadcast is likely to have at least 30 percent higher bandwidth demand than for 2D — perhaps up to 20 megabits per second.[118] This means that broadcast platforms with limited bandwidth, such as digital terrestrial television, may need to consider a pay TV model, unless the advertising[119] premium for 3D is equivalent or superior to the cost of the additional bandwidth required.[120]

Television should regard the growing demand for 3D at the cinema as a marketing tool for 3D in the home. The more 3D is watched at the cinema, the more viewers will want to have a similar experience in their homes. The more 3D content that is created, the greater the flow of 3D photography and production skills in the industry, and the greater the economies of scale for 3D cameras and production equipment.

The 3D TV industry could receive an indirect boost from the video games sector. A household may justify the purchase of a 3D-ready television on the basis of the ability to play games in 3D as well as watch broadcast television in 3D.[121] Hundreds of video game titles can already be played in 3D.

# Notes

The end notes consist mostly of the principal secondary sources used (published articles, press releases, vendor websites and videos). We have provided a compact URL for all sources that are available via the Web. Some of the sources referenced may require a subscription to view. Additional sources of information referenced in the end notes include discussions with vendors, industry analysts, financial analysts, and other subject matter experts undertaken specifically as input to these reports. The end notes also include further background on some of the points made in the main body of the text.

1 In the US, children aged 2-11 watch 32 hours of television per week. Source: TV Viewing Among Kids at an Eight-Year High, *Nielsen Wire*, 26 October 2009: http://blog.nielsen.com/nielsenwire/media_entertainment/tv-viewing-among-kids-at-an-eight-year-high. In some markets it is high as 35 hours. Source: *Video Consumer Mapping Study*, Council for Research Excellence, April 2009: http://www.researchexcellence.com/vcmstudy.php

2 About 15 percent of US households subscribe to a DVD rental service. Netflix is the market leader with 11.1 million customers as of Sept 2009. Source: Movie fans might have to wait to rent new DVD releases, *Los Angeles Times*, 23 October 2009: http://www.latimes.com/business/la-fi-ct-dvd23-2009oct23,0,1148449.story

3 In the UK, as of May 2009, 5 percent of all viewing was time-shifted via a DVR. At that time, DVR penetration was 20 percent. Data sourced from *BARB*: http://www.acbuk.net/presentations.php).

4 In the UK, average online viewing was estimated at 61 minutes per week. This assumes an average of 3 minutes per video, which is watched in its entirety. One study of US viewing trends found an average of 14 minutes of television via the Internet per week. Source: New Devices Impactful, But TV Still Rules, *Media Week*, 29 March 2009: http://www.mediaweek.com/mw/content_display/esearch/e3i21450699a02373c2a0af0f782cd9efbb

5 This assumes an average 900 million monthly views of Hulu in 2010 with an average 20 minutes watched per stream. ComScore estimated Hulu monthly views of 488 million in August 2009, 583 million in September 2009, and 856 million views in October 2009. In October 2009, the average stream was watched for 10 minutes. Our calculation assumes 5.5 hours of broadcast television watched per day. Sources: ComScore: Google Sites Surpass 10B Video Views in August, *The Wall Street Journal*, 28 September 2009: http://online.wsj.com/article/BT-CO-20090928-710268.html; Hulu Nation is Growing – Fast, *Business Insider*, 24 November 2009: http://www.businessinsider.com/hulu-nation-is-growing-and-fast-2009-11

6 In the UK, average weekly radio consumption was 20.1 hours; reach was 89.5 percent of the population. Radio consumption is a blend of speech and music of which "specialist news and chat radio" represents 6 percent of all listening for commercial radio stations; speech (Radio 4) represents 12.4 percent of all listening for BBC stations. By comparison, UK citizens listened to pre-recorded music for 5.4 hours per week. In the US, 90 percent of consumers aged over 12 listen to the radio, equivalent to 235 million individuals. Average listening is 21 hours per week. Sources: Communications Report, Ofcom, August 2009: http://www.ofcom.org.uk/research/cm/cmr09/CMRMain_3.pdf; Deloitte Media Democracy survey, UK results, 2008; Radio reaches more than 90 percent of all consumers over the age of 12 each week, *Arbitron*, 23 September 2009: http://arbitron.mediaroom.com/index.php?s=43&item=629; More than 235 million listen to radio every week reports Arbitron, *Arbitron*, 15 September 2009: http://arbitron.mediaroom.com/index.php?s=43&item=622; and American Radio listening trends FAQs, *Arbitron*: http://www.arbitron.com/home/arlt_faqs.asp

7 In the US, radio reaches 77 percent of adults on a daily basis; 37 percent listen to CDs and tapes; 12 percent listen to portable audio devices. Of the last group, consumption of radio was 97 minutes per day compared to 67 minutes for portable music devices. Source: Within ad supported media, broadcast radio is second only to live television, study finds, *Nielsen Wire*, 3 November 2009: http://blog.nielsen.com/nielsenwire/media_entertainment/within-ad-supported-media-broadcast-radio-reach-is-second-only-to-live-television-study-finds/

8 Source: *Video Consumer Mapping Study*, Council for Research Excellence, April 2009: http://www.researchexcellence.com/vcmstudy.php.

9 In the US, for the year to H2 2009, growth in time-shifted television in the 30 percent of US homes with a DVR rose by 1 hour 11 minutes per month or 19.5 percent; growth in video watched over the Internet among the 134 million individuals who use the Internet to watch video rose by 59 minutes or 45 percent; monthly consumption of linear television averaged across 290 million US viewers rose by 2 hours 2 minutes, an increase of 1.5 percent. Source: Television, Internet and Mobile Usage in the US, *Nielsen*, 2nd Quarter 2009: http://blog.nielsen.com/nielsenwire/wp-content/uploads/2009/09/3ScreenQ209_USRpt_final.pdf

10 Samsung in $2.2bn China LCD TV venture, *FT.com*, 16 October 2009: http://www.ft.com/cms/s/0/42527a3e-ba6d-11de-9dd7-00144feab49a.html

11 Television industry revenue (advertising and subscription) has increased by an average of 18 percent per year between 2003 and 2008. As of 2008, advertising revenue in this region was about €10 billion, up from circa €4 billion n 2003. Speech at IBC, September 2009.

12 In the UK, 2008's most watched broadcast program, Wallace and Gromit's Christmas Special, with 14.3 million viewers, was also the most watched program, at 8 million requests, of any broadcaster's Internet television service. BBC's 9 out of 10 triumph in Christmas ratings battle, *The Guardian*, 27 December 2008: http://www.guardian.co.uk/media/2008/dec/27/bbc-television-ratings; Wallace & Gromit's A Matter Of Loaf And Death biggest iPlayer festive hit, *Mirror*, 9 January 2009: http://www.mirror.co.uk/most-popular/2009/01/09/wallace-gromit-s-a-matter-of-loaf-and-death-biggest-iplayer-festive-hit-115875-21027473/; Virgin Media iPlayer top 10, The Guardian, 21 July 2008: http://www.guardian.co.uk/media/2008/jul/21/virginmedia.bbc. In some markets, awareness of broadcasters' on-demand sites has become better known than on-demand pure plays. For example In the UK, online television's association with linear is now so strong that awareness of broadcasters' on-demand websites, at 83 percent, now exceeds that for YouTube, at 76 percent or iTunes at 64 percent or illegal download sites , at 34 percent. Source: Deloitte/YouGov survey of UK population, July 2009.

13 At the end of 2009, one major exit from the online video space was Joost, which had been regarded as potential challenger to broadcast television. For commentary on Joost's exit, see: Joost is now officially dead, *techcrunch*, 24 November 2009: http://www.techcrunch.com/2009/11/24/joost-acquired-adconion/

14 News Corp. Sees Hulu charging fees for access, *MSNBC*, 22 October 2009: http://www.msnbc.msn.com/id/33438370/ns/technology_and_science-tech_and_gadgets/; ITV to charge viewers for BGT clips, *Broadcast*, 10 July 2009: http://www.broadcastnow.co.uk/news/broadcasters/itv-to-charge-viewers-for-bgt-clips/5003462.article; Free is flawed for TV online, *Broadcast*, 20 August 2009: http://www.broadcastnow.co.uk/comment/free-is-flawed-for-tv-online/5004650.article; YouTube may stream movie rentals, *Reuters*, 3 September 2009: http://www.reuters.com/article/technologyNews/idUSTRE5816W120090903

15 Self-reported data per se, see: http://www.creative-wisdom.com/teaching/WBI/memory.shtml

16 For example, see: http://mashable.com/2009/10/09/youtube-billion-views/

17 A user of nonlinear video may be defined as someone who has watched 15 minutes or more of online video at any time in the previous three months. This is the threshold used by Netflix in its quantification of users of its streaming service. In that time the typical television user consumes 260 hours of content: http://files.shareholder.com/downloads/NFLX/743398168x0x326109/43b9da9f-9555-440b-9442-704116af9344/NFLX-Transcript-2009-10-22T22_00.pdf

18 With online, a piece of content need only be watched for a fraction of a second to be counted. By contrast, reporting on television and radio use, while not without its flaws, is likely to remain more robust and transparent than its nonlinear equivalent. Measurement of broadcast television includes an agreed-upon understanding of how many minutes a program has to be watched for it to be considered as viewed. See: 'Most Watched' Video On The Web Doesn't Mean What You Think, *The Business Insider*, 29 October 2009: http://www.businessinsider.com/most-watched-video-on-the-web-doesnt-mean-what-you-think-2009-10; Time to adjust the set, FT.com, 28 October 2009: http://www.ft.com/cms/s/0/6712e47e-c3fc-11de-8de6-00144feab49a.html

19 Parallel universe may spell the end for broadcast TV, *The Guardian*, 3 September 2000: http://www.guardian.co.uk/business/2000/sep/03/internet.bigbrother; Could this be the beginning of the end for broadcast TV?, *Access my Library*, 10 November 2003: http://www.accessmylibrary.com/coms2/summary_0286-8988177_ITM; FutureMedia heralds end of broadcast TV, *C21 Media.net*, 9 December 2005: http://www.c21media.net/news/detail.asp?area=89&article=27969; The age of permanent net revolution, *The Guardian*, 5 March 2006: http://www.guardian.co.uk/business/2006/mar/05/newmedia.broadcasting, BBC introduces flexible TV with online trial, *The Independent*, 3 May 2004: http://www.independent.co.uk/news/science/bbc-introduces-flexible-tv-with-online-trial-562053.html; NBC Uni future hinges on new-media content, *Hollywood Reporter*, 14 September 2005: http://www.hollywoodreporter.com/hr/search/article_display.jsp?vnu_content_id=1001097717 for a longer term view: "Future of TV: The video-on-demand guru", *BBC News*, 27 November 2006: http://news.bbc.co.uk/2/hi/entertainment/6144350.stm

20 http://en.wikipedia.org/wiki/Banner_ad

21 Projection based on growth in online and some measure of price deflation in traditional media advertising rates.

22 IDC: Worldwide online ad spending drops slightly in Q3, *PC World*, 11 November 2009: http://www.pcworld.com/businesscenter/article/181919/idc_worldwide_online_ad_spending_drops_slightly_in_q3.html

23 US ad spending fell 15.4 percent in the first half, Nielsen reports, *Nielsen*, 1 September 2009: http://blog.nielsen.com/nielsenwire/wp-content/uploads/2009/09/2009-First-Half-Ad-Spending-PR1.pdf

24 IDC: Global online Ad spend has bottomed out – but real growth won't show until Q1, *paidContent*, 10 November 2009: http://paidcontent.org/article/419-idc-global-online-ad-spend-has-bottomed-out-but-real-growth-wont-show-u/

25 Bernstein research Q3 ad report: cable posts growth, *Broadcasting & Cable*, 11 November 2009: http://www.broadcastingcable.com/article/388553-Bernstein_Research_Q3_Ad_Report_Cable_Posts_Growth.php

26 Interviews with industry executives undertaken specifically for this report: per discussions with advertising and advertiser executives, while the measurability of online versus non-online was an important factor, it was not the most important factor. Advertisers believed that the key reason for using online was that it delivered the best value for money. Even if non-online was equally able to provide metrics, but did not change its prices, online would continue to grow share.

27 Interviews with industry executives undertaken specifically for this report.

28 http://blog.nielsen.com/nielsenwire/wp-content/uploads/2009/09/2009-First-Half-Ad-Spending-PR1.pdf

29 2010 Outlook survey shows marketing budgets to grow, *BtoBonline*, 16 November 2009: http://www.btobonline.com/apps/pbcs.dll/article?AID=/20091116/FREE/311169985/1444/FREE

30 Disruptive technology, *Wikipedia*: http://en.wikipedia.org/wiki/Disruptive_technology

31 Music sales fell in 2008, but climbed on the web, *The New York Times*, 31 December 2008: http://www.nytimes.com/2009/01/01/arts/music/01indu.html

32 Targeting efficiency could kill the media business, *Cross Targeting*, 24 October 2009: http://www.crosstargeting.com/targeting-efficiency-could-kill-the-media-business/

33 Although the industry term is eBook, we include more-than-casual reading of other content normally found in print, including newspapers and magazines.

34 Priced between $400 and $800, they are likely to weigh less than 500 grams and measure about 20 cm by 12 cm by 2.5 cm. They are expected to include cellular mobile and WiFi access, full-color touch screens, and well-populated "app stores." They occupy the consumer device niche between smartphones and netbooks.

35 One challenge with eReader sales estimates is that much of the data is not released. The following citation shows the possible error magnitude: small changes in assumptions can produce a range where the high estimate is double the low. Source: eReader sales estimates – all eReaders, *iReader Review*, 18 August 2009: http://ireaderreview.com/2009/08/18/ereader-sales-estimates/

36 The quarterly numbers are US only, only from a limited number of publishers, and do not reflect industry discounts. The retail numbers may be 100 percent higher. Industry Statistics, *Openbook.org*: http://www.openebook.org/doc_library/industrystats.htm.

37 "E-book" a la vista, *La Vanguardia*, 24 October 2009: http://www.lavanguardia.es/free/edicionimpresa/res/20091024/53809993640.html?urlback=http://www.lavanguardia.es/premium/edicionimpresa/20091024/53809993640.html

38 Forrester's eReader holiday outlook 2009, *Forrester*, 7 October 2009: http://www.forrester.com/Research/Document/Excerpt/0,7211,53825,00.html; and Kindle 2 costs $185, 3.5 million eReader sales in 2009 – iSuppli, *iReader Review*, 21 April 2009: http://ireaderreview.com/2009/04/21/kindle-2-costs-185-35-million-ereader-sales-in-2009-isuppli/

39 Sony LIBRIe – The first ever E-Ink e-Book Reader, *Mobile Magazine*, 25 March 2004: http://www.mobilemag.com/2004/03/25/sony-librie-the-first-ever-e-ink-e-book-reader/

40 Economy + Internet Trends, *Morgan Stanley*, 20 October 2009: http://www.morganstanley.com/institutional/techresearch/pdfs/MS_Economy_Internet_Trends_102009_FINAL.pdf; How Americans spend their money – chart, *New York Times*, 10 February: http://graphics8.nytimes.com/images/2008/02/10/opinion/10chart.large.gif

41 http://www.theglobeandmail.com/news/arts/not-exactly-kindling-his-passion/article1372600/ and http://web2.sys-con.com/node/605099 and http://www.wired.com/gadgetlab/2009/06/blackandwhite_ebooks/

42 Kindles yet to woo University users, *The Daily Princetonian*, 28 September 2009: http://www.dailyprincetonian.com/2009/09/28/23918/

43 An economic analysis of textbook pricing and textbook markets, *ACSFA College textbook cost study plan proposal*, September 2006: http://www.ed.gov/about/bdscomm/list/acsfa/kochreport.pdf; and Are used book sales good or bad for publishing?, *iReader Review*, 3 August 2009: http://ireaderreview.com/2009/08/03/kindle-and-used-books/

44 An Apology from Amazon, *Amazon.com*, 23 July 2009: http://www.amazon.com/tag/kindle/forum/?_encoding=UTF8&cdForum=Fx1D7SY3BVSESG&cdMsgNo=1&cdPage=1&cdSort=oldest&cdThread=Tx1FXQPSF67X1IU&displayType=tagsDetail&cdMsgID=Mx2G7WLMRCU49NO#Mx2G7WLMRCU49NO&tag=kwab-20

45 Writing on your iPhone: One novelist's Story, *The Writer's Technology Companion*, 6 January 2009: http://www.writerstechnology.com/2009/01/writing-on-your-iphone-one-novelists-story

46 Flurry Smartphone industry pulse, October 2009, *Flurry*, 1 November 2009: http://blog.flurry.com/bid/27796/Flurry-Smartphone-Industry-Pulse-October-2009

47 Can the Apple tablet kill the Kindle?, *PCMag.com*, 26 October 2009: http://www.pcmag.com/article2/0,2817,2354658,00.asp

48 The Kindle killed the book star, *Wellington Financial*, 15 May 2009: http://www.wellingtonfund.com/blog/2009/05/15/the-kindle-killed-the-book-star/
49 Do I hear $8? Amazon stares down Wal-Mart in price war over best sellers, *Barron's*, 16 October 2009: http://blogs.barrons.com/techtraderdaily/2009/10/16/do-i-hear-8-amazon-stares-down-wal-mart-in-price-war-over-best-sellers/
50 How can publishers limit e-book piracy?, *Channel 4 News*, 18 October 2009: http://www.channel4.com/news/articles/arts_entertainment/books/how+can+publishers+limit+ebook+piracy/3391502
51 Don't buy an e-book reader: The sorry state of digital slates, *CNET UK*, 9 November 2009: http://crave.cnet.co.uk/gadgets/0,39029552,49304199,00.htm
52 Chris Anderson: Newspapers need to find the 'pet for their penguin', *The Guardian*, 30 June 2009 http://www.guardian.co.uk/media/pda/2009/jun/30/chrisanderson-wired-longtail-freemium-newspapers-businessmodels; and The Newspaper Genie Can't Be Stuffed Back in the Bottle, *Mark Evans Tech*, 11 May 2009: http://www.markevanstech.com/2009/05/11/the-newspaper-genie-cant-be-stuffed-back-in-the-bottle/
53 The end of the age of free, *The Guardian*, 10 May 2009: http://www.guardian.co.uk/media/2009/may/10/music-news-murdoch-free-google; and Interview: Rob Grimshaw, Publisher, FT.com: Newspapers Must Add Paid Content, *Paid Content UK*, 10 May 2009: http://paidcontent.co.uk/article/419-interview-rob-grimshaw-publisher-ft.com-newspapers-must-add-paid-conten/
54 The case for charging to read WSJ.Com, *Blogspot*, 22 March 2009: http://newsosaur.blogspot.com/2009/03/case-for-charging-to-read-wsjcom.html
55 Unless you subscribe to BOTH print and online: Wall Street Journal iPhone and BlackBerry App Free Lunch Is Over, *Gizmodo*, 15 September 2009: http://gizmodo.com/5359948/wall-street-journal-iphone-and-blackberry-app-free-lunch-is-over
56 Interview: Rob Grimshaw, Publisher, FT.com: Newspapers Must Add Paid Content, *Paid Content UK*, 10 May 2009: http://paidcontent.co.uk/article/419-interview-rob-grimshaw-publisher-ft.com-newspapers-must-add-paid-conten/
57 Pay walls never may come at some papers, *Blogspot*, 3 November 2009: http://newsosaur.blogspot.com/2009/11/pay-walls-never-may-come-at-some-papers.html
58 Ibid.
59 Research: Readers Favour News Micropayments – But They'll Only Pay Pennies, *Paid Content UK*, 12 November 2009: http://paidcontent.co.uk/article/419-research-readers-favour-news-micropayments-but-theyll-only-pay-pennies/
60 Google Developing Micropayments And Subscription System To Save Newspapers, *The Business Insider*, 9 September 2009: http://www.businessinsider.com/henry-blodget-google-launching-micropayments-and-subscription-system-to-save-newspapers-2009-9
61 CHART OF THE DAY: The Journal Has The Richest Readership Among Print Pubs (NWS, NYT), *The Business Insider*, 19 November 2009: http://www.businessinsider.com/chart-of-the-day-wealthy-print-readers-2009-11
62 News Corp COO ponders overhaul of WSJ's paywall system, others still don't think it will work, *Editorsweblog.org*, 13 November 2009: http://www.editorsweblog.org/multimedia/2009/11/news_corp_coo_ponders_overhaul_of_wsjs_p.php
63 In the US, according to one survey, 74 percent of 25-34 year old citizens watch television and use the Internet concurrently. Source: Multitasking at Home: Simultaneous Use of Media Grows, *Nielsen Wire*, 14 September 2009: http://blog.nielsen.com/nielsenwire/online_mobile/multitasking-at-home-simultaneous-use-of-media-grows. As of the start of 2010, about 20 countries are likely to have household broadband penetration of over 50 percent. Based on data for year-end 2008, when 17 countries had passed 50 percent penetration and four countries' penetration was between 40 percent and 50 percent. Source: *OECD Broadband Portal*, 20 May 2009: http://www.oecd.org/document/54/0,3343,en_2649_34225_38690102_1_1_1_1,00.html
64 According to one survey, 54 percent of UK television viewers access the Internet while watching television. Source: Deloitte/YouGov survey undertaken for the 2009 Media Guardian International Television Festival. See: www.deloitte.co.uk/mgeitf
65 TV shapes up as Web Battleground, *The Wall Street Journal*, 23 September 2009: http://online.wsj.com/article/SB125366988207032789.html
66 Is TV the New PC?, *Gigaom*, 8 May 2007: http://gigaom.com/2007/05/08/is-tv-the-new-pc/
67 Television's killer app, *Variety*, 14 August 2009: http://www.variety.com/article/VR1118007284.html?categoryid=1019&cs=1
68 IP STBs and connected TVs, *Opera Software*: http://www.opera.com/business/solutions/devices/iptv/
69 Is TV the New PC?, *Gigaom*, 8 May 2007: http://gigaom.com/2007/05/08/is-tv-the-new-pc/
70 ZenithOptimedia: global online advertising to grow 10 percent in 2009 against total ad spend falls, *Digital Strategy Consulting*, 7 June 2009: http://www.digitalstrategyconsulting.com/intelligence/2009/07/zenithoptimedia_global_online.php
71 Television's Got Talent, Deloitte, August 19, 2009 According to one survey, 20 percent of UK television viewers have purchased a product or service online, having seen it advertised on television. Source: Deloitte/YouGov survey undertaken for the 2009 Media Guardian International Television Festival. See: www.deloitte.co.uk/mgeitf
72 TV & Online: Better Together, *Thinkbox*. See: http://www.thinkbox.tv/server/show/nav.1019
73 Television websites thrive during prime time, *Nielsen-Netratings*, 11 April 2007: http://www.nielsen-online.com/pr/pr_070411.pdf; for examples see: http://www.bravotv.com/americas-next-top-model/rate-the-looks; http://www.bbc.co.uk/strictlycomedancing/play/
74 Rhapsody Fails to See iPhone App-induced Bump, *Gigaom*, 29 October 2009: http://gigaom.com/2009/10/29/rhapsody-fails-to-see-iphone-app-induced-bump/; A year later, Nokia's music service has few users, *Macworld*, 16 October 2009: http://www.macworld.com/article/143356/2009/10/nokia_comeswithmusic.html
75 SpiralFrog's turmoil, in missives, *CNET News*, 11 August 2009: http://news.cnet.com/8301-1023_3-10306649-93.html?tag=mncol;txt
76 Recorded Music and Music Publishing, *Enders Analysis*, 4 June 2009. [no URL]
77 Digital music startup Deezer debuts desktop client, premium offering, *TechCrunch Europe*, 5 November 2009: http://eu.techcrunch.com/2009/11/05/digital-music-startup-deezer-debuts-desktop-client-premium-offering/
78 HTC Hero + Spotify now available at 3 UK website and stores, *TechCrunch*, 6 November 2009: http://eu.techcrunch.com/2009/11/06/htc-hero-spotify-now-available-at-3-uk-website-and-stores/; Free digital music service Spotify bids to live up to the hype, *Times Online*, 13 September 2009: http://business.timesonline.co.uk/tol/business/industry_sectors/media/article6832141.ece
79 Spotify is the new Napster – But which one? *Gigaom*, 17 september 2009: http://gigaom.com/2009/09/17/spotify-is-the-new-napster-but-which-one/
80 Sony/BMG and Universal invest in MOG, *Wired*, 29 April 2008: http://www.wired.com/listening_post/2008/04/sonybmg-and-uni/; Free digital music service Spotify bids to live up to the hype, *Times Online*, 13 September 2009: http://business.timesonline.co.uk/tol/business/industry_sectors/media/article6832141.ece
81 EMI drops suit, signs licensing deal with Grooveshark, *ethioPlanet*, 16 October 2009: http://www.ethioplanet.com/news/2009/10/16/emi-drops-suit-signs-licensing-deal-with-grooveshark/
82 For a discussion on this topic, see: Spotify rocks – but without a compulsory, public digital music license they are doomed, *Media Futurist*, 27 July 2009: http://www.mediafuturist.com/2009/07/i-love-spotify-but.html
83 Digital music services: the next 'added value' offering?, *Marketing Week*, 15 October 2009: http://www.marketingweek.co.uk/digital-music-services-the-next-%E2%80%98added-value%E2%80%99-offering?/3005600.article; MOG's $5 monthly music service highlights Spotify obstacle, *Wired*, 14 October 2009: http://www.wired.com/epicenter/2009/10/mogs-5-per-month-music-service-highlights-spotify-obstacles/

84 Skype founders assembling killer team for new online music startup, *IFV news*, 7 November 2009: http://www.ifvnews.com/content/skype-founders-assembling-killer-team-new-

85 Secret Rihanna gig to stream live on mobile phones, *Times Online*, 6 November 2009: http://technology.timesonline.co.uk/tol/news/tech_and_web/article6906775.ece

86 MOG adds lyrics, interviews, blog tools, *Wired*, 12 June 2008: http://www.wired.com/listening_post/2008/06/mog-adds-lyrics/

87 Spotify download service threatens iTunes, *Times Online*, 11 October 2009: http://technology.timesonline.co.uk/tol/news/tech_and_web/personal_tech/article6868135.ece

88 The CD has barely evolved since first launched. Re-invention that has been attempted, such as Digital Audio Tape (DAT) and Super Audio CD (SACD), has managed modest success at best. By contrast, today's music player, Internet, mobile communications, and video games have all evolved immeasurably. Indeed, in 1982, when the first CDs went on sale, Sony's Walkman was just three years old, the Internet Protocol (IP) had just been agreed upon, mobile telephony had yet to launch in the US, and a leading-edge game console boasted 24K of digital memory and a palette of 8 colors.

89 Economic Insight, *PRS for Music*, 4 November 2009: http://www.prsformusic.com/creators/news/research/Documents/Economic%20Insight%2016%20ARPU.pdf

90 Michael Masnick The Trent Reznor case study, *YouTube*, February 2009: http://www.youtube.com/watch?v=Njuo1puB1lg

91 Measured by aggregate hours listened. In 2008, consumption of radio in the UK averaged 20.1 hours per person and reach was 89.5 percent on a weekly basis. Radio consumption is a blend of speech and music: "specialist news and chat radio" represents 6 percent of all listening for commercial radio stations; speech (Radio 4) represents 12.4 percent of all listening for BBC stations. By comparison, UK citizens listened to pre-recorded music for 5.4 hours per week. Sources: http://www.ofcom.org.uk/research/cm/cmr09/CMRMain_3.pdf and Deloitte Media Democracy survey, UK results, 2008. In the US, radio reaches 77 percent of adults on a daily basis; 37 percent listen to CDs and tapes; 12 percent listen to portable audio devices. Of the last group, consumption of radio was 97 minutes per day compared to 67 minutes for portable music devices. Source: http://blog.nielsen.com/nielsenwire/media_entertainment/within-ad-supported-media-broadcast-radio-reach-is-second-only-to-live-television-study-finds/

92 Remastered Beatles box sets sell out on Amazon, *Los Angeles Times*, 9 September 2009: http://articles.latimes.com/2009/sep/09/entertainment/et-beatles-sales9

93 Netflix Q2 call: More Streaming, More Redbox, *NewTeeVee*, 23 July 2009: http://newteevee.com/2009/07/23/netflix-q2-call-more-streaming-more-redbox/

94 For the US market, vending machine's share of the overall DVD rental market is expected to reach 30 percent, up from 19 percent in October 2009. Netflix's share was estimated at 36 percent in November October 2009. Source: Movie machines buck trend in America, *Times Online*, 29 October 2009: http://business.timesonline.co.uk/tol/business/markets/united_states/article6894637.ece

95 Chain could have 10,000 kiosks by 2010, *Video Business*, 4 August 2008: www.videobusiness.com/article/CA6584286.html

96 Movie machines buck trend in America, Times Online, 29 October 2009: http://business.timesonline.co.uk/tol/business/markets/united_states/article6894637.ece

97 The DVD vending machine market leader, Redbox, reported a 90 percent increase in revenue to Q3 2009. Source: Redbox Q3 Revenue Up 90 percent Over Last Year, *NewTeeVee*, 6 November 2009: http://newteevee.com/2009/11/06/redbox-q3-revenue-up-90-over-last-year/

98 Netflix notches 2 billionth delivery with a Blu-ray disc, *Engadget*, 2 April 2009: http://www.engadget.com/2009/04/02/netflix-notches-2-billionth-delivery-with-a-blu-ray-disc/

99 Three for Three: Redbox Sues Warner, *NewTeeVee*, 19 August 2009: http://newteevee.com/2009/08/19/three-for-three-redbox-sues-warner/; and Redbox Riles Up the Movie Industry, Files Suit Against Fox, *NewTeeVee*, 12 August 2009 : http://newteevee.com/2009/08/12/redbox-riles-up-the-movie-industry-files-suit-against-fox/

100 Redbox tinkers with higher prices, tries $2 first-night rentals in PA, *Yahoo Tech*, 3 November 2009: http://tech.yahoo.com/blogs/patterson/59145

101 For example, in the US market, Tower Records' bankruptcy in 2006 led to the closure of 89 major stores; in the UK market, the bankruptcies of Zavvi and Woolworths caused the closure of 125 and 815 DVD outlets respectively: Tower Records to be liquidated, *Hollywood Reporter*, 7 October 2006: http://www.hollywoodreporter.com/hr/search/article_display.jsp?vnu_content_id=1003221956; Job Losses As Zavvi Stores Close, *Sky News*, 8 January 2009: http://news.sky.com/skynews/Home/Business/Zavvi-To-Close-22-Stores-With-Loss-Of-178-Jobs-Administrator-For-CD-And-DVD-Retailer-Says/Article/200901215199464?lpos=Business_News_Your_Way_; Blu-ray Lights Up UK DVD Sales, *Billboard.biz*, 2 January 2009: http://www.billboard.biz/bbbiz/content_display/industry/e3i7a4b4ca5771c6f2dad18916107751eb3

102 If HD is upgraded to 2,000 lines, this would mean four times the file size of the current best resolution HD. And if the content is in 3D, this would make the file size at least 30% larger.

103 For example see: 3D TV coming soon to a living room near you, *CTV News*, 9 October 2009, http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20091009/ENT_3D_TV_091009/20091009?hub=SciTech; and Coming soon to the small screen: TV in 3D, *Reuters*, 29 September 2009, http://www.reuters.com/article/televisionNews/idUSTRE58S40820090929

104 BSkyB to launch Europe's first 3D TV channel next year, guardian.co.uk, 30 July 2009: http://www.guardian.co.uk/media/2009/jul/30/bskyb-sky-3d-tv; and The next dimension, *Media Week*, 8 September 2009: http://www.mediaweek.co.uk/news/936682/next-dimension/

105 Sony: 3D TV 'in every home' next year, *MCV UK*, 2 September 2009: http://www.mcvuk.com/news/35654/Sony-3D-TV-in-every-home-next-year

106 To see examples, see: http://www.3d-image.net/;and http://video.google.co.uk/videosearch?hl=en&q=anaglyph+3d&um=1&ie=UTF-8&ei=yYf9SpS4EJWi4QaGv6n8Cw&sa=X&oi=video_result_group&ct=title&resnum=8&ved=0CCYQqwQwBw#

107 For example, see: http://www.amazon.co.uk/s/ref=nb_ss_3_3?url=search-alias%3Daps&field-keywords=3d+dvds&sprefix=3d+&sprefix=3d+&sprefix=3d+&sprefix=3d+

108 3D vs 3D: Ooze gonna save us?, *Broadcast*, 9 September 2009: http://www.broadcastnow.co.uk/technology/3d-vs-3d-ooze-gonna-save-us/5005402.article

109 For a discussion on the potential confusion from broadcast anaglyph 3D, see: Monsters vs. Aliens to become the first 3D trailer in Superbowl history?, *Slashfilm.com*, 3 January 2009, http://www.slashfilm.com/2009/01/03/monsters-vs-aliens-to-become-the-first-3d-trailer-in-superbowl-history/

110 For example, see: Sony Bravia 3DTV – First Look review, *Pocket Lint*, 7 September 2009, http://www.pocket-lint.com/review/4279/sony-bravia-3dtv-television-review

111 Panasonic 50in 3D TV unveiled, *Trusted Reviews*, 7 October 2009; http://www.trustedreviews.com/tvs/news/2009/10/07/Panasonic-50in-3D-TV-Unveiled/p1

112 Interviews with industry executives undertaken specifically for this report: and TV aims for the third dimension, *The Guardian*, 22 January 2009: http://www.guardian.co.uk/technology/2009/jan/22/3d-television

113 Sony develops high frame rate single lens 3D camera technology, Sony press release, 1 October 2009; http://www.sony.net/SonyInfo/News/Press/200910/09-117E/index.html

114 Additional costs relative to standard definition are likely to be 20 percent greater, if "done properly." Source: Dan Mulligan on stereo 3D, *Broadcast*, 2 July 2009: http://www.broadcastnow.co.uk/technology/dan-mulligan-on-stereo-3d/5003177.article; also see: The next dimension, *Media Week*, 8 September 2009: http://www.mediaweek.co.uk/news/936682/next-dimension/

115 Crowded theatres build momentum for 3-D at home, *Associated Press*, 26 October 2009: http://www.google.com/hostednews/ap/article/ALeqM5imI5SjGZm3z2E0wByQd7jsus7U4wD9BIPU2G0

116 For a guide on 3D box office revenues, see: http://boxofficemojo.com/genres/chart/?id=3d.htm

117 IBC 2009: Assessing the 3D battleground, *Broadcast*, 15 September 2009: http://www.broadcastnow.co.uk/technology/ibc-2009-assessing-the-3d-battleground/5005723.article

118 3-D HDTV is starting to get more in focus, *msnbc.com*, 24 September 2009: http://www.msnbc.msn.com/id/32942253/ns/technology_and_science-tech_and_gadgets/page/2/

119 For examples of 3D ads commissioned for the theater, see: http://www.youtube.com/watch?v=YXbvKTdqCmE; http://www.youtube.com/watch?v=9DQnpzDZ_oQ

120 The next dimension, *Media Week*, 8 September 2009: http://www.mediaweek.co.uk/news/936682/next-dimension/

121 Is 3D the future of PC and console gaming?, *Guardian.co.uk*, 11 November 2009: http://www.guardian.co.uk/technology/gamesblog/2009/nov/10/games1

# Recent thought leadership

Technology Predictions 2010, Deloitte Touche Tohmatsu: www.deloitte.com/tmtpredictions

Media Predictions 2010, Deloitte Touche Tohmatsu: www.deloitte.com/tmtpredictions

Shift Index by the Center for the Edge, Deloitte LLP (US): www.deloitte.com/us/shiftindex

Television's Got Talent, Deloitte LLP (UK): www.deloitte.co.uk/mgeitf

Cloud Computing: A collection of working papers by the Center for the Edge, Deloitte LLP (US): www.deloitte.com/us/cloudcomputing

2009 Tribalization of Business Study, Deloitte LLP (US): www.deloitte.com/us/2009tribalizationstudy

State of the Media Democracy Survey — Fourth Edition, Deloitte LLP (US): www.deloitte.com/us/realitycheck

The Promise of Open Mobile: Capturing value in a brave new world, 2009 Deloitte Development LLC: www.deloitte.com/us/openmobile

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Digitization also continues to be a force. Although it precedes the current recession by decades, it is still contributing to a reinvention of the global media sector.

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