



Consolidate, diversify or perish

Arthur D. Little Media Flow of Funds, 2017

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Arthur D Little

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Authors:



Clemens Schwaiger

Principal, Global Head of Digital Media
Central Europe
schwaiger.clemens@adlittle.com

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Executive summary

The media industry is experiencing a massive digital transformation. This creates a complex and volatile environment for media companies and the transformation will significantly affect value flows going forward. Traditional media companies will need to take (tough) portfolio decisions as the digitization of the industry progresses.

With a stronger domestic market and a higher share of audiovisual revenue, US-based media groups exhibit a more attractive economic performance than their European peers. Besides smaller scale, most European media groups also have sizeable legacy businesses in News & Print experiencing structural declines. However, as a consequence of this, European companies were forced to diversify aggressively into online segments, with online revenue of some of these companies now accounting for up to 50% (or, in some cases, more) of their total revenue. Going forward, we thus expect to see stronger revenue growth rates for most European players.

The traditional value chain will remain intact, but the value share of traditional players will reduce significantly. This will result in a double squeeze for traditional distributors and aggregators: lower incoming funds and higher content cost. This continued pressure has already kicked off a wave of consolidation, with participants aiming at full vertical integration across the value chain. This is particularly visible in the TV & Video segment, but will also affect other media segments soon. For players not active in consolidation or vertical integration, this will lead to long-term, structural competitive disadvantages. Furthermore, traditional players will be forced to seek revenue growth through aggressive diversification into adjacent segments (e.g. e-commerce or live events) and a tighter integration of their existing offline media assets.

Online growth will be substantial everywhere (+EUR 158bn until 2020), opening up opportunities for traditional media players as well as new entrants. Despite low barriers to entry in most online media segments, major positions have been taken (e.g. in online classifieds, video & music streaming). In the mid-term, the online value chain will undergo further fragmentation, resulting in the emergence of a distinct online aggregator business model and a large number of players competing in online distribution in each media segment. In the long term, we expect that online media segments will follow oligopolistic competition with vertically integrated scale players. Thus, any new player should critically assess its ability to achieve long-term scale before entering the online market at this stage.

Content owners and producers will have the strongest hand in the continued digitization of the media industry. Firstly, they will benefit from overall increased demand for their products through offline and online players alike. Secondly, both online and offline players will be willing to pay higher prices for premium content in a search for differentiation. However, content owners and producers will also be preyed upon by offline and online players seeking vertical integration.

In summary, global media will continue to be an attractive growth industry, but dynamics differ by segment and geography.

1. Key Figures

<p>€124 billion</p> <p>Incremental online revenue growth of the global media industry between 2016-2020</p>	<p>Global Media Industry</p>	<p>3.7% CAGR</p> <p>Average growth of the global media industry from 2016 to 2020</p>
<p>35%</p> <p>Share of online revenues in total media industry revenues by 2020</p>		<p>€162 billion</p> <p>Incremental total revenue growth of the global media industry between 2016-2020</p>
<p>29%</p> <p>Share of online consumer spend in total consumer spend in 2020</p>	<p>Global Online Consumer Spend</p>	<p>+8.4% CAGR</p> <p>Average growth of the global online consumer spend from 2016-2020</p>
<p>49%</p> <p>Share of online advertising revenues in total advertising revenues in 2020</p>		<p>10.1% CAGR</p> <p>Average growth of the global online advertising revenues from 2016-2020</p>
<p>-4.1% pts</p> <p>Value share loss of offline aggregators globally between 2016-2020</p>	<p>Biggest Losers</p>	<p>-€2 billion</p> <p>Offline revenue decline in Europe between 2016-2020</p>

2. Introduction

The media industry is experiencing a massive digital transformation. New online competitors and business models are challenging traditional media companies. At the same time, through the digitization of the industry, consumers are gaining access to myriad new opportunities to consume media.

This creates a complex and volatile environment for media companies and it becomes ever more important to understand how this transformation affects value flows. With this report, Arthur D. Little provides insight into the speed and main beneficiaries of this transformation of the media industry.

The objectives of this report are to enable:

- media corporations to identify opportunities for vertical or horizontal integration, as well as to guide portfolio optimization and go-to-market strategies;
- financial investors to identify the most attractive market segments and acquisition targets;
- policy-makers to identify areas where excessive value capture is leading to economic imbalances during the transformation; and
- academia to build on a strong base of data and a framework that can be used to deepen research into the transformation of individual segments of the media industry.

'Flow of Funds' methodology

Arthur D. Little employs a comprehensive methodology to study the evolution of the media industry. In our first edition (see *Digitization: Do or Die*, published December 2014, www.adl.com/mediaflowoffunds2014) the analysis focused on Germany, France, Italy, Spain and the United Kingdom (EU5) and studied the period between 2007-2013, as well as offering a forecast until 2017.

For our 2017 edition, we expanded the concept to more than 50 geographies and more than 70 individual media segments. This report's analysis focuses on the period of 2016-2020, and for presentational reasons, we summarized this extensive quantitative data in five major regions (North America, Latin

America, Western & Eastern Europe, the Middle East & Africa, Asia Pacific) and six media segments (TV & Video, News & Print, Books, Music & Radio, Gaming, Online Advertising) that all experience distinct trends.

Our quantitative analysis distinguishes the sources of funds (advertising spend, consumer spend, public spend) and whether the spending is for online or traditional ('offline') consumption. Most industry forecasts only provide revenue developments by media segment while our analysis tracks specifically how these revenue flow through the rest of the value chain, i.e., from distribution to aggregation to production. This sheds light on the impact of the online transformation throughout the value chain and helps to identify value chain positions that will claim a growing or declining share of the industry's value going forward.

Our analysis is based on historical and forecast values of third-party data providers for the revenue inflows. We then conducted significant cross-checks and improvements to these original data sources per segment and geography. For the flow between the individual value chain steps and the respective media segments, we conducted a comprehensive analysis of gross margin trends per value chain step as well as individual cost item trends (e.g., content cost in Pay TV, traffic acquisition cost in online advertising, etc.). We used 2015 average exchange rates for historical and forecast revenue data.

We define traditional distributors as all entities holding the direct consumer relationship in a given media segment (e.g., pay TV platform, newsstand, physical media retailer) and traditional aggregators as all entities aggregating individual units of content into consumable media (e.g., newspaper/magazine publishers, TV channels, games publishers, music labels and publishers). Content producers can be either individuals (e.g., authors, independent journalists, composers, artists, TV/film producers) or corporations (e.g., Hollywood studios, press and photo agencies).

In addition to our quantitative analysis, a significant number of interviews were held with senior executives in the European, Asian and US media industries to gather their views on the main winners and losers of the transformation in their geography.

3. State of the industry transformation

Key consumer, technology and ecosystem trends shaping the industry

The flow of funds is defined by a number of key trends, which can be summarized as: (i) changes in consumer behavior, (ii) the impact of new technologies, and (iii) the media ecosystem's behavior in relation to these factors.

Consumer

- Today, consumers are connected 24/7 and expect real-time and digestible entertainment. This results in the need for high 'content refresh rates' for distributors and aggregators e.g., in contrast to the daily production of a newspaper, online news portals need to refresh content at least every 15-30 minutes.
- Until the early 2010s, consumers bought physical media or downloaded digital media to 'own the content'; however, with streaming of content, a new paradigm in content consumption has emerged, with the focus being on 'access to content'. This leads to significant business model changes for rights owners and content producers.
- Ever more sophisticated consumer devices, and ever simpler digital content production tools, give rise to the 'consumer-as-producer'. The consumer generates high-quality content (text, pictures, videos) and broadcasts this through platforms with global reach and substantial audiences (e.g., YouTube, Instagram, self-publishing platforms, twitter, soundcloud). Individuals thereby disintermediate online and offline aggregators to a certain degree, as they can build and monetize (significant) an own digital following.
- As ever more content is available to consumers, tailor-made and highly personalized content offerings emerge across all media segments, resulting in the 'consumer-as-editor'. This shift towards personalization has profound implications for broadcast and print media that focus on one-to-many communication.

Technology

- The rapid penetration growth of connected devices in both developed and emerging markets is the single biggest demand driver for online media. The recent arrival of low-cost 4G smartphones and affordable tablets will drive further growth in the already huge global audience for video/digital

consumption of media. Propagated for some time now by leading players, 'mobile-first' thinking will be mandatory for all segments of the media industry going forward.

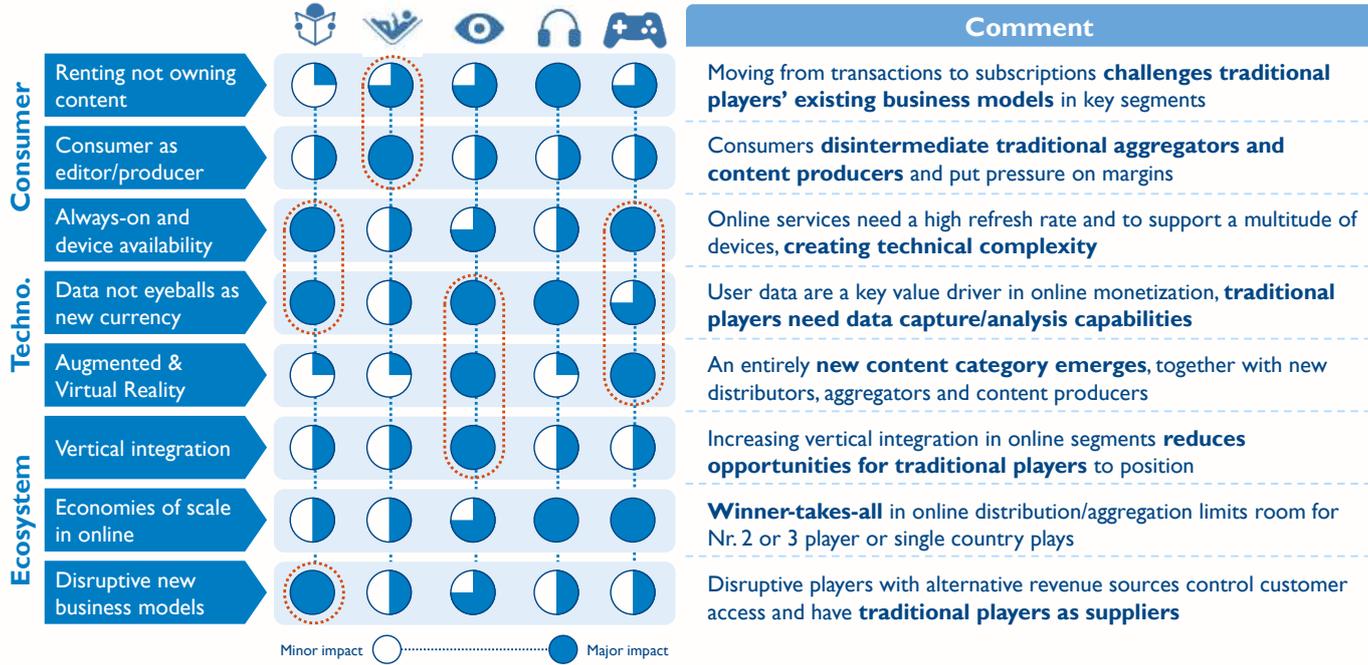
- Big data and analytics enable customized services through comprehensive tracking and analysis of usage and interaction data of customers/users. This drives business value, in particular in the advertising industry. Some segments, such as online advertising, are already quite advanced in targeting and performance measurement, and first signs show that these tools and business models will also enter the offline advertising value chain.
- Virtual reality (VR) and augmented reality (AR) are emerging as new content consumption platforms. Currently, the VR/AR ecosystem is driven by devices, with no leading standard or ecosystem having established itself yet. Also, major content owners/producers have yet to commit significant resources to AR/VR content production. However, once relevant content categories are defined, we believe this profoundly new way of interacting with content will then be a revolution rather than an evolution (i.e., HD, 3D, UHD).
- Block-chain technology started to gain traction in the FinTech space and is now entering the e-commerce domain. It is only a question of time before this revolutionary technology also reaches the media industry. More efficient management of royalties in Radio & Music and TV & Video, as well as business models relying on micro-payments, could be potential fields of application, and will disrupt existing value flows.

Ecosystem

- The pressure on traditional distributors and aggregators has kicked off a wave of consolidation, with participants aiming at full vertical integration across the traditional value chain. This is particularly visible in the TV & Video segment (e.g., Comcast's acquisition of NBCUniversal, Virgin Media Ireland's acquisition of TV 3 and UTV, AT&T's acquisition of DirecTV and planned acquisition of Time Warner, BEIN's acquisition of Digitürk, Netflix's production of original programming, HBO's direct-to-consumer propositions), but will likely also affect the other media segments. Players not active in consolidation or vertical integration could experience long-term, structural competitive disadvantages.

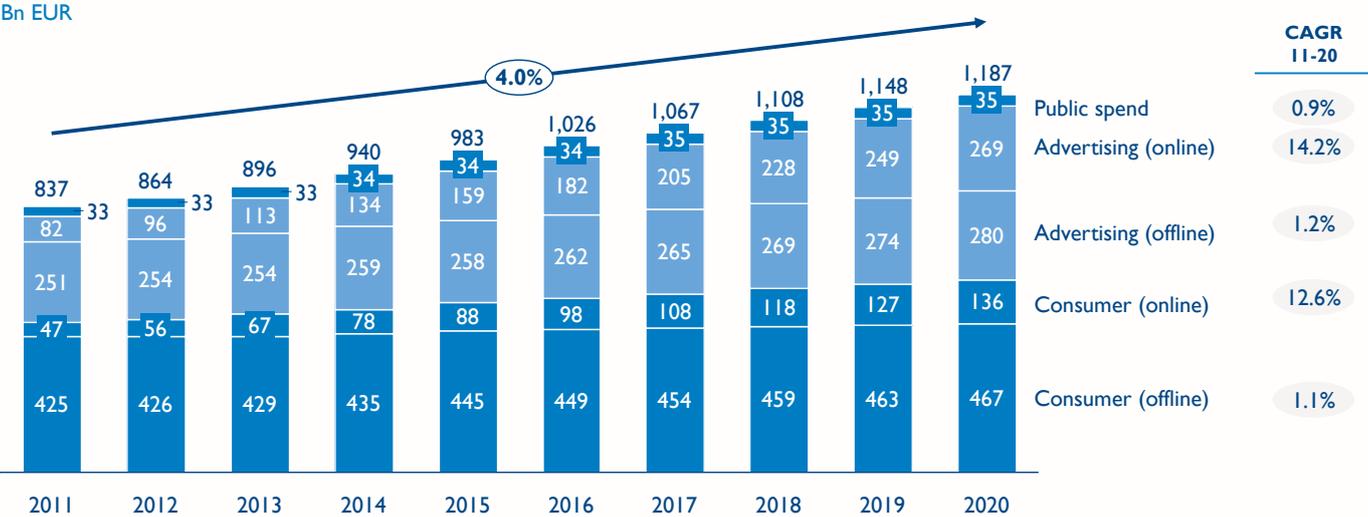
- Despite low barriers to entry in most online media segments, there is increasing concentration due to economies of scale in online business models. Major positions have been taken (e.g., in online classifieds, video streaming, music streaming) and while the number 1 players often earn healthy margins, many market followers struggle to turn a profit. Leadership requires significant financial resources, unique competitive advantages (e.g., a large captive subscriber base) or ulterior core-business synergies (e.g., Amazon Prime Instant Video) for new entrants or market followers to remain viable competitors.
- Social media platforms have replaced the online portals as new 'landing pages' for consumers and are increasingly turning into content aggregators (e.g., Facebook Instant Articles). This leads to a prisoner's dilemma for content owners and aggregators with own online distribution regarding whether to be present on such platforms. However, the recent discussions around 'fake news' will force these new platforms to re-examine the use of own editorial staff to manage news content more directly on their sites.

Figure 1: Challenges for traditional players in core segments



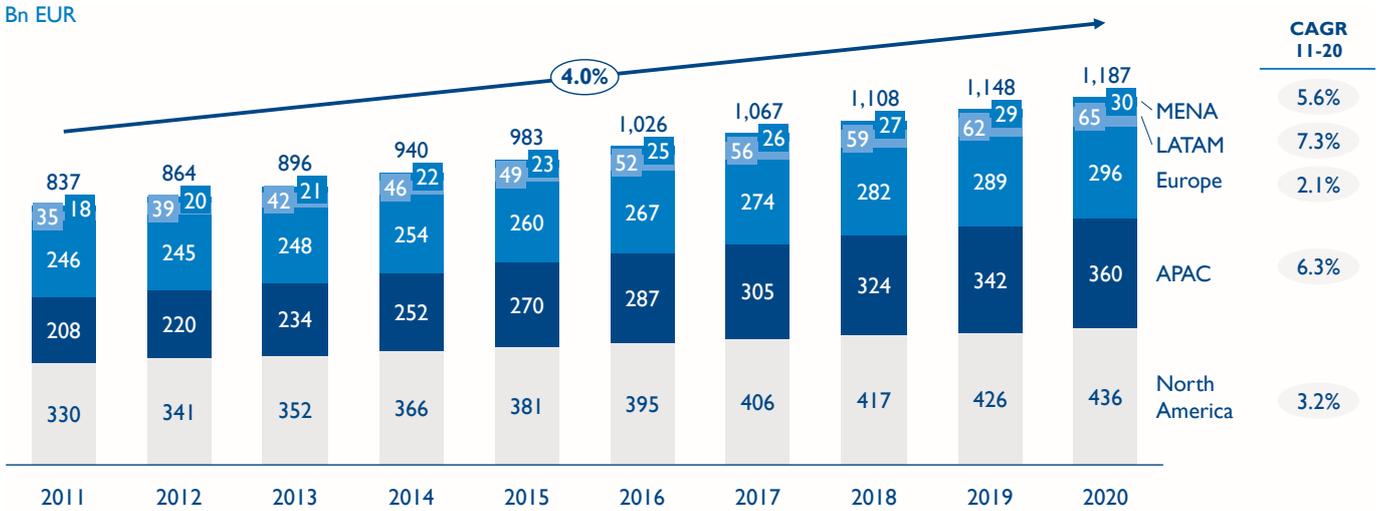
Source: Arthur D. Little

Figure 2: Global media market, by source 2011-20



Source: Arthur D. Little data and estimates

Figure 3: Global media market, by geography, 2011-20



Source: Arthur D. Little data and estimates

Strong revenue growth globally, but dynamics differ by geography and segment

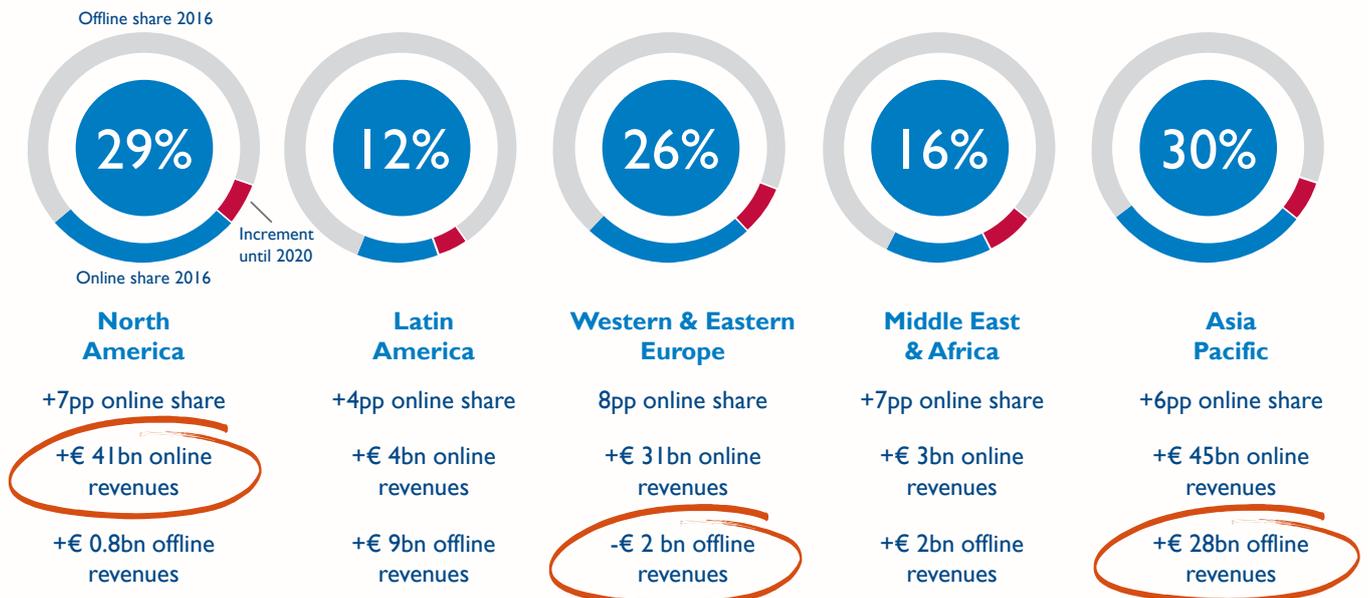
The financial crisis in 2008-2010 significantly impacted the media industry globally. A key component of the industry's revenue is advertising spend, a source of funds that is particularly sensitive to macroeconomic effects. However, as predicted in our previous study, the negative effects of this crisis were successfully overcome, and since 2011, the media industry is on a healthy overall growth trend again, with a CAGR of 4.0% forecast between 2011-2020.

Advertising revenue, both online and traditional/offline, will also be the industry's main growth driver, with public and consumer

spend showing significantly slower expansion over the next four years. Public spending (i.e., public service broadcasting fees in TV and radio, subsidies for TV and movie production, subsidies for printed media) is expected to follow the same growth pattern as offline consumer spend.

In 2016, the global media industry accounted for slightly more than EUR 1tn in total revenue, with North America, Europe and Asia Pacific accounting for 92% of this. Latin America should exhibit the strongest growth over the 2011-2020 period, followed by the Middle East & Africa and Asia Pacific. North America and Europe look to be saturated markets and are expected to witness slower growth (~2-3% CAGRs) until 2020.

Figure 4: Online / Offline share of revenues 2016



Note: Figures in charts represent online revenues as % of total revenues, figures below charts are incremental values until 2020
Source: Arthur D. Little Media Flow of Funds database

The dynamics in the world’s major regions differ significantly, in particular with regard to the maturity of online media markets. Furthermore, the differences in macroeconomic growth have a significant impact on overall media sector growth.

- North America is the largest media market and online media revenue have reached a 29% share of total media revenue. Over the next five years, this share could grow by 7 percentage points (adding EUR 40bn), to reach 36% in 2020. At the same time, the offline media segments will essentially remain flat (adding only EUR 0.8bn). Thus, 98% of growth in North America until 2020 will be driven by online media.
- Asia Pacific has the highest online share of all regions (30%), but besides significant online growth (+EUR 45bn until 2020, or 6 percentage points) offline media will also see significant growth of an incremental EUR 28bn through 2020. The combined growth of offline and online media propelled Asia Pacific in 2015 to become the second-largest media market globally.
- Western & Eastern Europe’s 26% online share of revenue is considerably lower than that of North America and significant online media growth of EUR 31bn will be needed to compensate for a EUR 2bn decline in offline media segments. This puts significant pressure on traditional European media companies to diversify aggressively into online media.
- Latin America has the lowest share of online media (12% in 2016) and is expected to see offline growth of nearly twice the rate (+EUR 9bn) of online growth (+EUR 4bn) through 2020. The dynamics of this region are thus still revolving

around driving value and volume growth of traditional media segments.

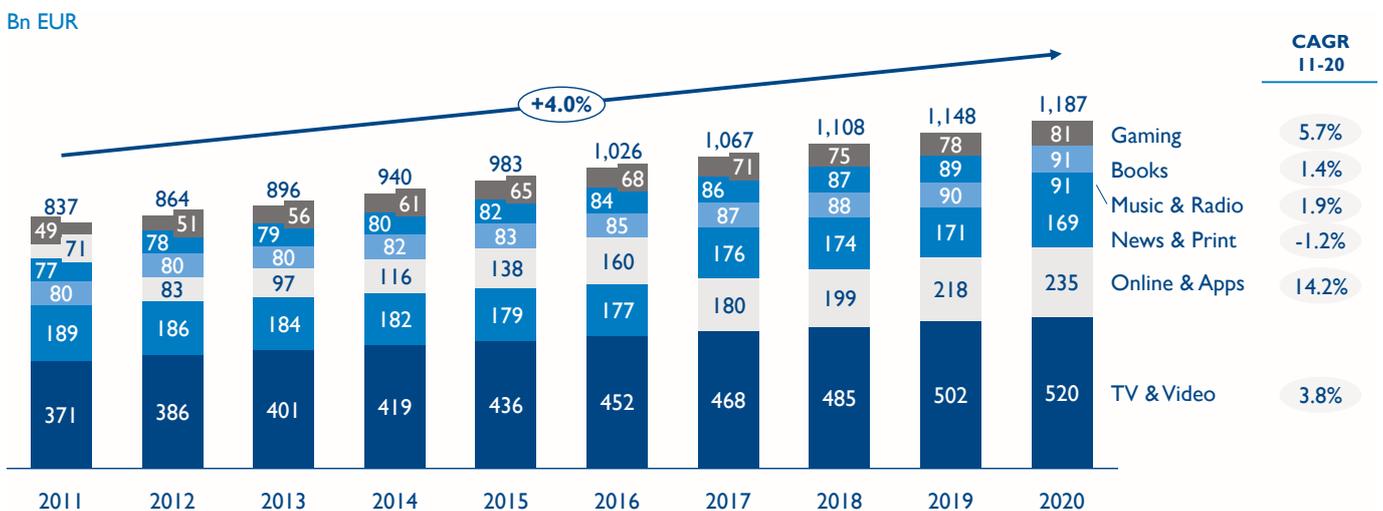
In our quantitative analysis of the global media industry, we collected data for more than 70 individual media segments. However, in our report, these data can be summarized in six major segments.

News & Print represents all B2C circulation and advertising revenue for newspapers and magazines, as well as related online subscription and advertising revenue for e-magazines, e-newspapers and comparable portals. This segment is burdened by the continued structural decline of offline revenue — in particular, in North America, Europe and Asia Pacific. Online revenue are growing strongly (+EUR 11bn), but are not sufficient to compensate for offline declines (-EUR 19bn), resulting in a forecast overall CAGR decline of 1.2% between 2016-2020.

The **Printed Books** segment is comprised of all B2C revenue for physical books, audio books and e-books. The offline revenue are expected to be quite resilient (only -EUR 0.3bn from 2016-2020) to the digital transformation, and online growth is fully complementary (EUR 5.6bn), leading to an online share of potentially more than 21% by 2020.

TV & Video is by far the largest segment and contains cinema (box office and advertising), home video entertainment (retail and rental), online video (TVOD, SVOD, AVOD), PayTV (subscription, advertising), free-to-air TV (advertising), and public service broadcasting fees where applicable. Despite its size, this segment is showing healthy growth, but the online share is still quite low (~6% in 2016). Both offline (in particular, PayTV and TV advertising) as well as online segments (in particular, SVOD) should experience solid growth (3.6% CAGR over 2016-2020),

Figure 5: Global media market, by segment 2011-20



Note: Includes spending from consumers, advertisers and public subsidies
 Source: Arthur D. Little Media Flow of Funds database

potentially adding a total of EUR 69bn through 2020 to segment revenue.

Revenue for **Music & Radio** come from sales of recorded music (physical media, downloaded, streamed) and advertising (online radio) as well as from sponsoring and ticket sales for live music events. Surprisingly, this segment is still largely dominated by offline revenue (86% in 2016), and offline and online revenue are expected to contribute nearly equally to overall segment growth. The main driver for this development is the increasing importance of live music events in overall segment revenue.

Gaming has traditionally held the highest online share of all media segments, as the share of physical gaming revenue rapidly declined at the expense of digital distribution (i.e., downloads, streaming) and massively multiplayer online games (MOOG). From 2016-2020, all of the growth in this segment is likely to be driven by online consumption (+EUR 14bn), with overall online share potentially reaching a whopping 75% by 2020. This segment does not include additional hardware revenue related to game consoles or any other gaming devices.

Media flow of funds: how value flows in the media industry

The digitization of the media industry has led to significant challenges for its major players. Over the period of 2010-2016, the US-based media groups (e.g., Viacom, The Walt Disney Company, Time Warner) showed stronger fundamentals than their European peers, i.e., higher revenue and profitability growth. This was mainly due to a stronger domestic market,

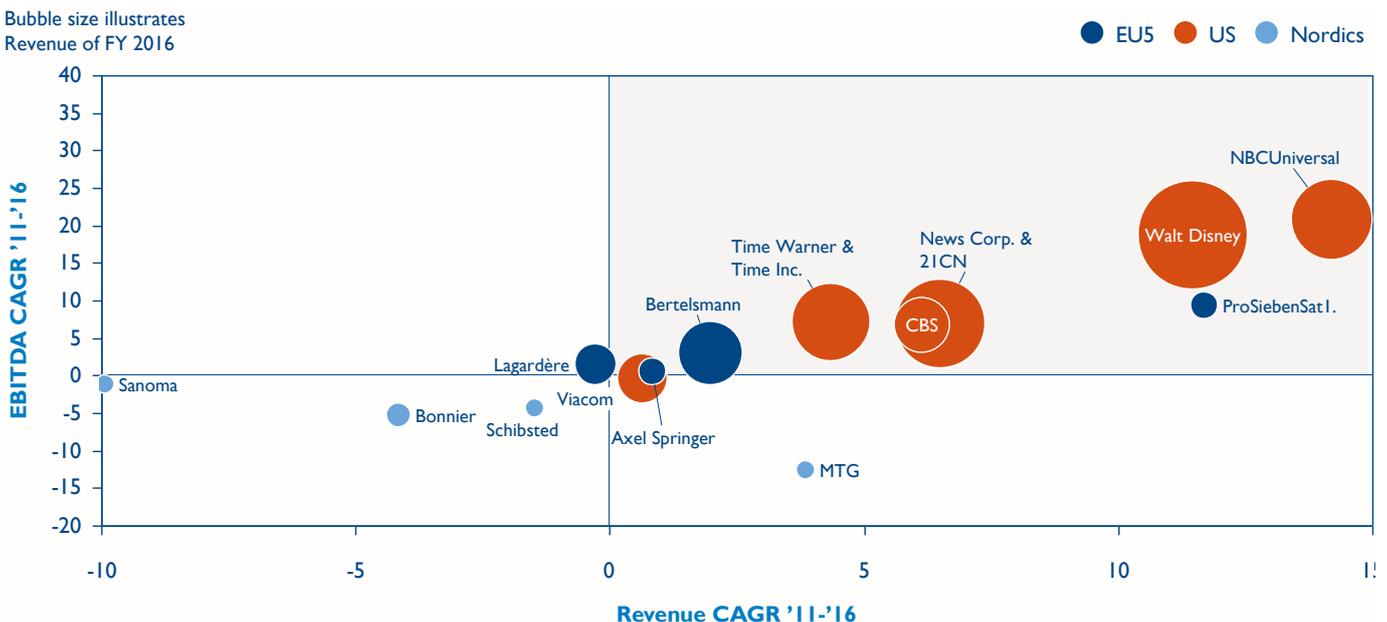
which rebounded faster from the economic downturn in 2008-2010, and a higher share of audiovisual revenue. Furthermore, the data suggest a link between scale and performance, with European companies recording substantially lower revenue than their US peers. Most European media groups have sizeable legacy businesses in News & Print, which are undergoing a structural decline, which thus impacted headline revenue growth negatively. However, as a consequence, the European companies (e.g., Schibsted, Hubert Burda Media, Axel Springer) were forced to diversify aggressively into online segments, with the online revenue of some of these companies now accounting for up to 50% (or more, in some cases) of their total. Going forward, we thus expect stronger revenue growth rates for most European players.

Our analysis of the flow of funds across all media segments and geographies reveals that offline distributors (e.g., newsstands, physical media retail, Pay TV platforms) and offline aggregators (e.g., broadcasters, publishers) will remain under significant pressure. The industry's transformation should result in future growth flowing around these value-chain steps, towards content owners and online players as the main beneficiaries.

Consumer and public spending are expected to decline slightly in overall importance, as advertising revenue experiences higher growth between 2016-2020.

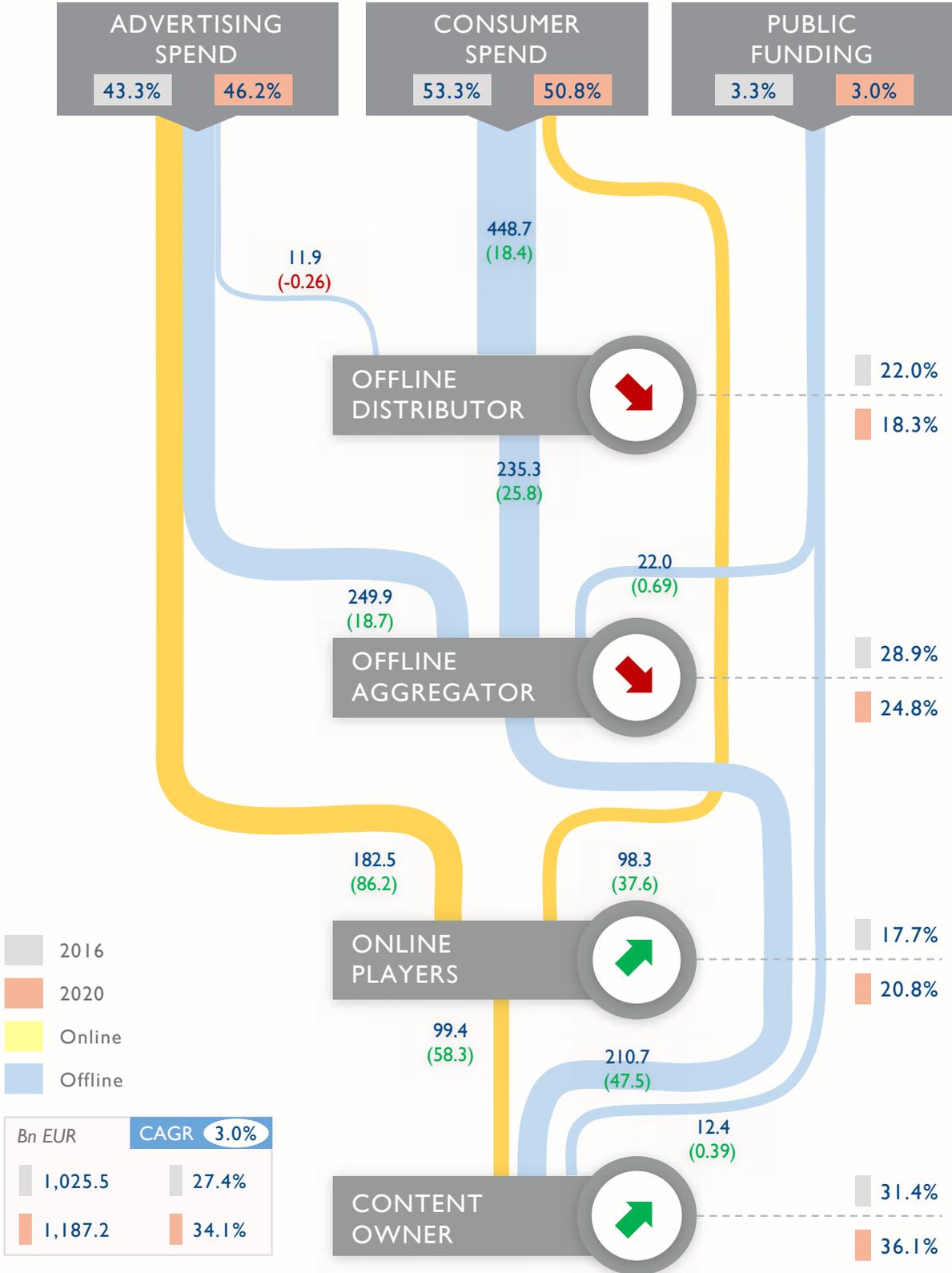
In the online value chain, online advertising revenue (a EUR 183bn market in 2016) could grow by another EUR 86bn EUR, to total EUR 269bn of revenue in 2020. This represents the single largest incremental source of funds for the media ecosystem.

Figure 6: Revenue & EBITDA CAGR, 2011-16



Note: 2016 revenue & EBITDA are projections based on 9M 2016 actuals and typical Q4 performance of the respective companies
 Source: Arthur D. Little analysis, Company reports, Thomsen ONE

Figure 7: Global Flow of Funds, all segments in bn EUR, 2016 vs. 2020



Source: Arthur D. Little

At the same time, consumer spend on online media is expected to grow by EUR 38bn through 2020. These two combined inflows will result in online players potentially capturing an increasing share of overall value in the ecosystem, growing their share from 18% in 2016 to 21% in 2020. However, this online growth could also result in more than EUR 58bn of incremental revenue for content owners. In 2020, the inflow from online players to rights holders and content producers could thus total EUR 157bn.

The offline value chain will also see an increase in sources of funds, roughly equally split into consumer spend (+EUR 18bn) and advertising spend (+EUR 18bn), while public spend will only grow slightly (+EUR 1bn). However, distribution players will have to disperse more of their inflow (+EUR 18bn incoming, +EUR 26bn outgoing) to aggregators, thereby leading to a smaller overall share of the industry's value capture (18% vs. 22%). In addition, for traditional aggregators, the balance will be negative, with EUR 45bn of inflows and EUR 48bn of outflows to content owners.

Content owners and producers will be the single largest beneficiaries of the transformation until 2020. This value chain step will see an incremental value capture of EUR 106bn. This will allow them to increase their share of total value from 31% in 2015 to potentially 36% in 2020. It appears that 'content is king' after all: content owners should benefit from strong growth from online players and should also experience increasing competition for the most valuable content from offline value chain players.

The dynamics of flow of funds differ greatly by segment. Thus, we provide a more detailed analysis of value flow and value capture in the individual segment chapters.

Industry end-game: consolidate, diversify or perish

The global media sector will continue to be an attractive growth industry, but dynamics differ by segment and geography. Traditional media companies will need to take (tough) portfolio decisions as the digitization of the industry progresses.

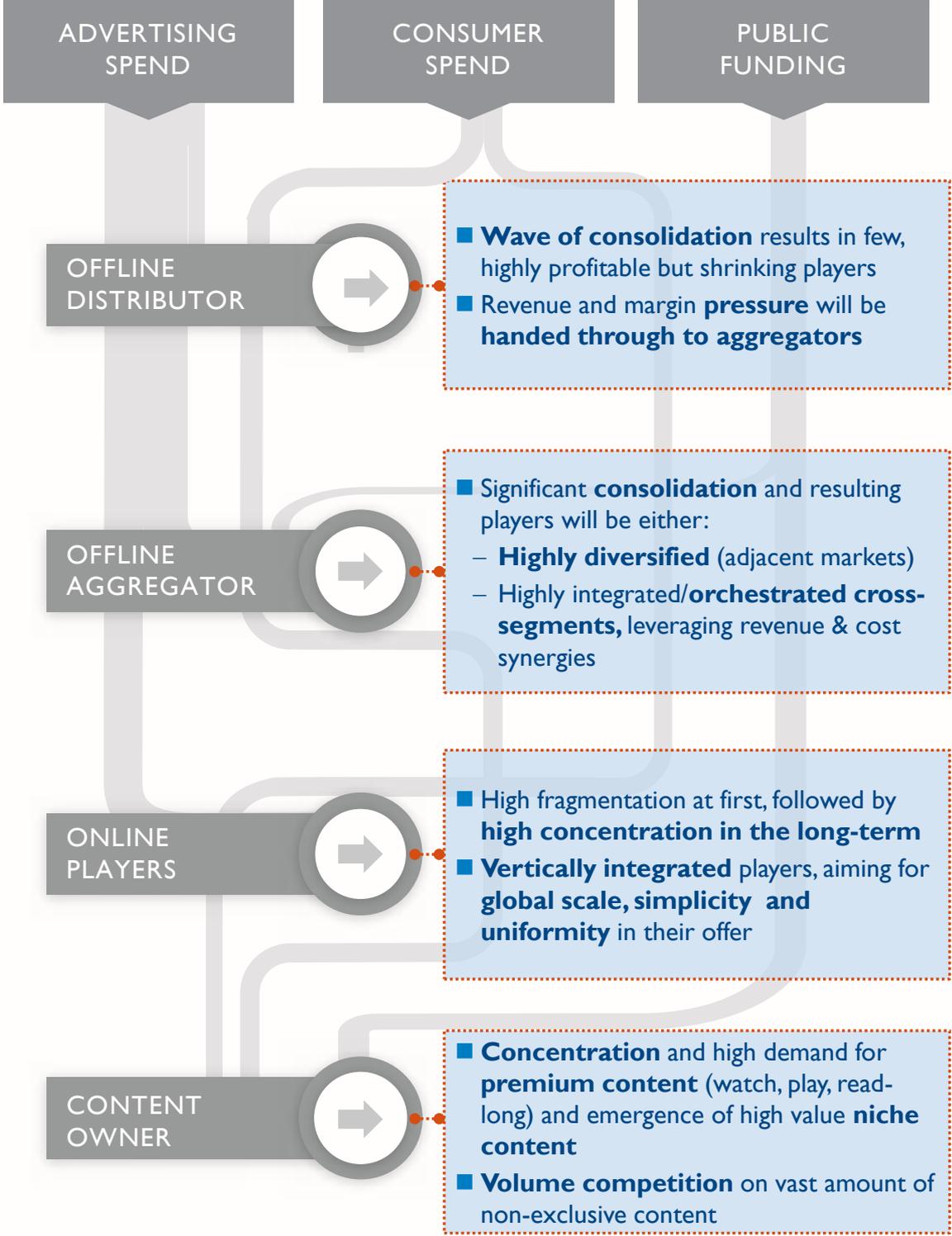
Online growth should be substantial everywhere (+EUR 158bn through 2020), opening up opportunities for traditional

media players as well as new entrants. In the mid-term, the online value chain will likely undergo further fragmentation, resulting in (i) the emergence of a distinct online aggregator business model (e.g., playlists, media-related marketplaces) and (ii) a large number of global, regional and national players competing in online distribution in each media segment. While most segments and markets are still in the fragmentation stage, some countries have already started to consolidate (e.g., SVOD in Germany with the exit of Vivendi's watchever). In the long term, online media segments will follow oligopolistic competition with vertically integrated scale players. Thus, any new player should critically assess its ability to achieve long-term scale before entering the online market at this stage.

The traditional value chain should remain intact. However, with online growth largely outpacing offline growth (+EUR 46bn through 2020), the value share of traditional players should decline significantly. This will result in a double squeeze for traditional distributors and aggregators: lower incoming funds and higher content cost. The consolidation wave in offline distribution (e.g., physical media retail, box office, Pay TV operators) will intensify as existing players strive to concentrate profits in their respective segments. These substantially larger players will then also be in a strong position to shift the margin pressure over to offline aggregators (i.e., news and magazine publishers, TV broadcasters, book publishers). This pressure will in turn lead offline aggregators to seek consolidation themselves. Furthermore, traditional players will be forced to seek revenue growth through forceful diversification into adjacent segments (e.g., e-commerce or live events) and a tighter integration of their existing offline media assets.

Content owners and producers will have the strongest hand in the continued digitization of the media industry. Firstly, they will benefit from overall increased demand for their products through offline and online players alike. Secondly, both online and offline players will be willing to pay higher prices for premium content in the search for differentiation. However, content owners and producers will also be preyed upon by offline and online players seeking vertical integration.

Figure 8: ADL View: Industry End-Game



Source: Arthur D. Little Media Flow of Funds database

4. News & Print – every cloud has a silver lining

Flow of Funds: aggregators will continue to suffer, but pockets of growth emerge

Newspapers and magazines are now breaking out of their 'digital paradox'. These businesses have been strongly affected by digitization and they hadn't really prepared for the digital transformation of their businesses and their organizations. The News & Print segment was a EUR 177bn industry in 2016, of which 13% related to online services. The structural decline in the traditional value chain of this segment is likely to continue through 2020. Declines will be led by the North American market, which is expected to shed 20% of its 2016 size (i.e., -EUR 8bn), followed by significant contractions in Europe, Asia Pacific and the Middle East. Only Latin America is still expected to see a small degree of growth in the traditional/offline News & Print market.

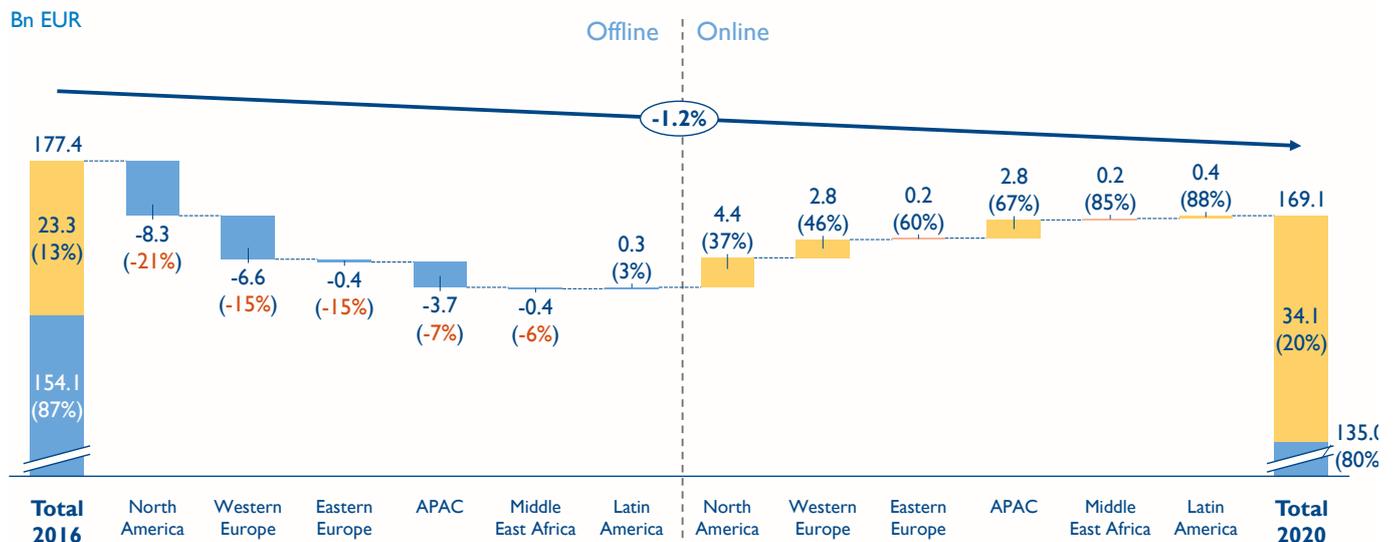
The significant growth of online revenue, in some geographies even double of 2016 revenue (e.g., APAC, MENA, LATAM), likely will not compensate for the steep decline of offline revenue. By 2020, the News & Print segment could see 20% of its revenue coming from online activities. This will deepen the crisis at some of the traditional aggregation/publishing players.

Our exclusive Flow of Funds analysis highlights major shifts of value flow throughout the News & Print segment between 2016-2020.

Over the next four years, online players should see significant growth of inflows from both consumers and advertisers, reaching a value share of 18% by 2020. Offline distributors (e.g., newsstands, magazine and newspaper retailers, subscription and circulation revenue) will see a decline of EUR 6bn from consumer spend, but are expected to be able to pass their margin pressure on to traditional aggregators. The reduced circulation and subscription revenue, combined with a substantial decline in advertising revenue (-EUR 13bn) will lead to a massive value loss at offline aggregators (i.e., newspapers and magazine publishers) of more than EUR 26bn through 2020. For content owners (i.e., press and photo agencies, freelance writers and journalists), an increase in online revenue will overcompensate for the decline from traditional aggregators, thereby slightly increasing their overall (albeit small) value share of News & Print segment revenue.

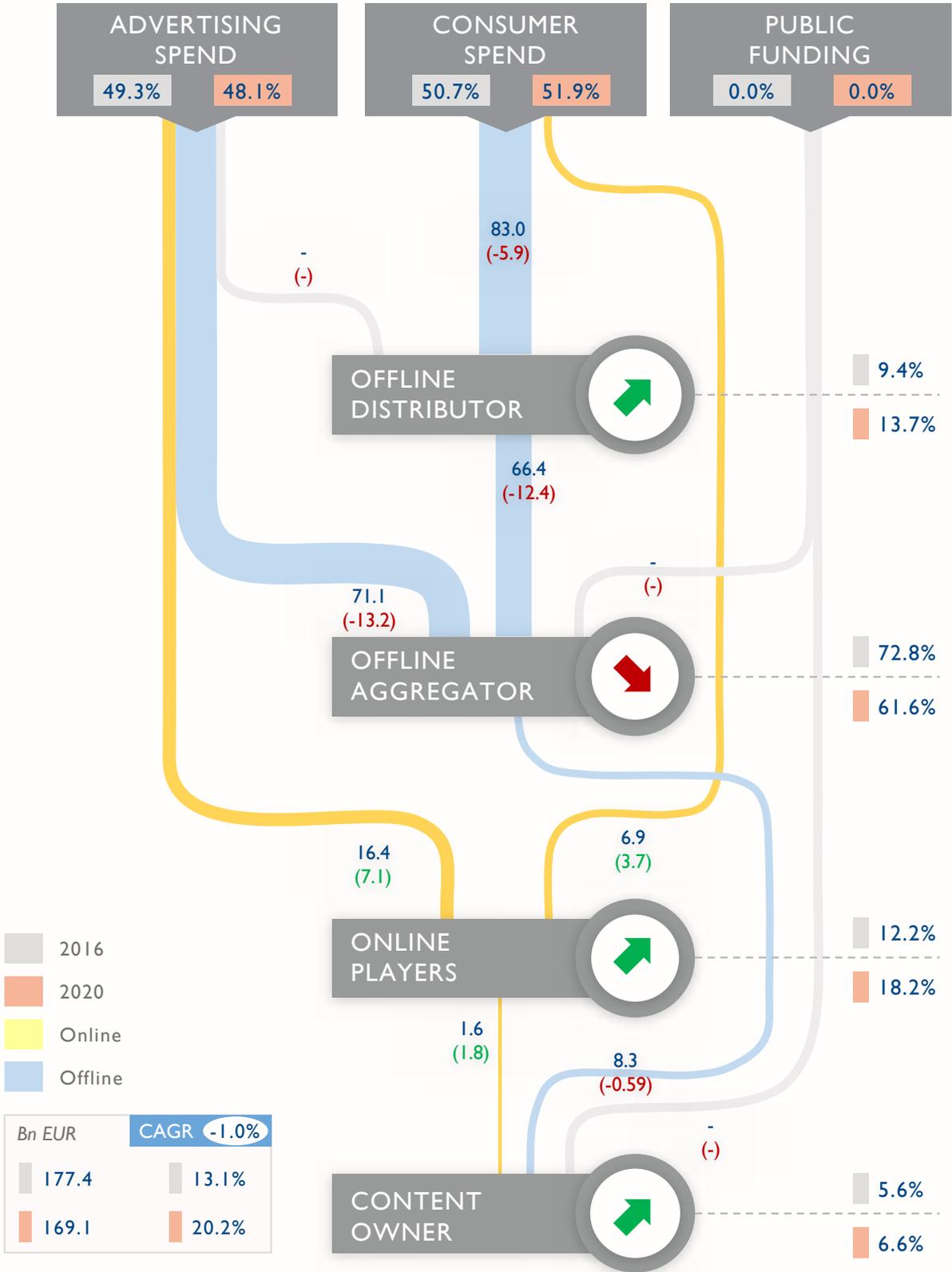
Newspaper and magazine publishers need to turn this strategic headwind into an opportunity to transform their business models in a period during which, after the peak of the crisis, market revenue are still decreasing, but at a slower pace

Figure 9: News & Print, by geography & channel, 2016 vs. 2020



Note: Absolute figures in charts represent incremental revenues until 2020, percentages show relative values to 2016 revenues
 Source: Arthur D. Little estimates

Figure 10: News & Print, Flow of Funds, all segments in bn EUR, 2016 vs. 2020



Source: Arthur D. Little

than between 2007-2013. As consumers have gone digital, newspapers and magazines now face an exciting but existential challenge: finding a sustainable digital business model and transformation roadmap.

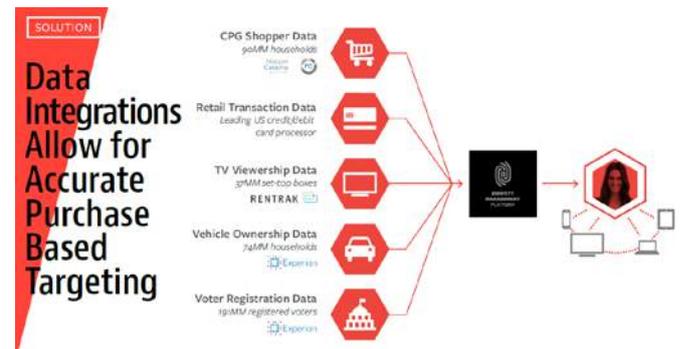
Sustainable forms of online monetization emerge

Virtually all traditional newspaper and magazine brands have developed an equivalent online offer, even if the underlying business models may differ: paywalls, metered access, freemium, add-on to paper subscription. The different business models of online press players can be structured into eight key models in the digital era (see figure).

Advertising models have evolved considerably from an initial focus on banner advertisements. Today, brand content and targeted advertising are the hottest areas of innovation. A broad ecosystem of companies and PR agencies has emerged around content marketing/brand content. This form of advertising is viewed as un-intrusive by readers and provides an elegant means to circumvent ad-blocking software. Lastly, a newspaper's or magazine's editorial trust leads to a positive image transfer for the advertiser. Time Inc. estimates the global brand content market at USD 4bn today, and more than doubling, to USD 9bn, by 2018. As a consequence, Time Inc. propose a comprehensive product and service portfolio across all of their print and online properties to support large-scale advertisers. The **#beyondbeautiful** campaign developed in cooperation with Walgreen's is a brilliant example of how centrally orchestrated brand content can be distributed across a large amount of print and digital channels.

Figure 11: Business Models of online press

Time Inc.'s acquisition of Viant (an AdTech company with >USD 100m in revenue) is another example of a wider trend of major News & Print players aggressively building data analytics and targeting capabilities. News & Print companies typically have a wealth of data on socio-demographic segmentation and online user behavior, as well as reading preferences (online and offline) of a large number of consumers. Making this data accessible in an aggregated form, integrating further third-party data sources, and leveraging this across business lines would create significant value for advertisers.



Source: Viant, Time Inc.

This could also create a sustainable competitive advantage over Google (targeting based on intent) or Facebook (targeting based on interest), as the extent and accuracy of data are more advanced. In addition, large-scale News & Print companies own online properties that have reach equal to that of Google and Facebook.

		Financing model							
		Advertising model			Platforms		Paid model		
		Targeted advertising	Brand content	Banner ad	Multiplatform	Aggregator platform	Subscription	Pay per article	SVoD-like model
Description		Possibility to access paid content by watching a targeted advertising	Content published by a brand and the content editor	Advertising banner without any target	Multiplatform content delivery	Platforms that gather articles from other editors	Subscription to newspapers giving unlimited access to content	Purchase of one article at a time	Subscription to a platform that gathers multiple newspapers
	Example	Slimcut Media 	The Huffington Post partnership with Johnson & Johnson 	Widespread model 	BuzzFeed 	Instant Article (Facebook) 	FT.com 	Der Spiegel 	SFR Press

Source: Arthur D. Little data

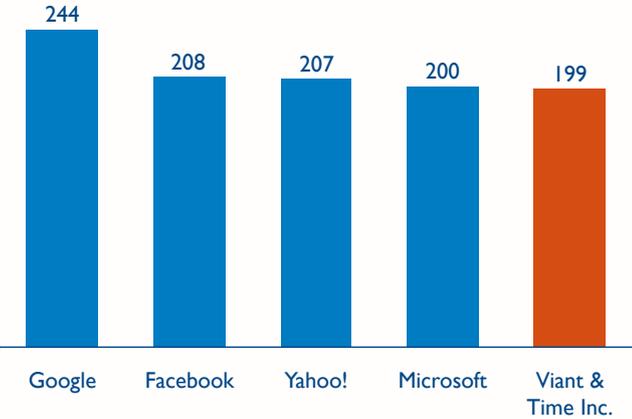


Source: Time Inc. investor relations



Figure 12: US monthly unique reach, 2015

In million individuals



Source: Time Inc.

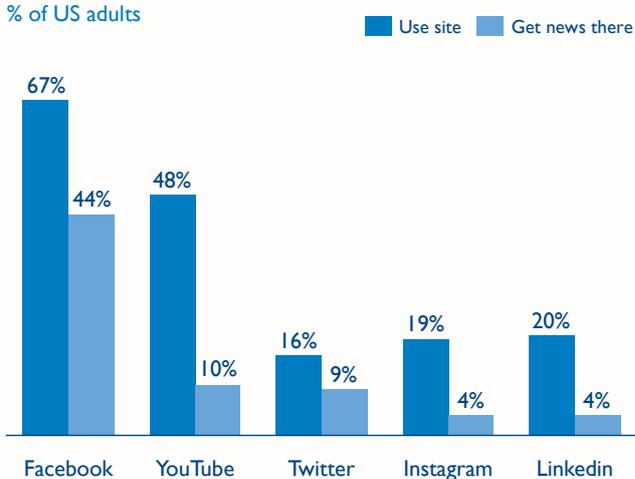
In addition, paid models can now be considered mainstream. The number of newspapers with a digital subscription in the United States increased to 77% in 2015, according to the American Press Institute. At the same time, many primary market research studies show that the majority of consumers (>70%) are not willing to pay for digital newspapers and magazines. As a consequence, pay-per-use models with micro-payments have experienced healthy growth. Dedicated online aggregators (e.g., Blendle) have emerged and offer consumers the ability to buy information by the article. This European start-up has convinced key players, such *The New York Times*, *The Economist* and *The Wall Street Journal*, to sign up for their services: the 'iTunes' of news, i.e., selling each article for EUR 0.10-0.30, the price being chosen by the editor. Beyond being just clients, both *The New York Times* and Axel Springer have decided to invest EUR 3m in the start-up.

Similar to Netflix and Spotify, subscription platforms are also emerging in the News & Print segment. SFR Presse is an interesting case study in this regard. It is a partnership between France's leading newspapers and magazines with telecom operator SFR. The service SFR Presse is bundled with telecom

offers. More than a diversification lever for telecom operators, it has opened a strong readership lever for editors: an addressable market of 18 million clients, in a much easier to deal with format than multiple digital kiosk pure players. While it is too early at this stage to draw conclusions, the success observed in app downloads (it is number 1 in the app store) is good news for the media industry, as it confirms the attractiveness of a subscription-based business model.

The industry has also shown great, albeit ambiguous, interest in platform-based business models. Players such as BuzzFeed or Facebook Instant Articles have created this market. With more than 7bn content views per month (video and articles), by 200 million monthly visitors, BuzzFeed is a 'super-aggregator' for news content from various other aggregators (i.e., online newspaper and magazine sites). As the most widely used social network, Facebook is also aiming at changing the news landscape. A study, recently released by Pew Research Center, found that more than 40% of Americans read or watch news on Facebook (see figure).

Figure 13: News consumption on social media



Source: Pew Research

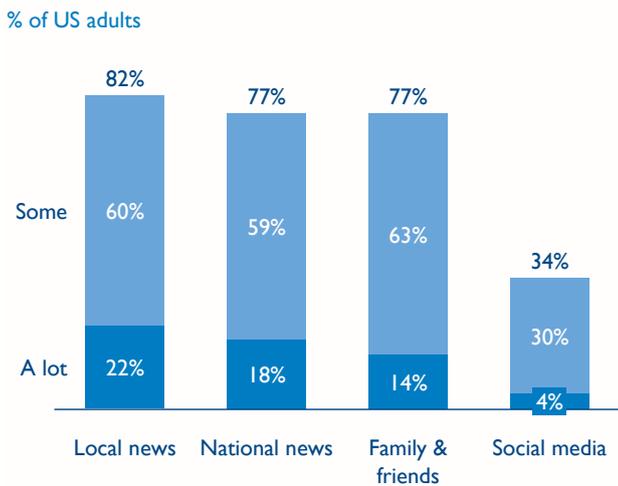
Facebook acts as another 'super-aggregator', providing access to an unparalleled audience, but also capturing a significant share

of value and having the ability to influence through proprietary algorithms which content is displayed. Leading newspaper and magazine aggregators find themselves in a prisoner's dilemma of supporting such new 'super aggregators' or strengthening their own online content aggregation activities. Facebook launched Instant Article in partnership with leading newspaper companies in 2015, allowing *The New York Times* and *The Guardian* to directly publish articles on Facebook. This provides their partners with the possibility of syndicating content through a fast-loading and mobile-friendly format, important concerns regarding digital platforms.

Comeback of trusted media brands

Trust in information from online media in general is limited. A recent study by Pew Research shows that social media has the lowest rating (4% 'trusting a lot'), while local news organizations have the highest (22% 'trusting a lot').

Figure 14: Trust in information from source, 2015



Source: Pew Research

This trust and interest in local news organizations is also exemplified by consumer choice in France. The local press has grown its share in total press revenue, from 26.5% in 1990 to 33.7% in 2014. Nonetheless, even more than national newspapers, local newspapers are still experiencing difficulties in monetizing their audience online, as this is often too limited to be marketed to advertisers at premium prices.

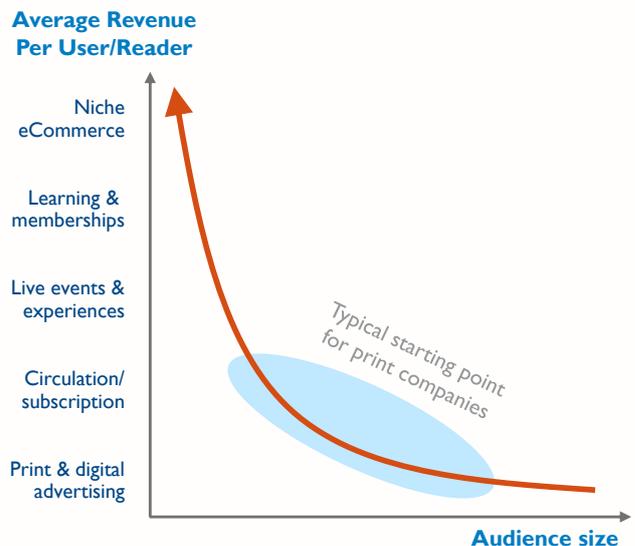
The strong position of typical media groups in their home markets positions them well for online aggregator positions with a strong local/regional focus. This has led leading News & Print players to experiment with their own 'super aggregation' platforms that regroup editorial content from multiple brands of a given media group (e.g., OMNI by Schibsted, which won the best Swedish media service two years in a row). A key success factor is also that diversified News & Print groups are able to aggressively steer traffic to such properties, leveraging

on extensive cross-segment synergies. In the medium to long term, such local/regional 'super aggregation' platforms could even replace individual newspaper and magazine branded online properties of a given group.

Given a plethora of low-quality content, and this general mistrust related to online media, there are also some high-quality niche players emerging. Their focus is on high-quality journalism and exclusive content to differentiate vs. low-quality or freemium services. For example, investigative journalism is experiencing a renaissance in Austria with NZZ.at, in France with Mediapart, and in Germany with CORRECTIV, and so far these initiatives have seen strong growth, both from a readership and a financial perspective.

Leading newspaper and magazine brands are also exploiting their brand trust to (re-)engage with their readers in the physical world. The large audience size and strong engagement of niche audiences has led a number of News & Print companies to diversify their business towards e-commerce and live events. Entry strategies and ambitions can vary, but the basic logic is to move along the spending curve of readers.

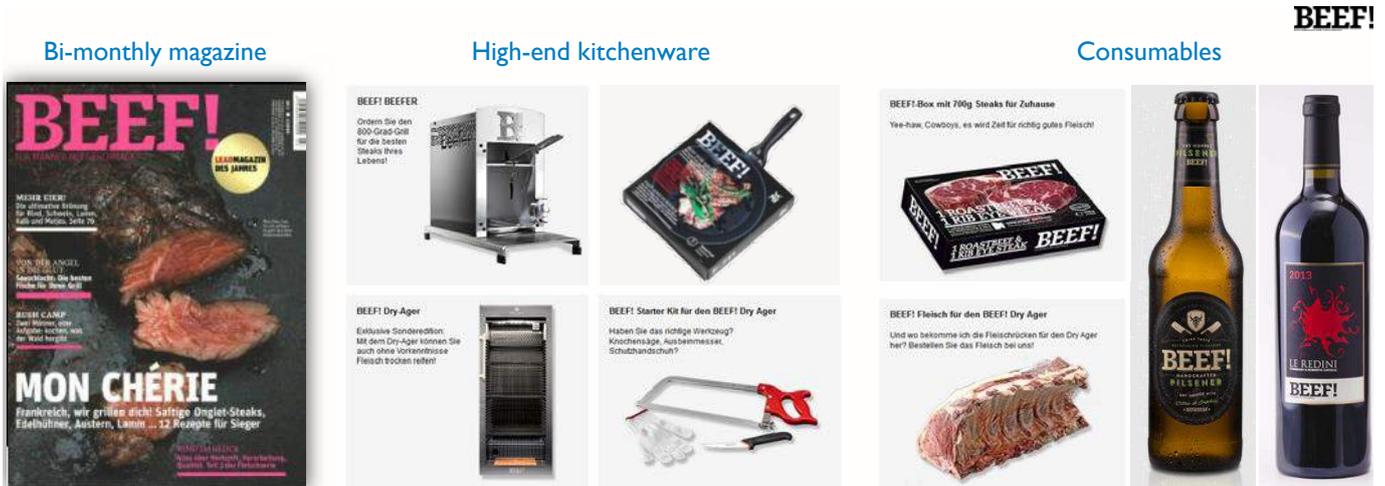
Figure 15: Niche audience value curve



Source: Arthur D. Little, adapted from Time Inc.

In 2009, German media group Bertelsmann launched a men-focused food magazine called *BEEF!*. The magazine is released on a bi-monthly basis and has a total circulation of 60,000 (of which 20,000 are subscribers) at a price of EUR 10/title. In 2015, Bertelsmann launched a BEEF! online store offering a wide range of BEEF! branded products, ranging from high-end kitchenware (e.g., dry-ageing meat refrigerator, high-temperature meat griller, frying pan) to consumables (e.g., dry-aged wagyu steaks, red wine, beer). All products are BEEF! branded special editions from high-quality producers, such as WMMF.

Figure 16: BEEF! product portfolio (excerpt)



Source: Bertelsmann

Similar initiatives are being launched by other players, such as *The Good Life* in France, a recently launched quality magazine focusing on society and lifestyle information, printed on high-quality paper. The associated 'The Good Concept Store' is an online shop from which consumers can buy products 'aggregated' by the magazine's editors. The shop offers stylish items ranging from furniture, electronic gadgets, fashion and wine to books and magazines.

Besides e-commerce, diversification into live events is gaining significant traction among News & Print players. UK-based *Cycling* magazine was facing a significant decline in its advertising and circulation revenue (offline and online) despite strong growth in its digital audience. To address this, the magazine diversified into live events (cycling tours, cycling competitions) and even acquired the UK's leading live events organizer, UK Cycling Events, which hosts more than 50 large-

scale cycling events per year. Events are actively promoted in the printed and online versions of the magazine.

The newspaper and magazine landscape has been shaken up over the last decade. It is the only media segment which has experienced significant cannibalization from online media. European and North American publishers have suffered the most and are likely to face continued pressure going forward, as this phenomenon is an irreversible trend given shifts towards digitization. Newspaper and magazine companies need to rethink their business models and define new businesses, based on the concept of 'digital first' and in order to leverage on existing assets.

In our view, traditional players in this segment have a number of key assets that can be used to create significant value within the core business as well as to support diversification efforts:

Figure 17: Cycling Weekly, traffic steering



Source: Cycling magazine

Exemplary cycling event



- trusted brand,
- highly engaged (niche) audiences,
- extensive reach (offline and online), and
- extensive socio-demographic and consumption data on audiences.

Aggressively ramping up data collection and processing capabilities should be a key focus for any player in this field, as data is becoming the advertising currency. Furthermore, live events and e-commerce activities show highly promising results and low-risk forms of entry exist.

Lastly, the core businesses will require further restructuring, as the massive value destruction in the offline value chain will continue (we estimate -EUR 19bn for offline aggregators through 2020). This will require tough divestment decisions as well as seeking out opportunities to consolidate the market. Overall, the European and Asian markets still show high fragmentation, and a number of family-owned newspaper and magazine groups might look for an exit, as in a global or at least regional context they are ultimately sub-scale.

5. Books – from ownership to access

Flow of Funds: content producers/rights holders at the sweet spot

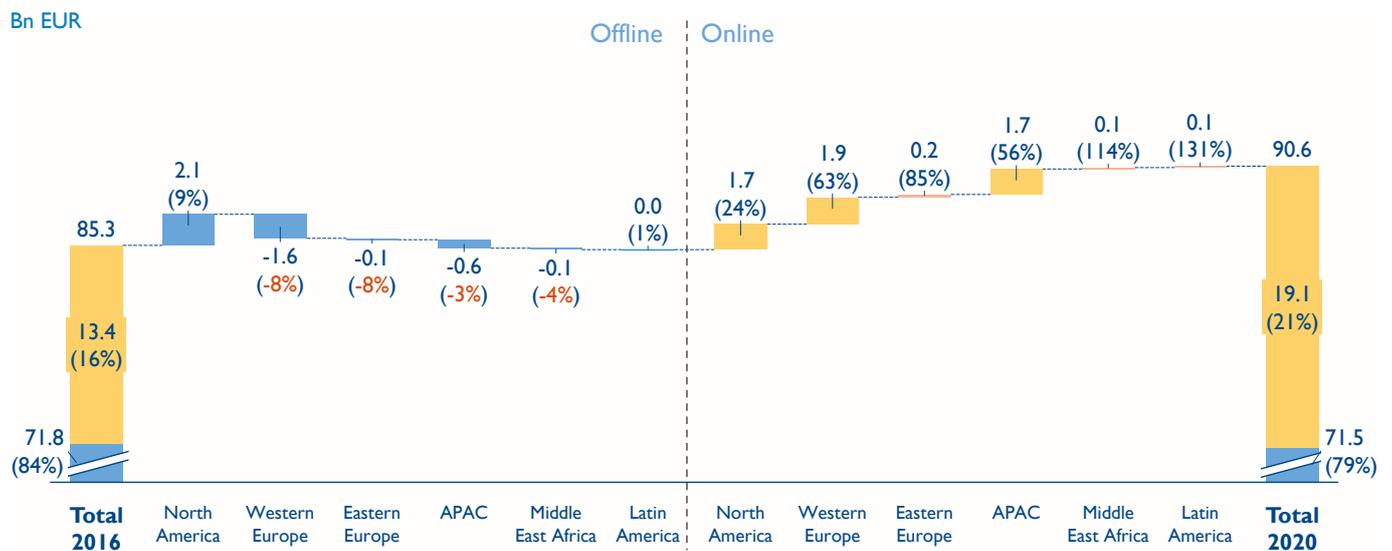
Since the beginning of this century, the book publishing industry has experienced a significant transformation from both authors' and readers' perspectives. First, the growth of online sales changed the equilibrium in the market and, more recently, the advent of the e-book modified the traditional value chain, engendering innovative services and business models. Traditional brick and mortar retailers, already struggling to compete against the breadth and depth of online resellers, are now competing against e-books, audiobooks and new digital business models. However, the overall book industry has coped well with these significant changes in consumption and distribution. Printed book sales (classified as 'offline' in our analysis, even if they are sold through online channels) have proven to be highly resilient to digitization and are expected to decline only marginally through 2020. In North America, this sub-segment is even expected to grow slightly. The biggest decline is expected in Western Europe, at roughly equivalent to 8% of the 2016 market value. On the other hand, online revenue growth (+EUR 5.7bn through 2020) is expected to largely compensate for the minimal offline decline (-EUR 0.3bn) in all geographies and should result in an overall online share of 21%

in 2020. After gaming, this will then be the most digitized media segment.

Despite the significant growth in online revenue, the value share of online players is only likely to increase to 6% until 2020, largely a result of the very limited offline decline. Offline distributors (i.e., brick and mortar retailers of books, e-retail of printed books) and offline aggregators (e.g., book publishers) are likely to see their share of value decrease due to the expansion of the online value chain. However, measured by the overall scale of this segment, these changes look to be minor. The main beneficiaries of the continued digitization of the book industry will be the rights owners (e.g., authors, rights holders). They should see significant growth of revenue coming from online players (+EUR 4.5bn) and only a minor decline (-EUR 160m) from the offline value chain.

From a reader's perspective, digitization, together with the globalization of the books market, created massive volume growth of available titles. While previously, the offer was limited to books available in local bookstore, nowadays, readers can source books online, bypassing local retailers, and sourcing from a wider catalog. The next wave of digitization of the Books segment has already begun and is led by subscription-based services enabling access to a large catalog for a monthly fee as well as materials from consumers-as-producers.

Figure 18: Books, by geography & channel, 2016 vs. 2020



Note: Absolute figures in charts represent incremental revenues until 2020, percentages show relative values to 2016 revenues
 Source: Arthur D. Little data and estimates

Consumer-as-producer: self-publishing gains traction

So far, publishers have been the gate-keepers of the industry, deciding which books reach the market and which manuscripts end up in a drawer. Today, a significant portion of books are self-published by authors through digital and online platforms. In many cases, these works are even written and published by the chapter, a stark contrast to the ‘waterfall’ type of book development seen in the past.

As previously mentioned, the publishing industry has experienced a significant transformation over the last decade, with the introduction of self-publishing being one of the most noticeable changes. The border between readers and writers has become blurry and resulted in an explosion of content. Authors are now free to choose whether to use publishing companies’ services, outsource to specialized freelancers and professionals, or rely on their own skills. Aside from the traditional publishing process, self-publishing authors (often called indie) can use online reseller services to distribute their manuscripts. Services such as Amazon KDP, Kobo or SmashWord allow distribution of e-books directly to consumers, while providers including Lulu allow consumers to order a printed copy of the manuscript.

Both of these new services have gained significant attention from traditional publishers and authors, as they require little or no upfront investment. Traditionally, due to high initial costs for editing, printing and distributing books, it was up to the publisher to decide whether a book would be released. These services have the potential to disrupt publishers’ business models. Printing services (e.g., Lulu) are able to be profitable working with very low volume per item and, generally, bear limited risk, as they print a book only after it has been sold to

a customer. Similarly, the online resellers allow authors to gain access to their publishing platforms (such as Amazon, Scribd, Kobo), resulting in no upfront cost for the author.

This new business models allows authors to cut significantly (sometimes even completely) initial costs in exchange for paying for all marketing and promotion efforts themselves. However, the absence of a preliminary filter from publishers is promoting the proliferation of independently published material with limited control on the overall quality.

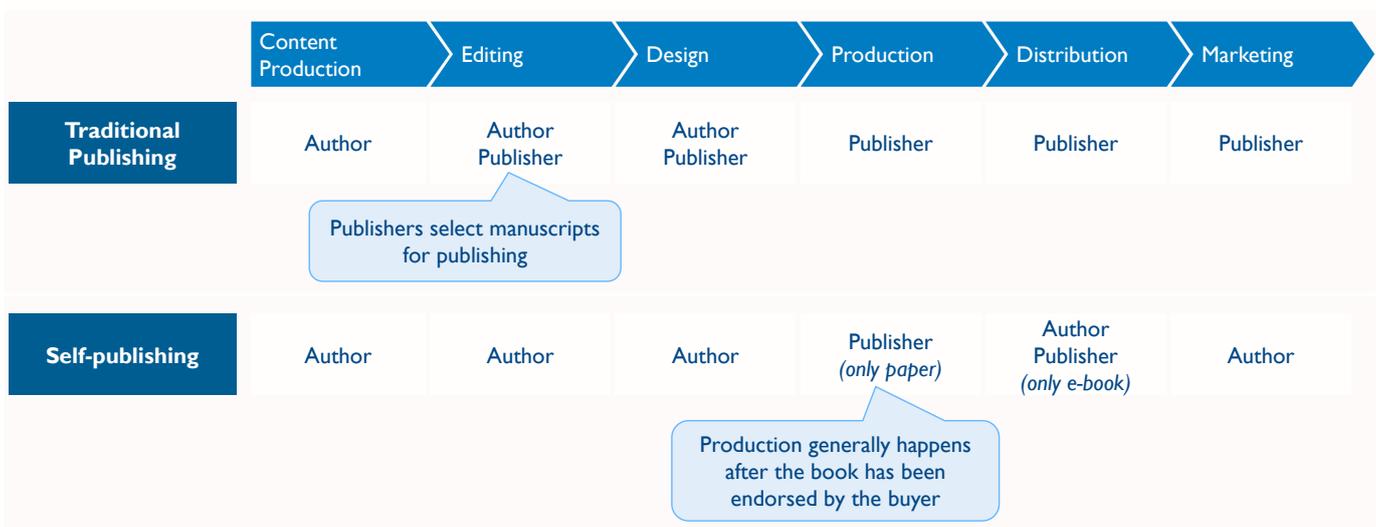
The growth of these new business models generated a change in industry focus, shifting from a few best sellers with high volume to a high number of books with limited individual volume. This is even more the case for online distributors, where authors, through digital platforms, are able to reach a large audience to market their product.

In 2016, the market share of self-published manuscripts is estimated to have been roughly 40% of sales by volume in the US and Europe, and the trend is growing at a fast pace. In January 2016, four of Amazon’s overall Top 10 Best Selling e-books were self-published indie titles.

However, the value share for a self-published manuscript is still low, in a range of 10-25%. This is a direct consequence of a lower cover price for self-published material compared to traditionally published books. Most indies are, in fact, priced between USD 2.99-3.99, whereas traditional published titles are priced at around USD 10.00/copy.

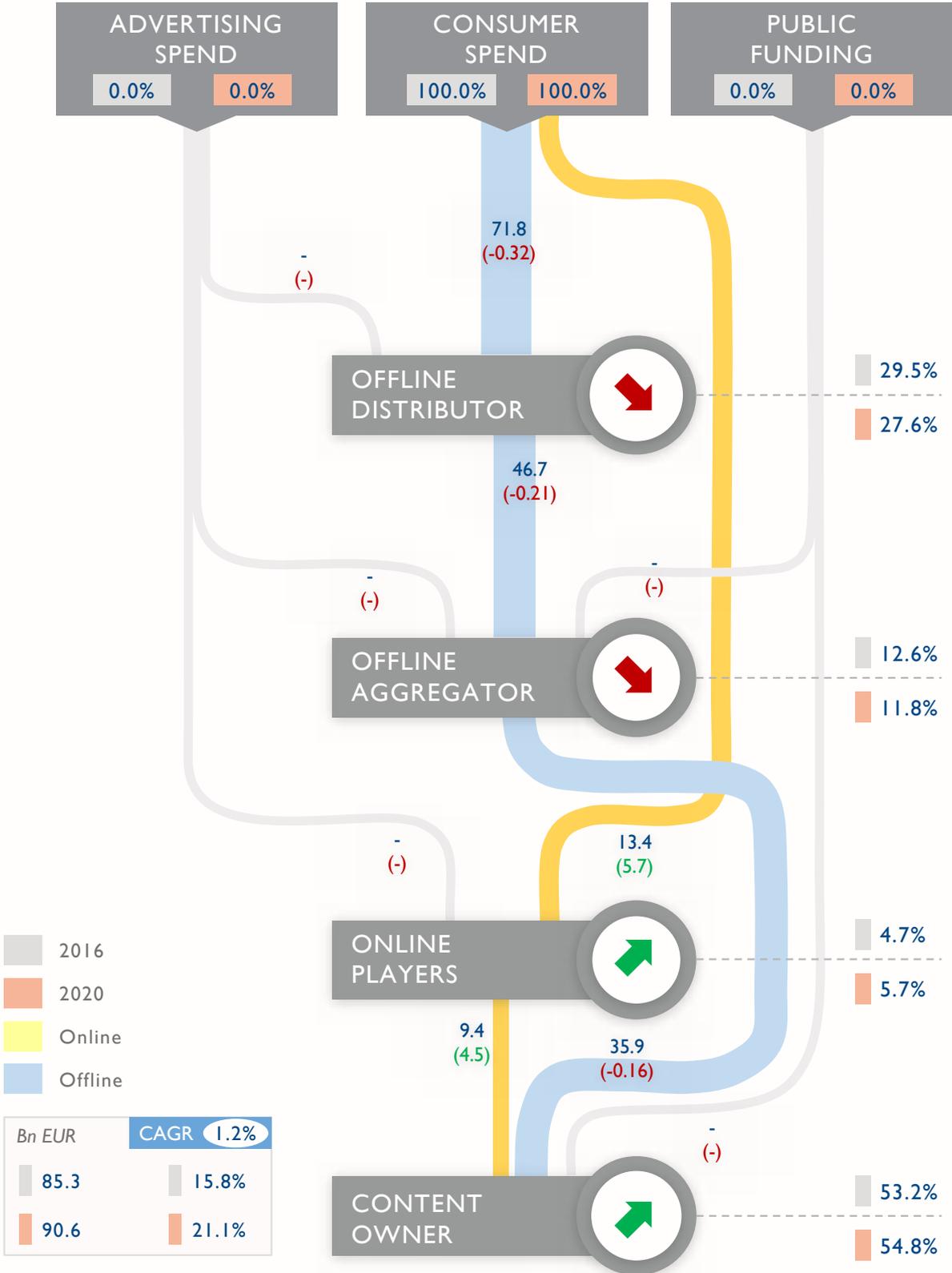
Compared to authors of traditionally published books, indie authors have significant advantages, as they can achieve:

Figure 19: Publishing process



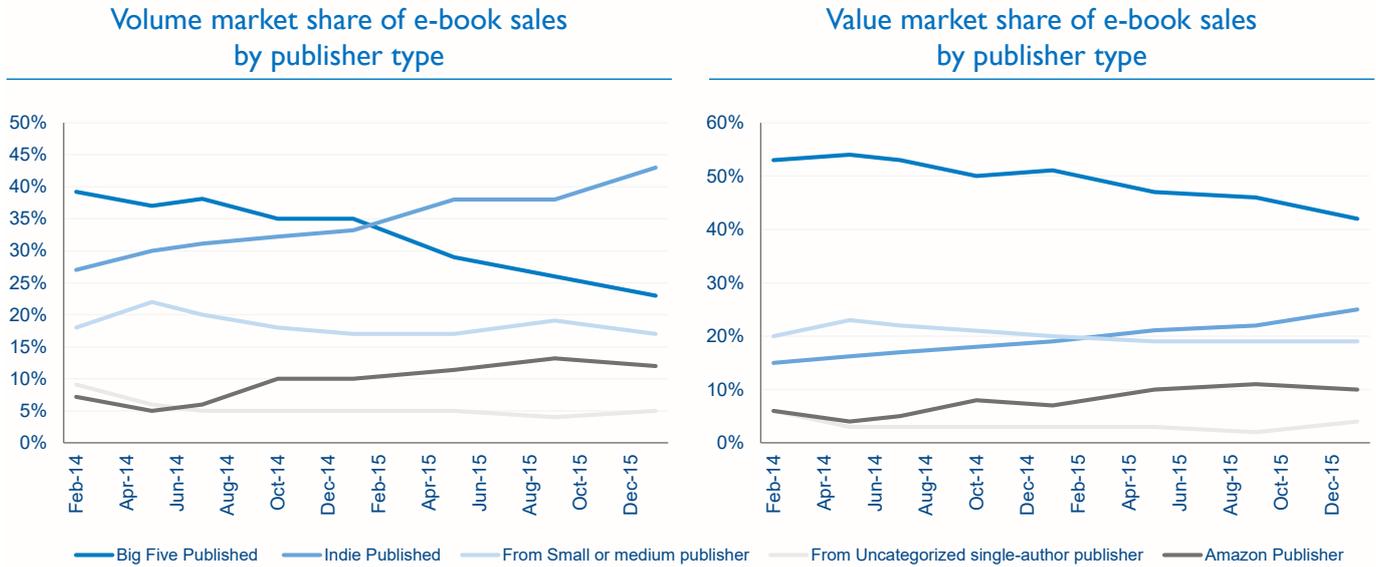
Source: Arthur D. Little

Figure 20: Books, Flow of Funds, all segments in bn EUR, 2016 vs. 2020



Source: Arthur D. Little

Figure 21: Market share of e-books in the US market in value and volume



Source: Author Earnings

Figure 22: Author's royalties



Source: Arthur D. Little

- **Faster time-to-market** – By the time the manuscript is completed and edited, authors can publish within a few hours compared to weeks or months at traditional publishers. If editing is needed after the book has been published, this requires only a few steps that can be taken directly by the author.
- **Full creative control** – Authors have full control over book pagination, covers and other layout and design details.

- **Flexibility in marketing and promotion** – Authors have total flexibility in their marketing strategy and can set the retail price for their manuscripts. It gives them autonomy in promotion and bundling of their book with other products (e.g., video, tutorials). For instance, Amazon's direct publishing platform allows authors to run limited-time discount promotions on their books.
- **Higher royalties** – Royalties paid by these services are generally higher than by traditional publishers. Indie publishers can obtain a share of the retail price varying between 35-85%, with 70% being the most common rate (Amazon and Scribd) if certain conditions are met. Traditional publishers offer between 7-25%, depending on contract terms.

Listening to a book is the new black

Audiobooks have been around for a while. They started out as an offering focused on visually impaired people, but recently the audiobook phenomenon has exploded. It currently is the fastest-growing segment in the publishing industry, growing at the same rate as e-books between 2011-2013. In 2015, almost 3.9 million audiobooks were downloaded compared to around 2.5m e-books read. Two of the main reasons for audiobooks' success can be found in price and availability. In the early days, in order to buy an audiobook, consumers had to go to the closest retailer to buy a cassette or CD that could cost up to USD 50. At that time, it was significantly cheaper and more convenient to buy the paperback version rather than the audiobook. However, both issues appear to have been addressed: audiobooks can now be

downloaded from the Internet and played on any device; prices for audiobooks are now in line with those for paper editions. As an illustration, physical audiobooks (audio and MP3, physical CDs) only accounted for about 5% of the total audiobooks sold by Amazon in 2016. Another reason for the increase in popularity of audiobooks can be found in today's lifestyle, with consumers always being on the move. Due to this, some people feel as they don't have time to sit down and read. Therefore, they listen to audiobooks while they commute or exercise or do their weekly shopping.

As of 2016, the size of the global audiobook industry was estimated at ~EUR 4bn, and it registered rapid growth compared to the previous year regarding both production and sales. It is estimated that last year more than 50,000 audiobooks were released globally. A report by the American Association of Publishers estimated a 43% rise in audiobook sales in August 2015 compared to the same month of the previous year.

Growth is also driven by publishers that are investing more in the audiobook business, increasing their focus on the narrators. Several companies offer lucrative financial arrangements to narrators in order to secure famous actors for their products. Among these, Audible (an Amazon company) has an extensive track record of engaging stars to record its audiobooks. In a recent interview, the company stated that it is working to improve the overall customer experience and raise the quality of audiobook performance. Aside from famous actors, up-and-coming young actors from the Juilliard School, the Yale School of Drama, and the Stella Adler and other acting schools, where Audible offers narration workshops, are becoming involved in the business.

Furthermore, audiobooks are not exempt from the self-publishing phenomenon, despite the fact that, compared to the text version, this form of media has more difficulties associated with it. Among the various problems of self-publishing audio is the ability of an indie creator to assemble a quality product with an attractive narration. Although creating an audiobook is easier today than it was in the past, it still takes quite a bit of time and money (around USD 5,000/title) even for authors who write copiously and sell well. This situation led several indie authors to postpone the production and distribution of the audio version of a publication.

Consumption moves from ownership to access

Inspired by other media segments (in particular, music and home video), some players in the book publishing industry started to transform the traditional business model. Amazon and Scribd, among others, began to offer subscription services to their users. As with the model used in the music industry, consumers are being given the option to buy single books or pay a monthly fee to access a large catalog of books (e.g., Spotify, Deezer). This model is established in other industries, but had until recently not been used by the publishing industry.

This model is clearly appealing for readers, having three substantial benefits:

- **Cheaper price:** Readers can enjoy as many books as they like (unless limited by the provider) without incurring additional costs. Considering that subscription cost is at par with a single paper book, it is clear that the model is convenient.

Figure 23: Consumers' and Authors' perspective

		Kindle Unlimited	Scribd
Consumers' Perspective	Subscription	USD 9.49/month	USD8.99/month
	Limitation	none	3 books + 1 audiobook
	Library size	>1m	~150k
Authors' Perspective	Book type	Traditional publisher & self-published	Mainly traditional publisher
	Royalties scheme	$Amazon\ KU\ fund \times \frac{Total\ Author's\ Page\ read}{Total\ page\ read\ on\ Kindle\ Unlimited}$	60% of list price for books where more than 30% of pages are read
	Comments	<ul style="list-style-type: none"> ■ Amazon developed a standard mechanism to define a per page value to authors ■ Authors receive a variable amount based on actual readership ■ Authors perceive the system incentivizes longer books 	<ul style="list-style-type: none"> ■ Authors receive compensation similar to the traditional sales model ■ Authors perceive the system incentivized shorter books

Source: Arthur D. Little analysis

- **Facilitate discovery:** Readers can discover new authors and books for free, increasing awareness of less well-known authors.
- **Flexibility:** Readers can unsubscribe from the service at any time, with no restrictions.

From the authors' perspective, while this allows less well-known authors to address a potentially larger audience, it might impact on royalties received (depending on the service provider).

The usual dilemma between content producers' profit and users' benefit has been solved with two different approaches. Amazon, leveraging on its position in the market, with the launch of its Kindle unlimited service, imposed a new royalty scheme for authors. Writers involved in the program receive compensation based on the actual number of pages read by subscribers. Other services, such as Scribd and Oyster, are still using a more traditional approach for royalties. These services pay the authors the full royalty only when more than 30% by page count of a book is read. This mechanism has a smaller impact on authors, but leaves the provider with the risk of paying more than the subscription fees received. To minimize this risk, Scribd introduced a cap to the books a subscriber can read per month. Authors are debating the fairness of the two mechanisms, as each one has pros and cons. While the former seems to be fairer, authors have no certainty on the royalties they will receive, as it depends on the pool size and the total number of readers. The latter appears to be more traditional, but limits the advantages of the subscription model, as users might not be willing to use part of their book allowance for discovery.

As mentioned, traditional publishers face a significant transformation in the industry led by a shift towards digital consumption and the advent of new business models that could shake up the role traditional players play in this segment. The role will likely evolve, margins might get squeezed, and the relevance of publishers will most likely decline as self-publishing

volumes ramp up. However, we expect that brick and mortar retailers and paper books will still be around for a long time.

Traditional publishers need to factor in a reduction in their value share and, consequently, their margins and prepare for this through different actions. Publishers are aware that content is the key differentiator between them and indies, and that, through their organizations, they have access to a large network of authors on which to leverage to secure a competitive advantage. A clear example, among others, can be seen in the recent actions taken by Pearson, which decided to focus on the traditional educational business and divest other assets. Pearson stated that it is currently 100% focused on the education business. Other publishers are trying to leverage on their resources and enter the self-publishing industry, offering services for indies. Penguin, for instance, made a short diversion into the self-publishing business through the acquisition of Author Solution, but subsequently sold it within few years (presumably at a loss). This is a clear illustration that publishers trying to enter the self-publishing industry need to find synergies across the two businesses and carefully define their business models. Scandinavian media group Bonnier launched Type & Tell, which offers a comprehensive set of services to independent authors, spanning the entire book production process. This has enabled Bonnier to gain a foothold in the self-publishing space, spot key talent early, and increase utilization of existing production facilities.

In any case, pressure on margins will push further consolidation of the industry, with players expanding their footprints globally and locally to gain weight and critical size to attract the best-selling authors and be effective in marketing and distribution. For instance, Hachette moved from a global publishing market ranking of 13th to 3rd between 2000-2016 by successfully acquiring several medium-sized publishers in different geographies (Spain: Anaya; UK: Hodder Headline; US: Time Warner Books).

6. TV & Video – Content is king after all

TV & Video is by far the largest media segment, with revenue deriving from linear Pay TV subscriptions, free-to-air TV advertising, cinema box office, cinema advertising, public service broadcasting fees, and all forms of physical home video (DVD and BluRay retail and rental) and online video services (Subscription VOD, Transaction VOD, Advertising-funded VOD).

Flow of Funds: offline distributors being squeezed while content owners are winning

In 2016, TV & Video accounted for EUR 452bn in revenue globally, with only a minor share of the segment’s overall revenue (6%) coming from online products and services. In all geographies, the offline revenue (i.e., free-to-air advertising, linear Pay TV subscriptions, physical media, cinema box office) will see further growth, with the strongest absolute contribution coming from Asia Pacific (+EUR 32bn through 2020) driven by Pay TV penetration and growth in TV advertising. In contrast to all other media segments, TV & Video will see even higher offline than online growth through 2020. Online sub-segments—in particular, SVOD—could see a total of EUR 14bn of incremental revenue, potentially reaching a total of EUR 41bn by 2020, but only accounting for 8% of total TV & Video revenue. This means that this segment will remain the most traditional, i.e., offline, of

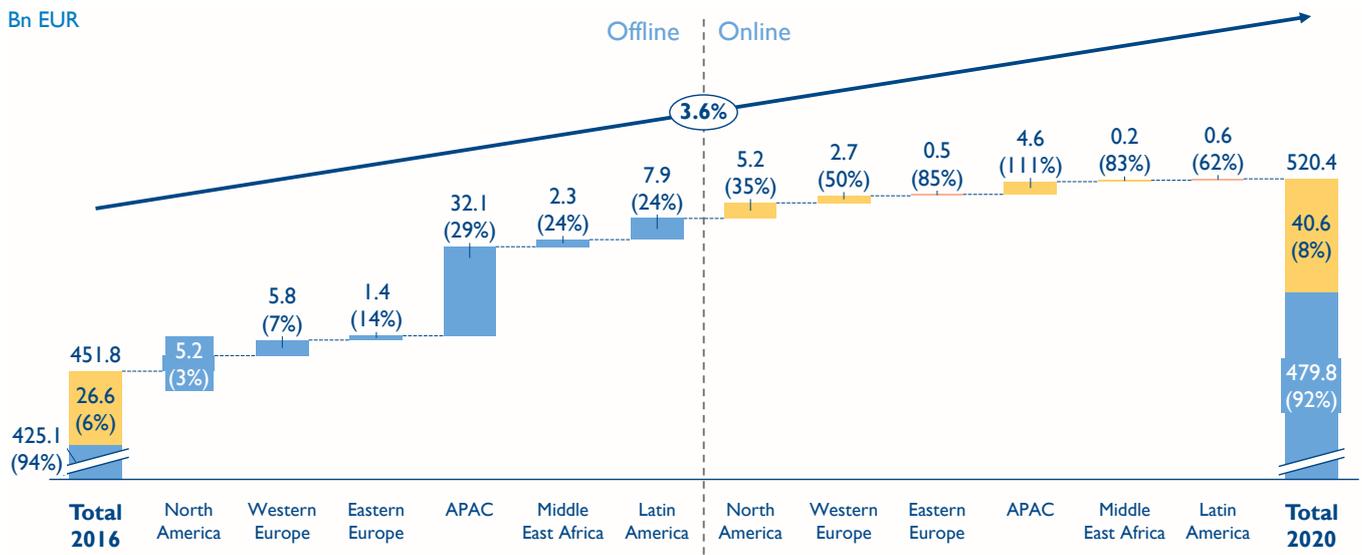
all media segments in terms of revenue. This is in stark contrast to the nearly exclusive focus of news articles and industry conferences on the online players in this segment.

The most dynamic regional online markets in TV & Video will be Asia Pacific, Eastern Europe and the Middle East & Africa, all of which are expected to double today’s market value through 2020. Despite already-high household penetration rates for SVOD services in North America, this geography will also see significant further value growth (+EUR 5bn through 2020), rather than volume growth.

Overall, the relative importance of the sources of funds will stay fairly stable going forward. Some geographic differences exist, such as Western European markets showing a significantly higher share of public spending (i.e., public service broadcasting fees, subsidiaries for TV and movie production), representing ~22% of total sources of funds in 2016. In the rest of the world, however, public spend was around 6% of total funds in the TV & Video segment.

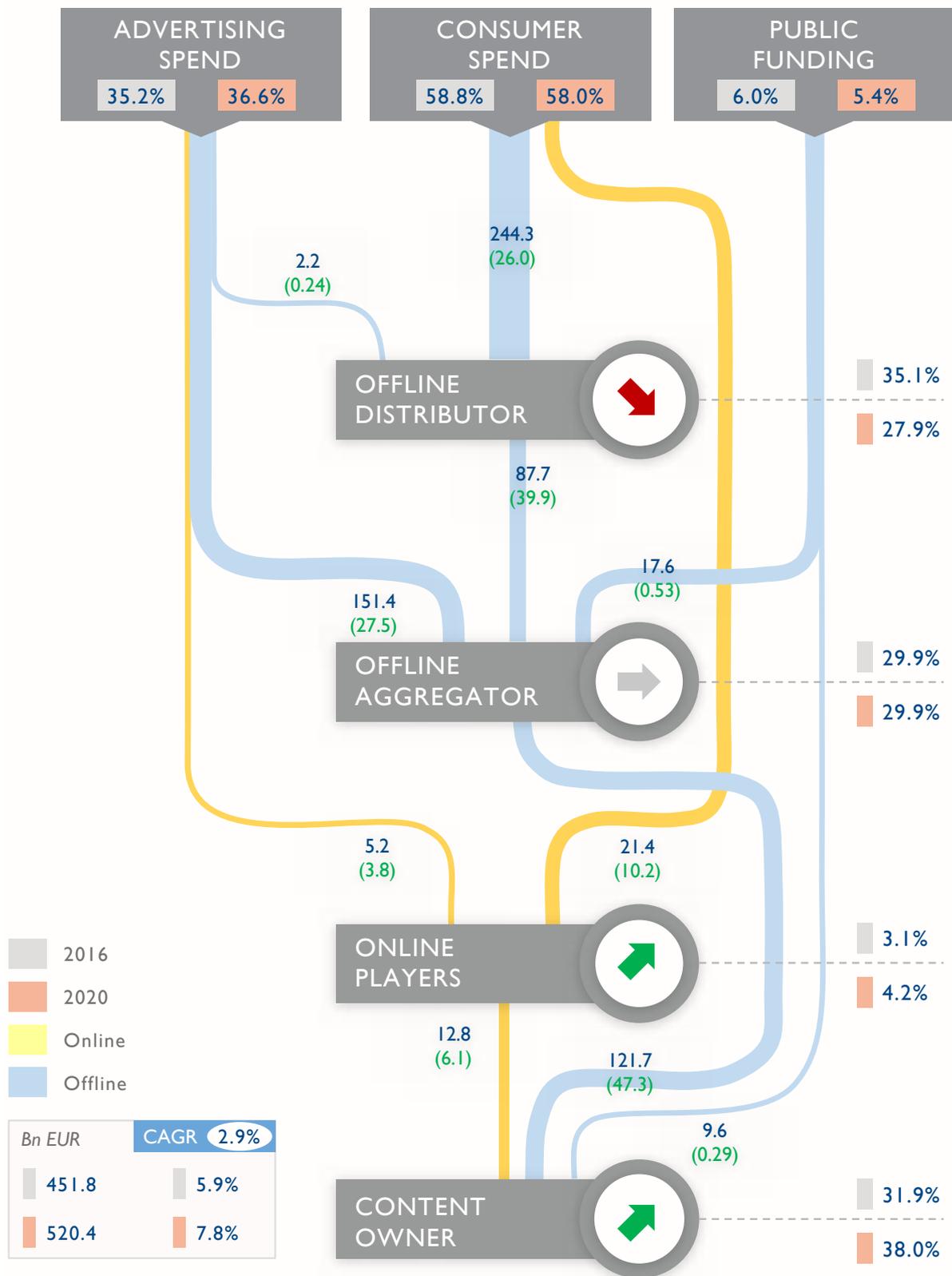
In the offline value chain, the traditional distributors (e.g., DVD/BluRay retailers, box office, Pay TV platforms) will be hardest hit going forward. Their share of value capture will decline by 7 percentage points, which amounts to a substantial sum given the overall size of the industry. Offline aggregators (e.g.,

Figure 24: TV & Video, by geography & channel, 2016 vs. 2020



Note: Absolute figures in charts represent incremental revenues until 2020, percentages show relative values to 2016 revenues
 Source: Arthur D. Little data and estimates

Figure 25: TV & Video, Flow of Funds, all segments in bn EUR, 2016 vs. 2020



Source: Arthur D. Little

TV channels, physical media publishers) will largely be able to preserve their positions in the value chain. Online players will see significant incremental growth (+EUR 14bn through 2020), but will be able to increase their share of revenue and value capture only slightly through 2020. The industry is currently, and should be in 2020, largely dominated by linear Pay TV revenue and TV advertising. Big winners of the digitization of the value chain are content owners and producers (e.g., Hollywood studios, sports rights holders, TV producers, artists) as they will significantly increase their share of value capture (+6 percentage points through 2020). They look likely to benefit from more demand for the same product (i.e., from offline and online value chain) and the growing polarization of the content market into premium and non-premium.

TV & Video is all about (vertical) scale

As can be seen in the figure below, profits closely correlate with scale in the TV & Video segment, due to the largely fixed-cost nature of content and platform. This has resulted in considerable consolidation within each value chain step (e.g., NBCUniversal acquired DreamWorks, Scripps Networks acquired TVN, SPTI acquired Film1, Rovi acquired TiVo).

More recently, major industry players have been striving for end-to-end vertical integration and acquiring assets in adjacent value-chain steps. Liberty Global has followed the most comprehensive vertical integration strategy. Since 2014, the cable operator group has acquired multiple assets in content production and aggregation:

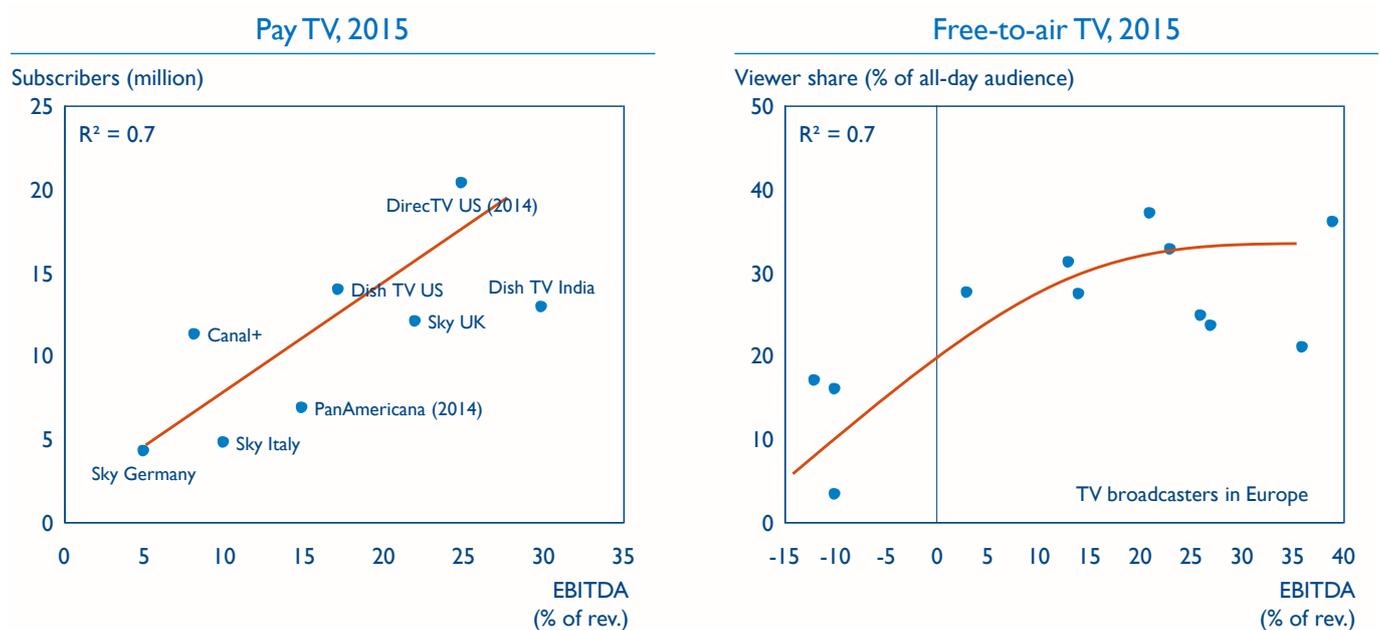
- all3media - one of the world's largest TV entertainment content producers;
- deVijver Media – a free-to-air TV broadcasting & production group in Belgium;
- TV3 and UTV – the two largest free-to-air TV broadcasting & production companies in Ireland;
- ITV – the UK's largest commercial TV channel group (albeit a minority ownership position only).
- And its sister company Liberty Media acquired the Formula One Group – owner of the world's most watched car racing series;

AT&T has followed a similar strategy, first acquiring DirecTV, thereby significantly strengthening its Pay TV distribution business. An acquisition of Time Warner would add substantial content production capabilities (i.e., HBO, Turner Broadcasting, Warner Bros.).

Deep-pocketed Pay TV new entrant beIN has moved rapidly from an initial focus on aggregation of premium sports rights to entering international distribution (acquiring leading Turkish Pay TV platform Digiturk) and most recently entertainment content production (by acquiring Hollywood studio Miramax).

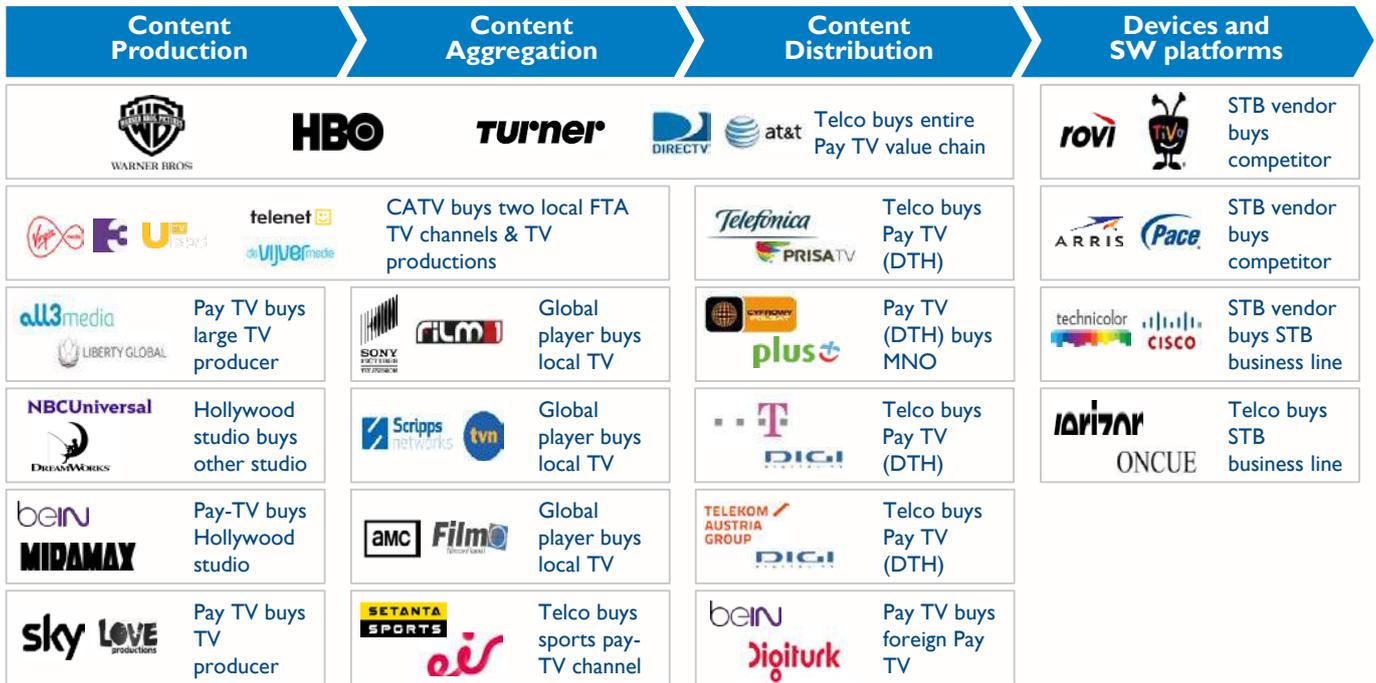
Lastly, organic vertical integration has also started. Major content producers go direct-to-consumer and offer own premium movies and TV series on dedicated online platforms. Content owners going direct to consumer represent a threat for online players (or content aggregators), since they start

Figure 26: Profit vs. scale in TV & Video



Note: R² is a measure of accuracy of a trendline, with 1 being a perfect match
 Source: Company investor relations, Arthur D. Little analysis

Figure 27: Exemplary M&A along the TV & Video value chain

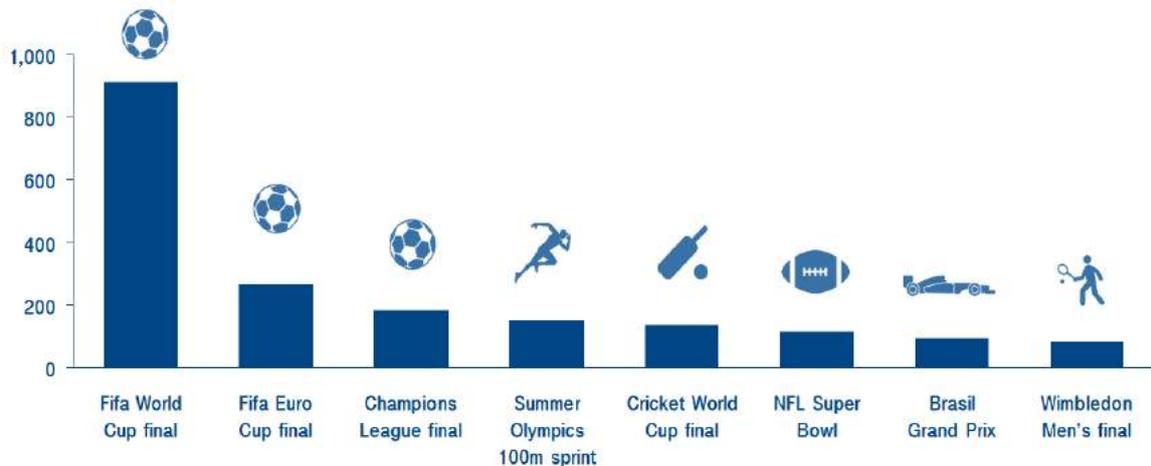


Source: Arthur D. Little

competing on what was their key playing field. Services such as HBO Now, CBS All Access or Noggin (by Viacom) offer their own premium content in the typical online success model: high flexibility, reasonable pricing (even though HBO Now’s USD 15/month is double what Netflix charges), and multi-device availability. Direct-to-consumer digital distribution represents a challenge for traditional players, too, since the streaming services include prime titles from major studios and compete

directly with cable and satellite providers, targeting ‘cord-cutters’ and ‘cord-nevers’ (i.e., those players that have remained beyond the reach of even the most successful Pay TV channels). However, from a consumer’s point of view, direct-to-consumer digital distribution is rather complementary to that of the main aggregators (traditional Pay TV and/or OTT platforms), as services like HBO Now or CBS All Access individually only offer a sub-set of all available premium content.

Figure 28: Millions of viewers, global per year



Source: Deltatre, Arthur D. Little

(The) Sky is the limit for premium sports costs

Live sports is still the central component of worldwide Pay TV strategies aimed at gaining and retaining existing customer bases, which resulted in exploding costs for securing broadcasting rights. Acquiring premium sports rights is the ‘weapon of choice’ for successful recent Pay TV new entrants such as beIN Sports in France and the Middle East, as well as multiple European telecom operators (e.g., BT, Deutsche Telekom Group, Orange Group, Türk Telekom, SFR).

Globally, soccer is king, but some sports have significant value in certain geographies (e.g., cricket, the NHL, NBA and NFL).

As an example of how important live sports has become to traditional Pay TV, we look at the deal NASCAR struck with Fox and NBC: despite ratings falling by a third in the past few years and a fan base in decline, stock car racing has increased its average annual TV broadcasting rights income from USD 560m (pre-2012) to USD 820m through 2020 in this landmark 10-year deal. One of the key components of this live sports phenomenon is advertising: advertisers particularly appreciate, and pay a premium for, live and engaged audiences, as when people watch live they can’t fast-forward through commercials. However, according to experts, the primary reason for NASCAR’s ability to achieve price gains is that its content forms a crucial part of Fox Sports 1 and NBC Sports Network’s programming, driving subscription revenue. And, this is valid for most Pay TV worldwide. Another prominent example of how live sports rights costs can be driven up is offered by the NFL’s “Thursday Night Football” (“TNF”) package, which was gobbled up by CBS and NBC last February for USD 450m, a massive increase over the reported price paid for the package in 2015 by CBS of just under USD 300m.

The trend is not much different in Europe, and the battle for securing live sports rights has resulted in price hikes beyond 60% of previous rights deals in some of the major markets (e.g., Germany, the UK, Spain). The renewal timeline of premium sport content, typically every three-to-four years, offers the possibility to acquire content in the short and mid-term, and pitches incumbent rights holders against potential challengers. Telecom operators have become a key driver for bidding competition at recent rights tenders. Across Europe and Asia, they have started to challenge existing premium Pay TV operators as they have built up IPTV subscriber bases that begin to justify an own investment in premium sports rights.

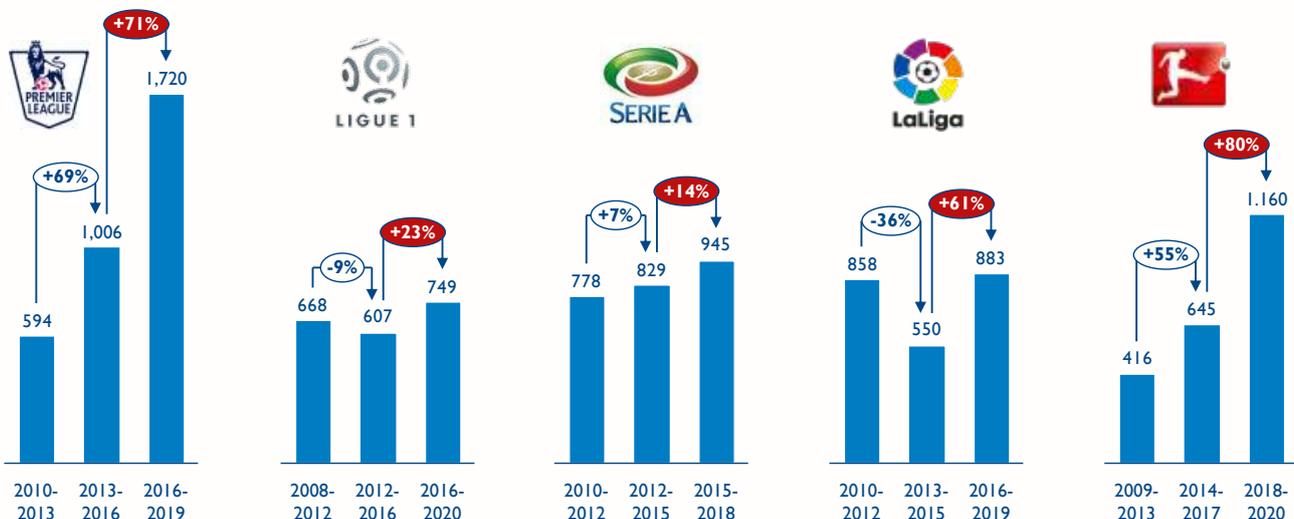
In this battle for differentiation, telecom operators have proven to be instrumental in the push towards price increases at recent sports tenders. Typically, they opt for the main international soccer leagues first (e.g., the Premier League, LaLiga, Serie A, Ligue 1, Bundesliga), followed by an acquisition of Champions League rights, and only lastly looking at domestic league rights.

The steep price increases for premium sports rights thus look set to continue, as incumbent rights holders are ready to ‘go all-in’ in retaining these. This has been illustrated by the last Bundesliga auction in Germany (summer 2016), in which Sky Germany was willing to pledge more than half of its annual revenue to secure near-exclusive domestic broadcasting rights (93% of all live matches).

After soccer, motorsports is the second-most-important premium sports category. Liberty Media, sister company of Liberty Global, has made a strong push into this market through its EUR 3.9bn acquisition of Formula One group, the entity responsible for the promotion of the FIA One World Championship, and the owner of the sport’s commercial rights.

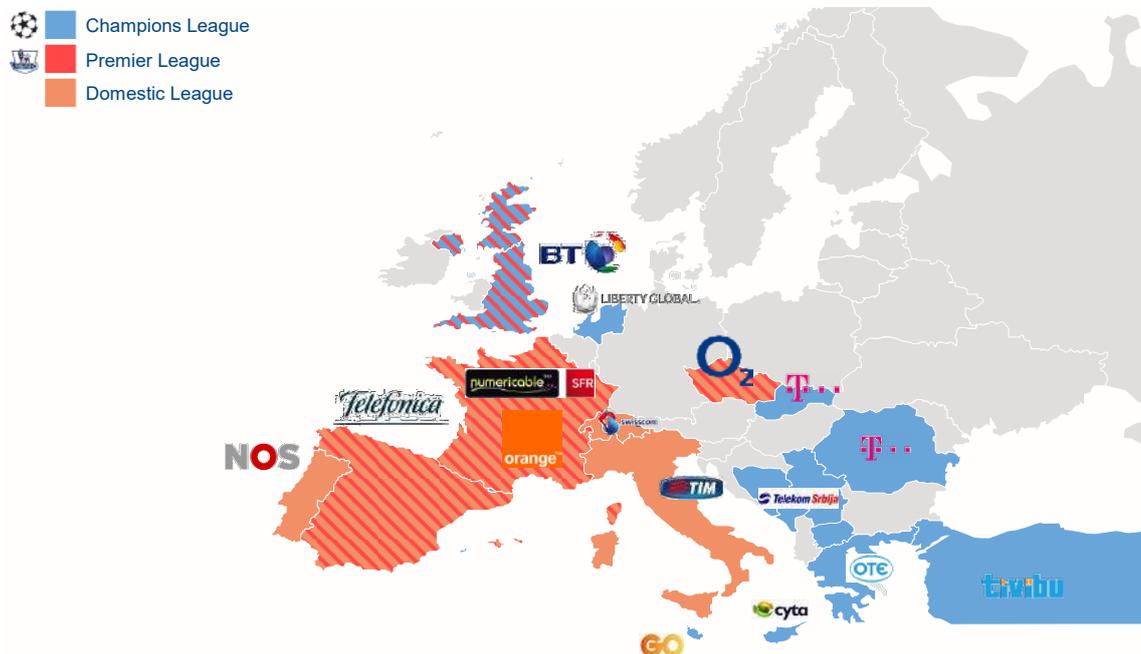
Figure 29: Value of domestic broadcasting rights

Million € / season



Source: Press statements, Arthur D. Little

Figure 30: Telcos owning exclusive soccer broadcasting rights, 2016



¹ Operators owning at least part of the season's games or through at least one platform (DTH, IPTV, DTT, mobile devices)
Source: Arthur D. Little

This continued high competition for premium sports properties and the ultimate pricing power of these sports leagues might lead to the creation of 'original' sports leagues by traditional and online Pay TV players. Netflix Chief Content Officer Ted Sarandos stated that it could one day get into the live sports game, but only if it owned and created the events itself. Similarly, other Pay TV operators are looking at the development of regional 'champions leagues' in niche sports such as martial arts, ice hockey, and extreme sports.

Fragmentation in entertainment content continues

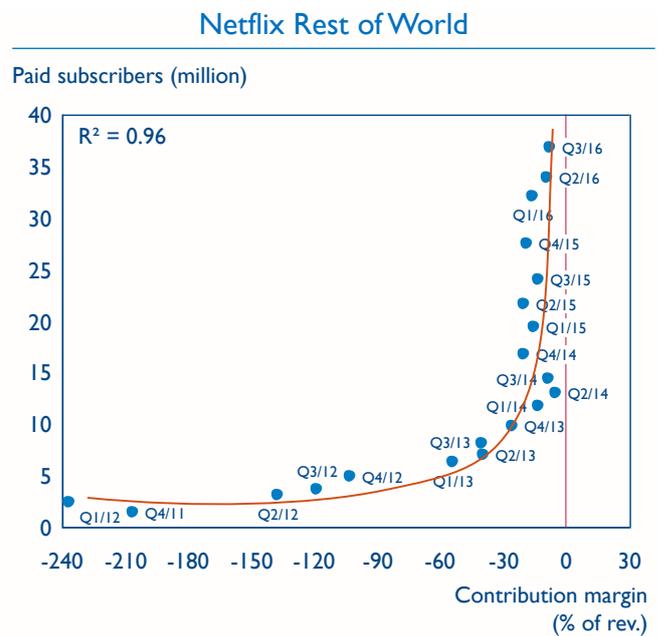
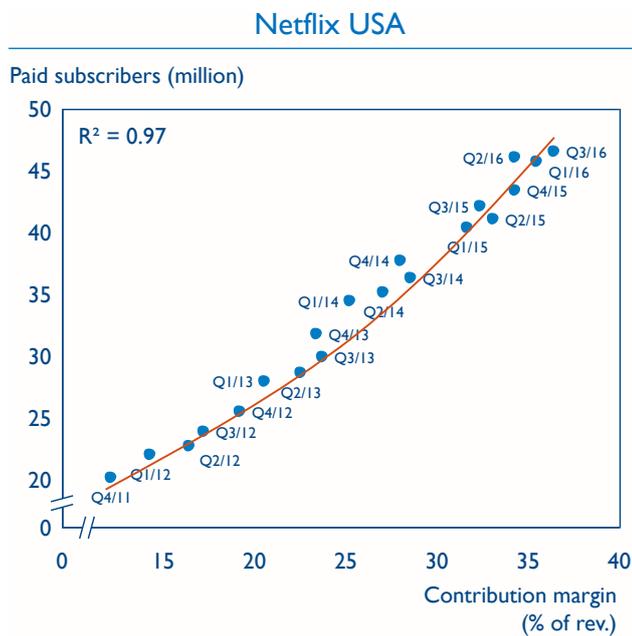
As part of the trend of vertical integration in the TV & Video value chain, an increasing number of distribution players have started to enter content production. This was spearheaded by Netflix in late 2012, with the launch of Lilyhammer. Early successes led to a multitude of other players putting toes in the water to make their own original content investments. In particular, for online

Figure 31: Original programming initiatives

	Plan/initiative	Execution
	<ul style="list-style-type: none"> ■ Increase content ownership from currently 20% (2015)¹ ■ Production of local content (TV shows/ series with international relevance) 	<ul style="list-style-type: none"> ■ Own production centers and partnerships with TV production studios and TV networks such as HBO, Showtime, etc.
	<ul style="list-style-type: none"> ■ Announcement of multi-territory exclusive content partnership with All3Media (already a 50% subsidiary) ■ Production of four original drama series 	<ul style="list-style-type: none"> ■ All3Media as own content producer ■ Commissioning jointly between Group function and Virgin Media as lead entity
	<ul style="list-style-type: none"> ■ Production of 8-10 series per year ■ Production of local content (TV series with LATAM relevance) 	<ul style="list-style-type: none"> ■ Telefonica Studios as own content producer ■ Partnership with local studios
	<ul style="list-style-type: none"> ■ Invest 100 mn EUR in original content ■ TV series (from animation to documentary) – quality entertainment series like Korean version of 'House of Cards' 	<ul style="list-style-type: none"> ■ N/A
	<ul style="list-style-type: none"> ■ Focus on lower-budget episodes ■ Switch production from movies to TV drama 	<ul style="list-style-type: none"> ■ Orange Studios as own content producer

¹ of its content spend on basic entertainment channels
Source: Public information, IMDb, Arthur D. Little analysis

Figure 32: Profit vs. scale – Netflix



Note: R² is a measure of accuracy of a trendline, with 1 being a perfect match
 Source: Investor Relations, Arthur D. Little analysis

players, this has proven to be an attractive strategy, as it results in a number of important benefits:

- 360° global rights that allow rapid expansion of their service;
- exclusivity of their entertainment content at reasonable cost;
- a better negotiating position with existing content producers, as they have a credible threat to cut purchasing volumes in the mid- to long term; and
- a fixed cost base that can be amortized over a rapidly growing global subscriber base.

Today, traditional Pay TV operators also see original content as a viable strategy to achieve content differentiation and exclusivity in entertainment content. In particular, the soaring cost of premium sports appears to have had a positive impact on original content investment. Thus, after the broadcasting of original content with global appeal (e.g., House of Cards, Transparent), the current wave of productions is increasingly specific to local or regional markets. Focus is on TV shows and series (comedies and dramas), as this content increases customer stickiness and higher frequency of usage, both important drivers of customer lifetime value. Among others, a number of broadband/IPTV operators have announced ambitious original programming initiatives recently, as can be seen in the figure above.

SVOD: still first to scale wins, but window of opportunity closing

In our 2012 report, *OTT – first to scale wins* (www.adlittle.com/ottvideo), we described the competitive dynamics in online video as a race to achieve global scale. That report concluded that strong national players would still have a chance to compete against global players and grab a sizeable portion of market share in their specific territories, as rights were sold by territory and mainly on a non-exclusive basis.

Four years on, SVOD is more than ever before a scale business. Since 2012, Netflix has added 60m paid subscribers and tripled its streaming revenue. SVOD is mainly a fixed-cost business in content (through minimum guarantees and original programming) as well as technology (platform cost). Thus, profitability is directly linked to subscriber growth (see figure below). With the aggressive investment in original programming, Netflix, Amazon and others further increase the fixed-cost nature of this business. In June 2016, Netflix confirmed its lead by expanding business globally, except China, Syria, Crimea and North Korea. The company’s strategy is now to drive penetration in its markets of operation, essentially through localization of global product (subtitling or dubbing where necessary; local content). The figure below also illustrates that once a scale position is reached, as in the US market, the SVOD model has an attractive profitability profile (>35% contribution margin) at a USD 7.99 price point. The shape of the rest-of-world curve

suggests that Netflix reinvested any profit directly into further global expansion.

The Achilles heel of global OTT video players is the uniformity of their product as they seek to drive subscriber growth with an easy-to-use, standardized global product. Local/regional players still have one last fighting chance based on building more differentiated services that, for instance, include linear streaming, relevant local sports rights, or follow innovative business models.

The attractiveness of the content line-up is one of the core differentiators. A winning content library combines a large overall number of titles, comprised of hit U.S. TV series, as well as top-rated local TV series and movies. TV series in particular are important, as they reduce churn, which in most cases is in the range of 40-60%. At Netflix, this content type thus accounts for two-thirds of overall viewing and of overall content assets. Secondly, the content line-up should be quite recent.

Vivendi's watchever service in Germany perfectly illustrates this, as its overall catalog size was significantly smaller than that of competitors and the average age of titles was 30+ years old. As a result, the platform was not competitive against Netflix and local market leader Maxdome, and Vivendi decided to stop its loss-making service at year-end 2016.

The second major competitive differentiator is distribution. Besides Pay-TV operators, any player that has a large captive subscriber base (e.g., mobile operators, e-tailers, print media groups) is well placed to be successful in SVOD in the mid- to long term. However, these companies typically lack content

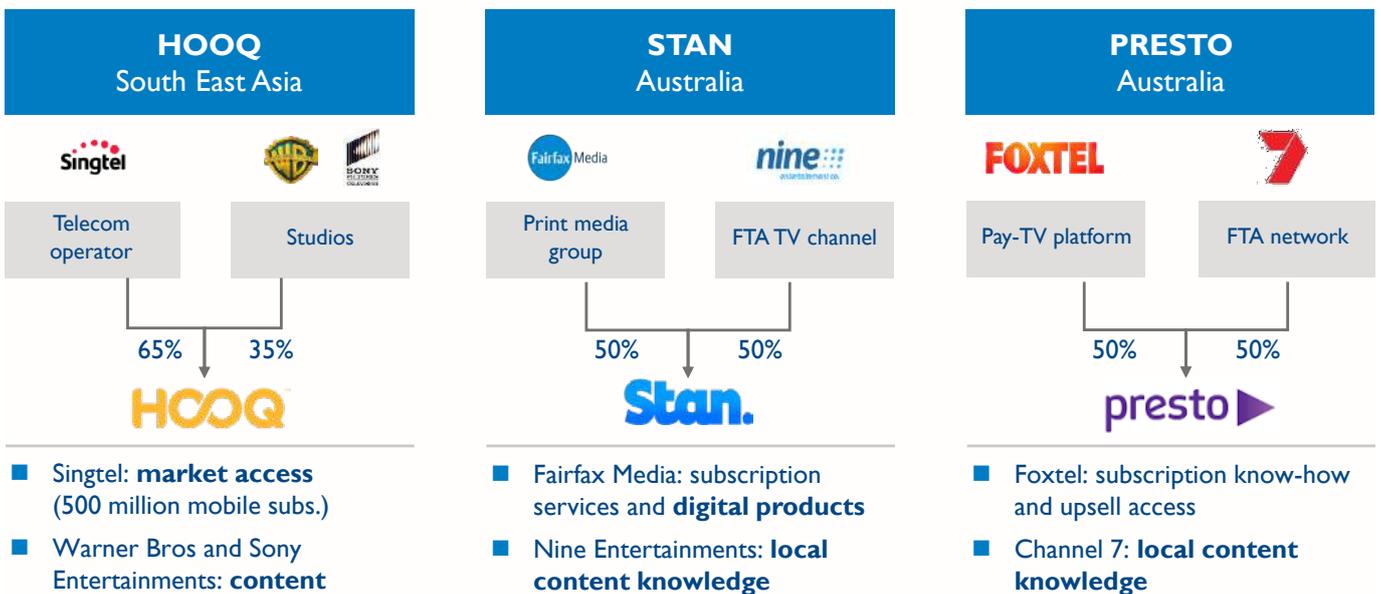
procurement capabilities, digital marketing skills, and the technical platform operation abilities.

Thus, an increasing number of content owners and players with captive subscriber bases are joining forces in SVOD joint ventures to increase the odds to achieve economies of scale. The most ambitious project is HOOQ, a joint venture between Warner Bros., Sony Pictures and pan-Asian telecom operator group Singtel. The basic logic is to combine content and distribution strength. The service currently operates in the Philippines, Thailand, India and Indonesia, with a population footprint of over 1.6bn. In 2016, HOOQ also launched an attractive advertising free offer allowing customers to access the pilot episode of over 250 TV shows for free. Furthermore, it offers monthly and even weekly subscriptions for as low as USD 1.4 to drive customer acquisition.

Broadband operators in general are well placed to enter the SVOD race, given their superior distribution capabilities (i.e., upsell to millions of subscribers, bundling, zero-rating of traffic, operator billing, large-scale local marketing spend). Similar to Amazon's strategy to cross-subsidize its SVOD service Prime Instant Video with the e-commerce margin, telecom operators could choose to absorb the content cost as part of their substantial subscriber acquisition cost budgets (SAC). This also explains the avid interest of global OTT players such as Netflix in entering into distribution agreements and, ideally, even getting deeply integrated into their Set-Top-Boxes.

A number of other interesting cooperations exist, notably in Australia, where two local joint ventures formed before the market entry of Netflix. In Stan, a local print media group and a

Figure 33: Examples of SVOD joint ventures (not exhaustive)



Source: Arthur D. Little

Figure 34: Examples of niche SVOD services

Sport-centric	Community content	Reality TV / live shows	Music	Documentaries	Age groups / shared interest	Comedy
<ul style="list-style-type: none"> ■ DAZN ■ WWE Network 	<ul style="list-style-type: none"> ■ Eliation ■ Lebara Play ■ DramaFever 	<ul style="list-style-type: none"> ■ Hayu ■ Red Bull TV 	<ul style="list-style-type: none"> ■ MTV ■ Wiener Staatsoper Live 	<ul style="list-style-type: none"> ■ Curiosity-Stream ■ Yaddo 	<ul style="list-style-type: none"> ■ go90 ■ Nickelodeon ■ Stylehaul 	<ul style="list-style-type: none"> ■ Comic-Con HQ
						

Source: Arthur D. Little Bold elements: detailed case studies available

local free-to-air TV channel cooperate, with the print media group driving distribution and the TV broadcaster being responsible for content procurement. Another example is Presto, the SVOD service of leading Pay TV operator Foxtel and a free-to-air TV broadcaster. Also in Australia a content player joins forces with a company that has a large captive subscriber base for upsell. The two local players are said to hold around 40% market share, with Netflix having the remaining 60%.

Besides the general entertainment SVOD market that Netflix, Amazon and all major Pay TV operators compete for, a new breed of niche OTT player has started to emerge. Its focus lies in niche content and the business logic is economies of scope, not economies of scale. More of such services are expected to emerge over the next few years, and it is likely that a number of YouTube MCNs will evolve towards becoming SVOD players to better monetize their substantial and still growing viewerships.

TV advertising is ripe for disruption

TV advertising spend is a EUR 157bn opportunity today (vs. EUR 189bn in Pay TV), expected to grow to EUR 188bn by 2020. However, tools and players in the TV advertising value chain haven't changed much since the 1980s.

Significant legacy challenges exist in this setup, exposing the industry to potential for disruption. The majority of advertisers have limited awareness of the inaccuracy and inconsistency of the TV advertising mechanisms (despite some auditing of media agencies initiated in recent years).

Media agencies act as intermediaries, not only having leverage on the buy- vs. sell-side, but also providing all relevant results of ad campaigns. We would note that in the majority of markets, audience panels were designed in the 1980s.

Advertising brokers have limited ability to measure cross-platform and time-shift viewership and data quality is poor. In recent years, many broadcasters have experienced deteriorating margins and are under pressure to enhance programming in order to attract a higher share of ad spend.

Pay TV and telco operators are well-positioned to grab a sizeable share of this market, due to their unique data and positions in TV:

- Pay TV and telecom operators have access to unique viewership data (e.g., in set-top boxes, broadband networks) which is differentiating vs. existing players' data. With large a captive subscriber base, they have customer touchpoints and knowledge of behavior across platforms and devices.
- Pay TV and telecom operators spend significant on TV ads themselves (typically Top 10). They can team up with other significant spenders to move the ecosystem.
- Telecom operators are trusted providers of complex technical solutions in the field of TV platforms and, data analytics as well as billing and customer care. Telecom operators have experience in B2B sales and service delivery.

Sky's AdSmart solution illustrates the competitive advantages and value creation of Pay TV operators in the targeted advertising space. Sky reaches 43% of total UK TV households. Households are profiled and profile data is stored on the Sky+ HD box. Multiple advertisements are then sent to and stored on the set-top box via satellite. During ad breaks, the box serves the most relevant stored ad as per the household profile without the viewers realizing a difference between the regular and targeted linear broadcast feed. The value proposition to advertisers is clear. Sky proposes flexible and targeted advertising with high precision across platforms and viewing modes. In contrast to today's opaque gross rating points

Figure 35: Value flow



Source: Arthur D. Little

(GRPs), Sky essentially uses the online advertising standard of pricing in 1,000 impressions and only for households that saw a minimum of 75% of the ad. So far, Sky has already built a considerable ad inventory, selling advertising on behalf of 26 broadcasters covering 130 TV channels. Sky developed a proprietary segmentation model covering 900 segments based on 150+ criteria (for the UK market). The targeting and serving of ads is sequentially rolled out to all of Sky's platforms (linear, on-demand and mobile) and geographies (4Q16 launch in Italy, 1Q17 launch in Ireland, 2018 launch in Germany). Lastly, Sky has built advanced reporting tools to provide full transparency on the performance of advertising campaigns. Since its launch in 1Q14, Sky reported more than GBP 100m in revenue, based on >6,000 individual campaigns for >900 advertisers who are mostly first-time TV advertising clients.

Virgin Media (Ireland) has chosen a different market entry, essentially consolidating the FTA TV market through the acquisition of the two largest commercial TV channel families.

Virgin Media now controls 17% of audience share. In 2015, Virgin Media acquired TV3 for EUR 87m (at ~1.5x revenue, ~10x EBIT), which offers a range of programming with at least 40% of locally produced content focusing on news, sports, reality shows and entertainment. In 2016, Virgin Ireland also acquired UTV Ireland for EUR 10m (at ~1.0x revenue) focusing mainly on content from ITV (UK broadcaster) resulting in a strong line-up of TV series and highly popular UK soap operas. Virgin Media announced that it would fully integrate the (smaller) UTV Ireland organization into the TV3 Group and thereby become the largest commercial TV broadcaster in Ireland, second only to public broadcaster RTE. Virgin Media is also the 9th-largest TV advertising spender in Ireland, at an estimated EUR 10-15m annual advertising spend in an overall TV advertising market of EUR 219m in 2015, which is expected to grow to EUR 259m by 2020. With 365,000 bi-directional PayTV subscribers (~24% of total TV households), Virgin Media is now in a strong position to build a rival TV ad currency to the official Nielsen TV panel of just 1,050 households.

7. Music & Radio – the dark days are over

Flow of Funds: aggregators and rights owners biggest winners

The music industry has experienced dramatic changes over the last 10-15 years, and the driving engine for this has been digitization. The disrupting force of digitization has been very strong in the industry, impacting the value chain, the business and operating models, and the way people consume music content. Digital technologies have opened up the music market globally, with musicians now able to reach larger audiences and with more consumers having a larger music library to listen to than ever before. In 2015, consumers had access to over 43 million songs through over 400 licensed music services worldwide (IFPI 2015).

The typical chart that is used to convey the state of the music industry during the last few years was one resembling that in the figure below, which illustrates how physical media has been heavily cannibalized by online music.

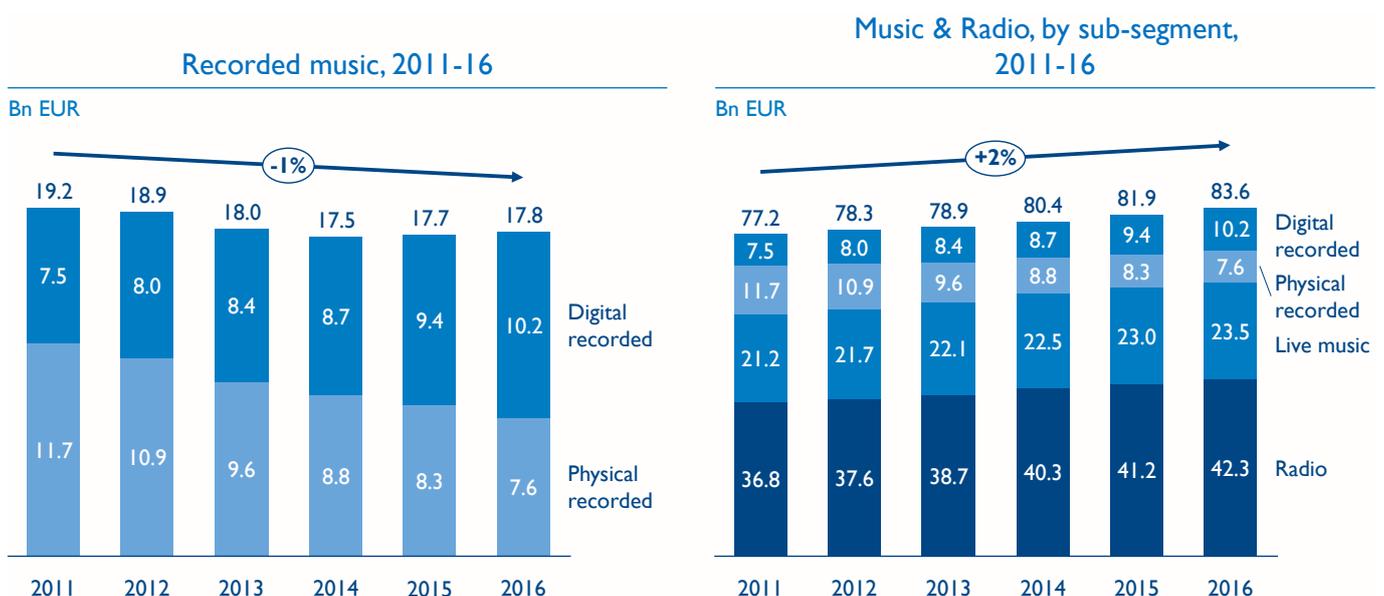
However dramatic this picture might look, it only captures part of the entire music business and in fact provides a distorted picture. If live music and radio revenue are taken into account, the picture looks much less frightening. In fact, music is a

segment that has seen steady growth since 2011, with radio and live music the biggest contributors to growth.

This also explains why the current state of digitization (i.e., online share of revenue) of the Radio & Music segment is only at 14% contrary to a common belief in a much higher share. Going forward, offline music segments (i.e., radio advertising, live music) will continue to grow in particular in North America, the Middle East & Africa and Asia Pacific. Only Eastern Europe is expected to see a small decline in offline music revenue. Major online music growth will occur in North America, Western Europe and Asia Pacific, mainly driven by subscription music-on-demand services, such as Spotify and Deezer. At the end of 2020, the overall Radio & Music segment is expected to reach an online revenue share of 17%, or a total of more than EUR 15bn.

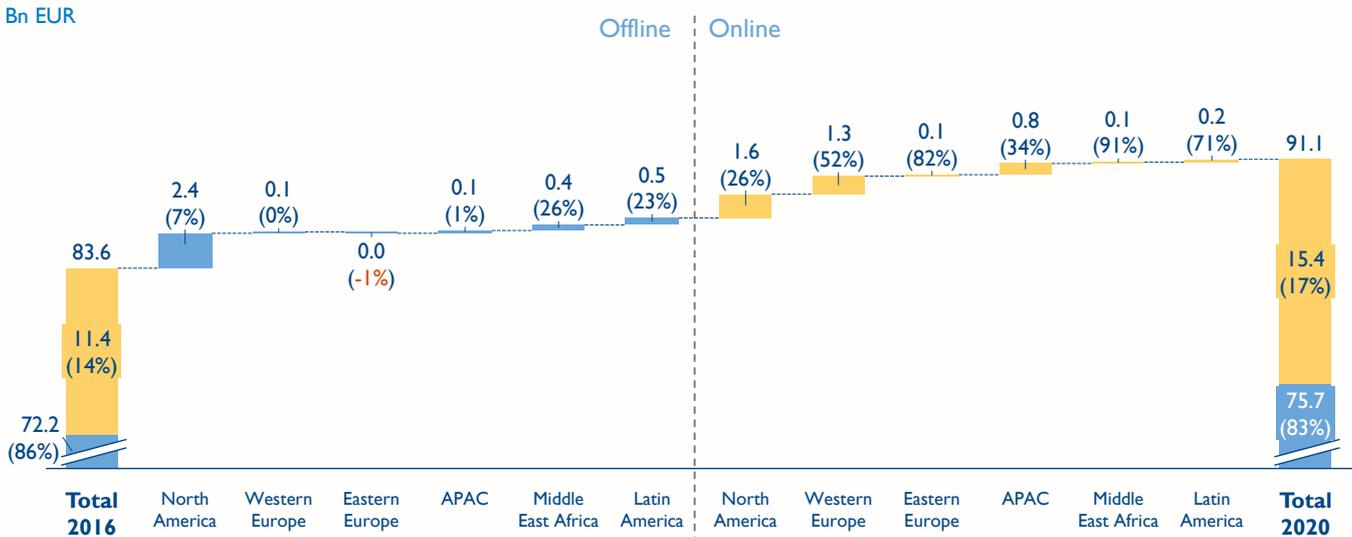
In terms of sources of funds, consumer, advertising and public spend is expected to grow equally. However, the lion's share of incremental consumer spend will flow towards online players, adding +EUR 3.6bn in revenue. At the same time, online players will disburse roughly the same amount to content owners, with the result that the value share will not increase (nor will the gross margin) overall.

Figure 36: Music & Radio revenues



Source: Arthur D. Little

Figure 37: Music & Radio, by geography & channel, 2016 vs. 2020



Note: Absolute figures in charts represent incremental revenues until 2020, percentages show relative values to 2016 revenues
 Source: Arthur D. Little

The clear winners of the digitization of music are online players serving as the new direct link between content owners and consumers. By using new technologies and analytics, they provide content owners with cost-efficient means of distribution and new valuable insights about their listeners’ music consumption habits. One example in the market is Spotify Fan Insights, which aims to provide extensive information on listening habits to artists in order to strengthen bonds with consumers and convert them from listeners into fans.

Online aggregators also generate substantial value for consumers by providing them with easy access to an enormous amount of music from all around the world. Via usage of big data analytics, the online aggregators also offer customers personalized content and help them to find new music they like in an efficient way.

Offline distributors will continue to be the hardest hit by the transformation, as volumes for physical media are experiencing strong declines. However, the offline channel still holds a strong position in live events, which will still be a major source of revenue going forward.

The total funds distributed to content owners is expected to grow, an increase driven by both higher reimbursements on recorded music and revenue from live events. In addition, new tools and services help the content producers to know the customer better, which can hence develop more appealing music content.

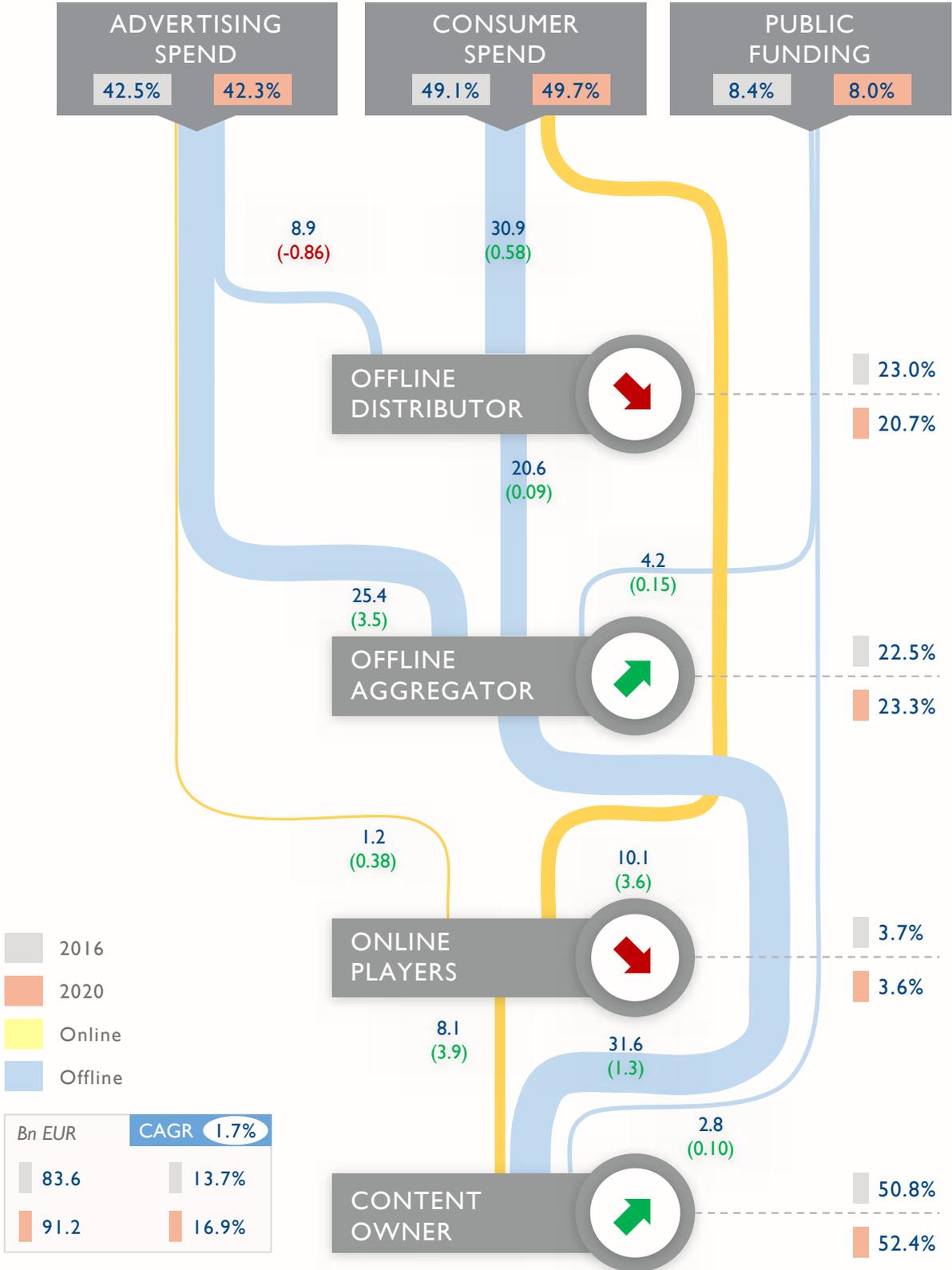
Music has mastered multiple waves of digitization

Apart from digitization, the music and radio industry faces other trends creating a dynamic landscape based on the different industry actors. Three of the most significant trends transforming the industry can be seen in the figure below.

Digitization makes it much faster and cheaper to distribute music globally, and since the digital world has weaker borders than the physical one, it is more difficult to fight the trend with geoblocking. In the music industry, it is preferable and common with global releases compared to the movie industry, where geographical sequencing of new movies and series is more common. The music industry has increased usage of global releases to ensure fans all have access on the same day, help artists who want to leverage on social media, and reduce the risk of piracy when eliminating the release gap.

For a couple of years, there has been a shift from downloading songs to usage of streaming music services. The shift is part of the larger trend of the sharing economy and means that consumers pay for access to content rather than ownership of it. Today, approximately 55% of digital music revenue is already generated through streaming services. By 2020, revenue from downloads will decline to 15% of total digital music revenue.

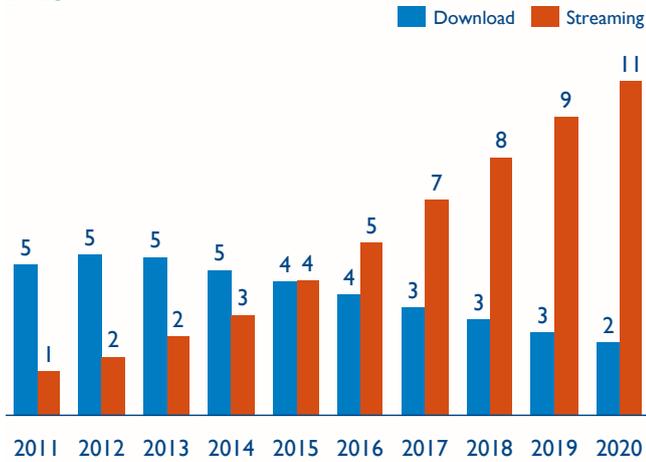
Figure 38: Music & Radio, Flow of Funds, all segments in bn EUR, 2016 vs. 2020



Source: Arthur D. Little

Figure 39: Digital music – streaming vs. download

Bn EUR



Source: Arthur D. Little

A major problem hampering stronger growth of streaming services is that most consumers worldwide are not yet familiar with this new way of consuming music. However, the launch of Apple Music will increase awareness, and competition will further improve quality of available streaming services. Another factor supporting the growth of the streaming industry is political decisions making it easier to use Internet-based services internationally.

Digital technology makes it easier to create personalized content, and listen to own playlists or playlists created by others has become more popular among consumers. Digital content aggregators have gained strong capabilities and positions to create these playlists, which creates stickiness to the service

and can hence be used as a competitive advantage. Today, aggregators offer standard playlists, as well as automatically generated playlists created via usage of advanced algorithms. Consequently, playlists and other tools of personalization have become the fuel that drives both discovery and consumption of music.

Music has never been as cheap and accessible as it is today and hence the undoubted winners in the market are the individuals and businesses consuming music. As new add-on value-creating services emerge for both consumers (see Trend section regarding personalization) and businesses (see Case example: Soundtrack your brand below) the total consumption of music will increase.

Innovative online aggregation players emerge

Soundtrack Your Brand Soundtrack Your Brand is a Swedish company that delivers B2B services for music streaming in stores and restaurants. The idea is that store or restaurant revenue can be influenced by the type and pace of music played in the establishment. A study conducted by retail and hospitality research firm HUI showed that sales rose by 78% when comparing with/without in-store music. So, the potential is huge. The company has signed several interesting contracts, including with the fashion retailer GANT and fast-food company McDonald's. The case is an example how as the online value chain matures, the roles of distribution and aggregation can become distinct again (as in the offline value chain).

Figure 40: Most significant trends transforming the industry



Source: Arthur D. Little

K Kobalt Kobalt is a Swedish company which aims to change the way compensation is credited and distributed in the value chain. Previous systems, procedures and rules have been opaque and compensation to a content owner has not been perceived as fair. Kobalt aims to solve this challenge by developing advanced technology solutions. Moreover, the company has a production unit, which is an interesting example of vertical integration. The case is an example of how the digital environment enables solutions that can support the overcoming of major challenges.

During the last decade, the recorded music industry has been going through massive turmoil. However, in recent years, the size of the industry has stabilized as a result of growth in digital music. In this new era, the big winners are consumers, who have access to more music than ever—anytime, anywhere. Other big winners are the online aggregators, which act as middlemen generating substantial value for the actors on either side.

However, the issue now is whether current business models are sustainable for artists and content owners, and thereby for the industry as a whole. If artists' and content owners' complete portfolios of revenue streams (recorded and live music) are considered, then the state of the industry looks much less fragile than is typically perceived. The dominant streaming services are paying about the same revenue share to artists as digital stores do while making it easier for artists to generate revenue from their back catalogs, tours, commercial enterprises and merchandise. These revenue streams are also benefitting the music industry as a whole and in particular the online aggregators. In the mid-term, it is conceivable that online aggregators will even sign up and publish their own artists or commission own tracks (and thus own the master rights) as their global reach increases.

8. Gaming – sudden death of physical media

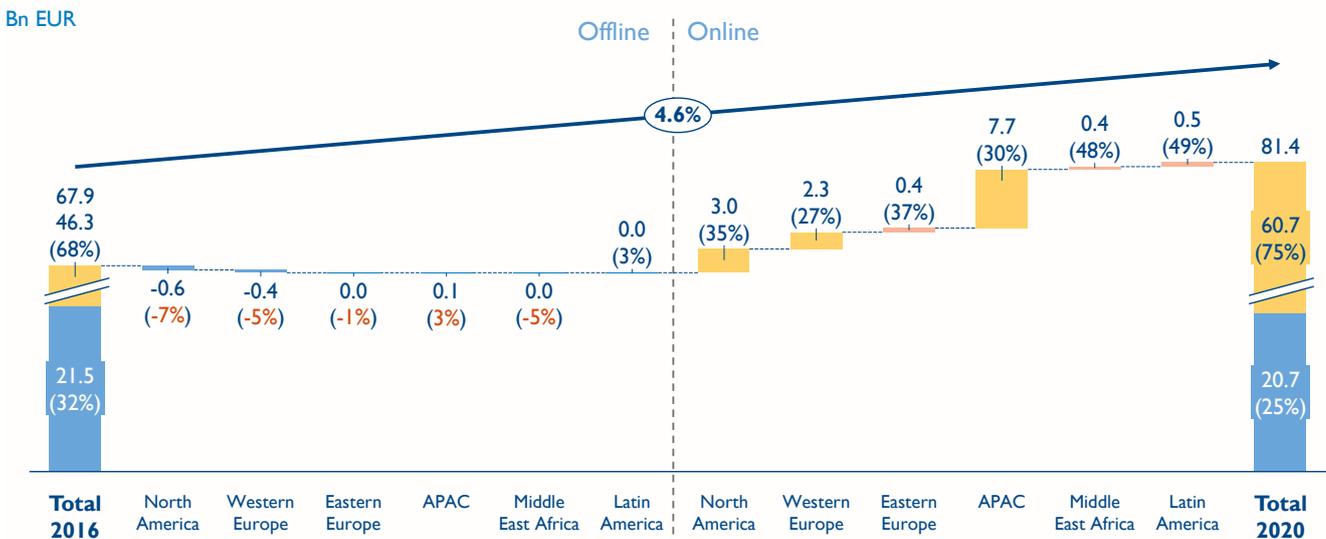
The fast-moving video gaming industry has gone through exciting changes over the past five years. Video gaming experiences are constantly improving as video quality rapidly increases and new devices are launched. Gaming companies are changing their business models in response to strong competition, such as moving to free-to-play games, monetizing on in-app advertisement and in-app purchases, and shifting their focus from physical to digital games to attract more players. While the market was not ready for virtual reality (VR) gaming a few years ago, it looks like 2016 was the year in which this new genre went mainstream, with many new titles appearing but also established players transforming their most popular titles to take advantage of VR headsets (e.g., *Star Wars: Battlefront* by Electronic Arts). Also, e-sports are becoming more well-known with some of the largest tournaments attracting tens of millions of unique viewers and astonishing prize pools surpassing USD 15m, which is more than the US Masters’ prize money, one of the largest golf tournaments in the world, at USD 10m, or the ATP World Tour Finals, a major tennis tournament, at USD 7.5m. We see ‘traditional’ players such as Yahoo (recently acquired by Verizon) increasingly entering this new highly profitable field of gaming.

Flow of Funds: content producers further strengthening their position

The global video gaming market was valued at EUR 68bn in 2016 and is expected to grow at a CAGR of 4.6%, to EUR 81bn, by 2020, excluding revenue generated from the sale of hardware. Offline gaming (i.e., physical sale and rental of games) will only see a minor decline of ~5-7% of today’s market size. But online gaming revenue should grow significantly until 2020. Leading geographies are Asia Pacific (+EUR 7.7bn) and North America (+EUR 3.0bn), followed by Europe (+EUR 2.7bn). The gaming industry is the most digitized segment, with more than two-thirds of revenue already coming from online sources in 2016. This should reach three-quarters by 2020.

TV console gaming is expected to remain the most important video gaming platform in the near future, as it is still the favorite gaming device offering the most compelling gaming experiences. Three main players control the TV console market: Nintendo, Microsoft and Sony. The eighth generation of videogame consoles arrived in 2012 with the successful launch of Nintendo’s Wii U, followed by the launches of Microsoft’s Xbox One and Sony’s PlayStation 4 in 2013, enabling functions like cloud gaming and media management. The PlayStation 4 games *Black Ops: Call of Duty III*, *FIFA 16* and *Star Wars:*

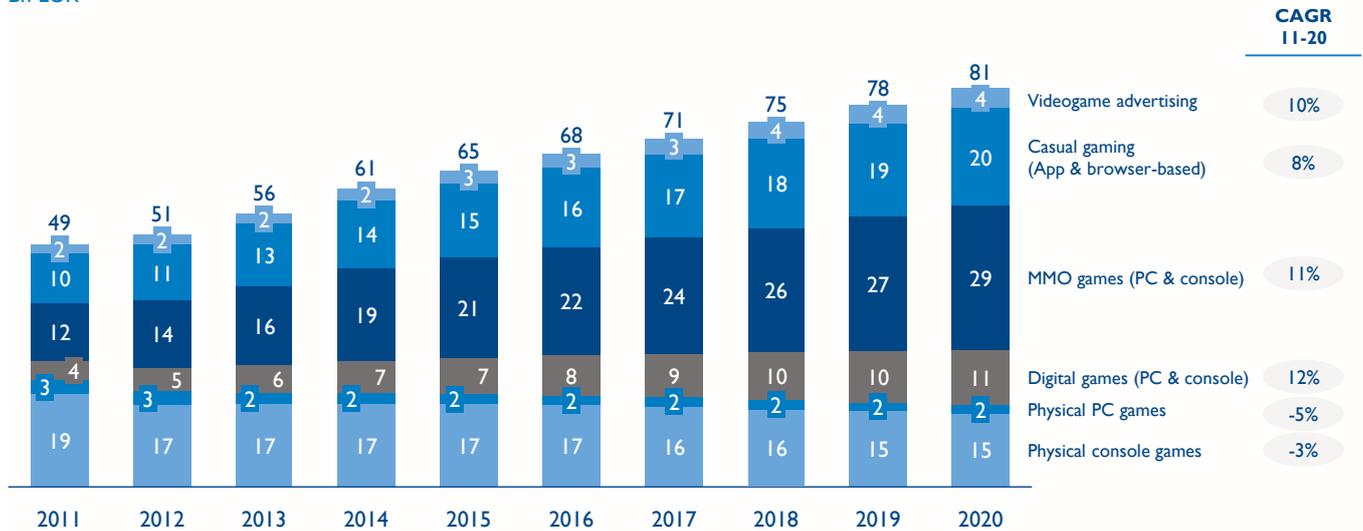
Figure 41: Gaming, by geography & channel, 2016 vs. 2020



Note: Absolute figures in charts represent incremental revenues until 2020, percentages show relative values to 2016 revenues
Source: Arthur D. Little

Figure 42: Gaming, by sub-segment, 2011-20

Bn EUR



Source: Arthur D. Little

Battlefront were the three top-selling console games in 2015¹, as shown in the figure below. However, physical console game revenue will be in structural decline, while digital delivery (streaming or download) and subscription of micro-transaction based console games will grow significantly in overall revenue contribution.

Massively Multiplayer Online gaming (MMO) is the second-largest video gaming segment, showing significant growth, driven by the sale of more digital games (downloaded online) rather than physical games purchased on a disc. MMO is a gaming genre that supports a very large number of players simultaneously in a continuous world in which players cooperate and compete with each other (or other teams) online on a large scale, through their laptop, console or mobile device. Strong broadband connectivity is important to ensure a good gaming experience. According to SuperData Research, the average MMO playing session lasts 1.9 hours and the average number of weekly MMO play sessions per gamer is five, meaning gamers spend an average of almost 10 hours/week on MMOs².

Asia Pacific (APAC) is the highest MMO revenue-generating region given its large consumer base for online games and the presence of numerous game developers in this region (e.g., NCSOFT, Nexon and Tencent). The most popular sub-genre of MMO is the massively multiplayer online-role-playing game (MMORPG), such as the well-known game *World of Warcraft* game by Activision Blizzard, where each player controls an avatar through a range of quests and adventures.

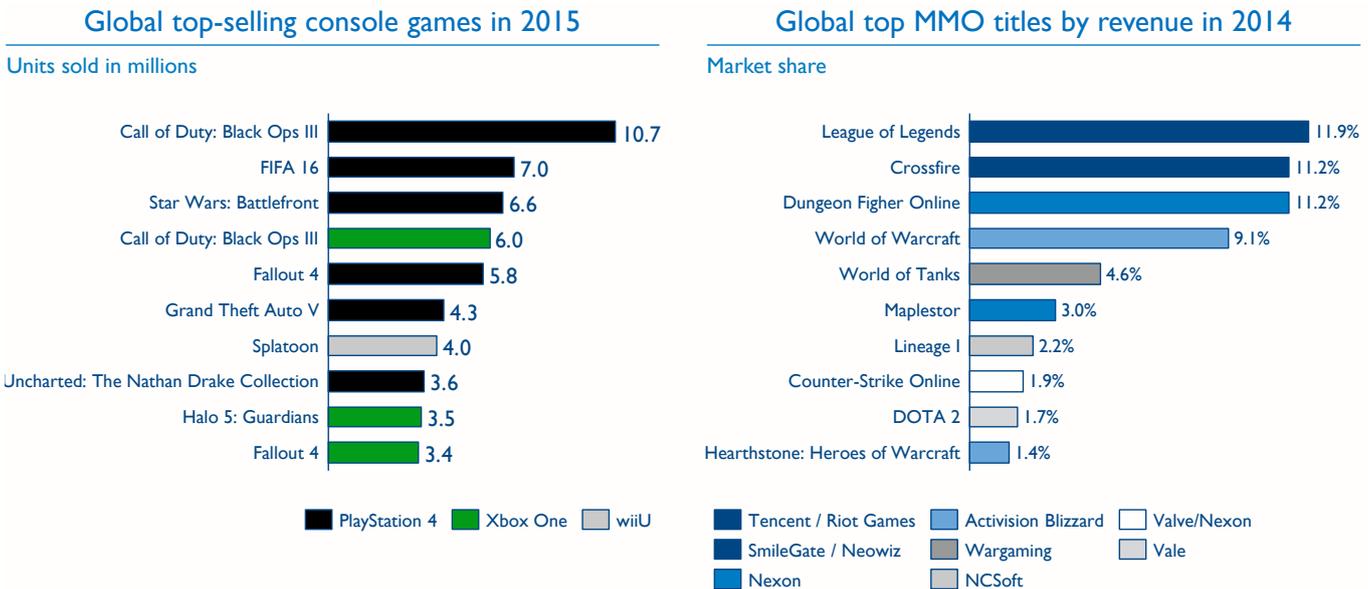
The online battle arena videogame *League of Legends*, the first-person shooter game *Crossfire*, and the Beat 'em up game *Dungeon Fighter Online* were the three most popular MMO games by revenue in 2014⁴, as shown in the figure below. *League of Legends* was released in 2009 by Riot Games and has become one of the most popular PC games in the world. In 2014, Riot Games claimed that over 67million gamers played *League of Legends* every month and over 7.5 million gamers played *League of Legends* simultaneously during daily peak hours.

Whereas MMO games are usually free-to-play online (but special skills or tools have to be bought through micro-transactions), console video games have an upfront cost which depends on the selling platform, the compatible console (e.g., PlayStation 4 vs. Xbox One), and the format (physical or digital). And, some games are more expensive than others: e.g., *Call of Duty: Black Ops III* might sell for USD 60 on Game Stop while *FIFA 16* and *Star Wars: Battlefront* are both priced at USD 40. Remarkably, most of the top-selling console videogames are more expensive to download digitally vs. purchasing the physical disc: e.g., *FIFA 16*, *Star Wars: Battlefront*, *Fallout 4* and *Uncharted: The Nathan Drake Collection* might all be selling for USD 60 digitally vs. USD 40 physically.

App- and browser-based casual gaming are the third- and fourth-largest video gaming markets, which are both expected to show fast growth over the next few years. Smartphone gaming is being driven by the rapid increase in smartphone penetration and the popularity of in-app purchases while tablet gaming is

1 Source: Statista - Top-selling console games worldwide in 2015.
 2 Source: SuperData Research - The MMO & MOBA Games Market Report, 2016.
 3 Source: PR Newswire - Global MMO Games Market 2015-19.
 4 Source: SuperData Research 2014.

Figure 43: Top console and MMO videogames



Note: Estimated market share based on revenues for both free-to-play and subscription-based MMO games
 Source: Arthur D. Little, Statista, SuperData Research

benefiting from gamers increasingly switching from console and PC gaming to tablets, as hardware costs are significantly lower. Even if over the past few years there has been an explosion of new and disruptive mobile insurgents, the mobile gaming market is characterized by only a handful of game companies which claim the lion's share of revenue (King, Supercell, Zynga and Activision)⁵.

The videogame industry has always been dominated by the content owners and they look likely to further strengthen their value capture through 2020. This is driven by higher value shares in online gaming (often these are direct-to-consumer offerings) for content owners rather than in the traditional offline/physical value chain. Overall, given the already high digitization of this segment, the online and offline value chains should remain roughly stable in their overall composition.

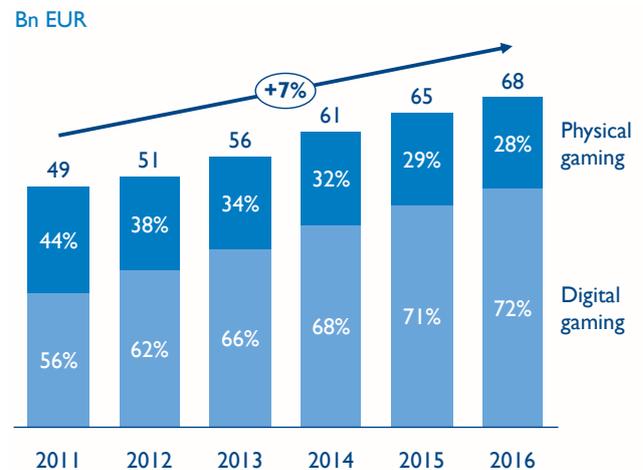
Shift from physical to digital games

Gamers are increasingly purchasing 'digital' games (i.e., downloaded online) instead of 'physical' games (i.e., purchased on a disc). In the PC gaming segment, this has been the trend for a while, but it is now also happening with regard to TV console games. The latest generation of game consoles are equipped with Wifi, fixed network connectivity, and hard-disc drives, allowing gamers to directly download games onto the console. Anyone with an Internet connection can download the game, and since these will be stored digitally they will last longer than a physical disc, which can be more easily damaged. Established gaming companies, such as Electronic Arts, are

changing their business models and increasingly offering digital games to meet this demand.

While 'physical' console games still represent the majority of console games sold, this market is in decline and we are seeing a shift to 'digital' and even 'online' console games (played online). Digital console games can be purchased from a console vendor's website or from online platforms, such as Amazon, PSN Games or GameStop. According to CNBC, downloads to consoles including Microsoft's Xbox and Sony's PlayStation saw the biggest jump in 2015. Digital console game sales were up 34% in 2015, while at the same time, software sales at US brick-and-mortar stores continued to fall, slipping 13%.

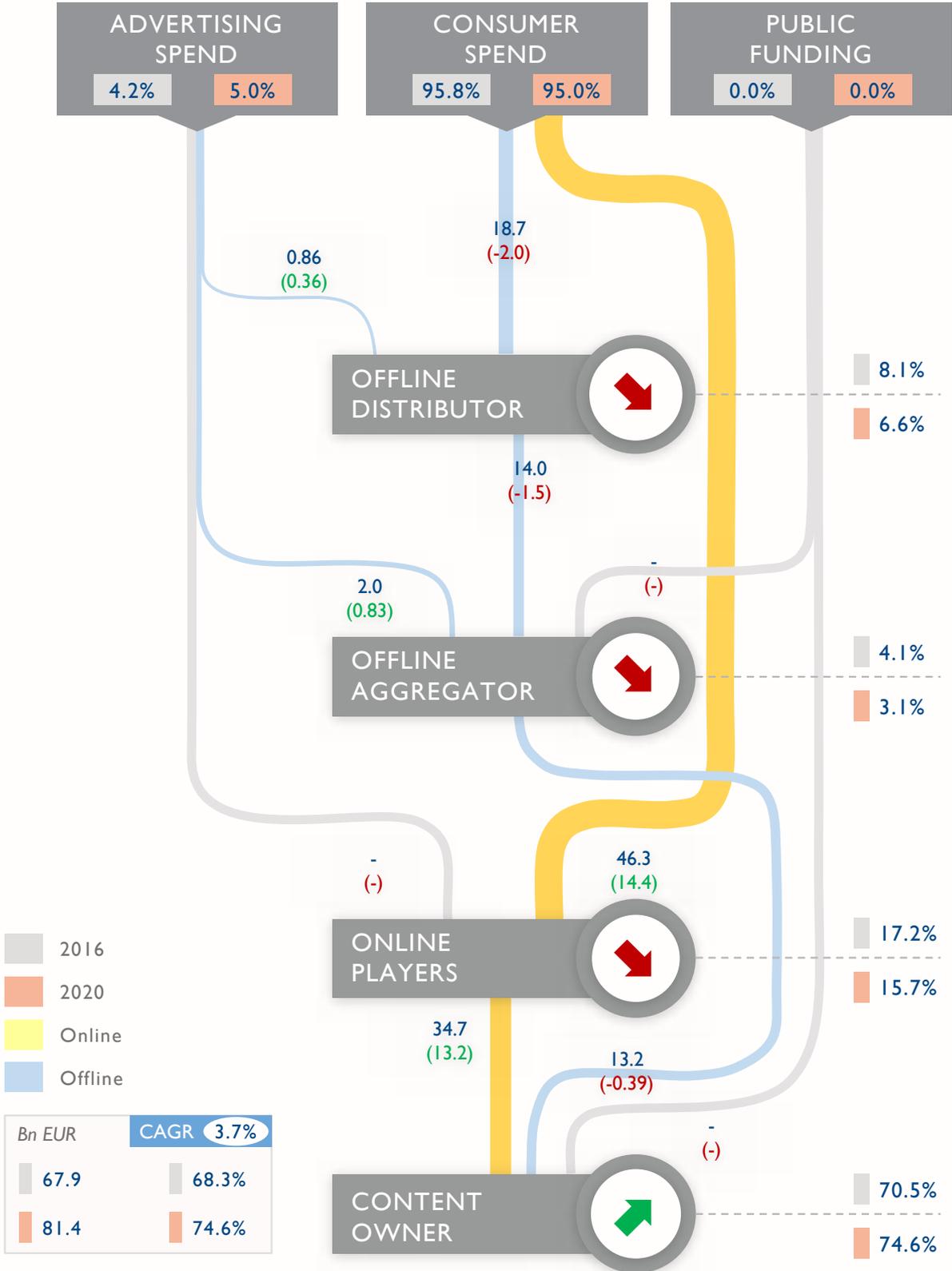
Figure 44: Gaming by type of media, 2011-16



Source: Arthur D. Little

⁵ Source: SuperData Research - Mobile games market.

Figure 45: Gaming, Flow of Funds, all segments in bn EUR, 2016 vs. 2020



Source: Arthur D. Little

The rise of smartphone and tablet gaming is further pushing the shift to digital video gaming, as all those games will be played or downloaded online. Increasingly, PC and console game vendors are adapting their games to tablet or mobile devices to leverage their rising penetration.

In 2010, the sale of digital videogames represented only 29%. This share increased to 52% in 2014, surpassing the sales of physical games, and this is expected to rise even further⁶.

The rise of free-to-play videogames

Another important trend is the rise of free-to-play video gaming compared to fee- or subscription-based video gaming. Because of strong competition, we see that established players are increasingly offering free-to-play videogames to attract more players: e.g., free-to-play MMOs are growing in popularity, surpassing subscription-based MMOs. Some of the most popular MMO games, such as League of Legends and Dota 2, are available to play completely free of charge.

This removes entry barriers for new game developers, as anyone who can develop a game can now sell their product and compete with traditional players. This is especially true for mobile games, which in general are cheaper to produce than PC and TV console games. We have witnessed a massive increase of new mobile game providers. However, even though many new providers have appeared, they have not yet managed to gain significant market share, as we see a handful of companies which continue to earn the lion's share of revenue.

Free-to-play games still yield high profits, however, as they are able to monetize on their games via alternative revenue sources, such as in-app advertisement and in-app micro-transactions. According to SuperData Research, the free-to-play online games market in the US had an audience nearly six times larger in size than pay-to-play in 2013⁷.

Immersive gaming experiences are becoming mainstream

The emergence of virtual reality (VR) and augmented reality (AR) technologies has enabled entirely new types of videogames to be developed. VR gaming has recently been receiving a lot of attention in the media, and new devices and game titles are constantly being launched. AR could be the next game changer in the industry now that Microsoft has announced the release of its AR HoloLens headset or with the recent launch of Nintendo's Pokemon Go, which quickly became the biggest mobile game ever. VR and AR gaming are not the same, but they leverage the same type of technology to enable immersive gaming

experiences. The difference lies in the fact that in a VR world, the gamer is immersed in a completely artificial computer-generated 3D world (e.g., in space, in the desert, underwater), while in an AR world, the gamer is playing in a real environment on to which a number of virtual computer-generated layers have been added. The difference between the two types of games is blurred and the terms are often used together.

VR gaming typically involves a VR headset that is worn on the head of the gamer, incorporating a number of sensors to detect the gamer's movements, which are then interpreted by a computer and trigger a variety of responses within the virtual world. The VR headset requires a smartphone, PC or console to run the app or game and hence can be either fully mobile or tethered.

VR headsets have been around for almost 20 years, but many see 2016 as the year in which the technology became mainstream with the launch of the first 'serious' consumer headsets: the Samsung Gear VR headset was launched in 2015, the Oculus Rift VR headset in January 2016, the HTC Vive VR headset in April 2016, and the PlayStation VR headset in October 2016. There have been previous waves of VR headset launches, starting in the 1990s, most of which were considered failures, as the technology wasn't adequate to provide a convincing VR world (because of low-quality screen formats and slow processing power) and many gamers experienced VR motion sickness.

This new generation of VR headsets come at a significant cost, however, especially the tethered devices such as Oculus Rift (USD 600), HTC Vive (USD 800) and PlayStation (USD 500). The consoles are significantly more expensive than the traditional TV consoles, e.g., the price of an Xbox One is USD 279, a PlayStation 4 is USD 349, and a Wii U is USD 300 (including two or three games)⁸. The mobile VR headsets such as the Samsung Gear are more affordable (USD 100), but offer fewer gaming possibilities, as the platform must be a smartphone.

VR headset providers have announced promising sales figures of their respective products. In January 2016, Oculus Rift founder Palmer Luckey announced that pre-orders of the Oculus Rift VR headset were much better than expected. The product that the company had been expecting to sell in hours was gone in ten minutes. In February 2016, HTC announced that it had sold more than 15,000 HTC Vive VR kits in the first 10 minutes after these went on sale for pre-order. In March 2016, pre-orders for the PlayStation VR headset sold out on Amazon within 10 minutes of becoming available, and in May 2016, Samsung announced that it had already sold 300 000 Samsung Gear VR

⁶ Source: Entertainment Software Association (ESA) – 2015 Essential Facts about the computer and video game industry.

⁷ Source: SuperData Research - Free-to-play online games market.

⁸ Retail prices as displayed on respective websites of console vendors – prices if purchased in the US.

headsets in Europe. In comparison, in 2015, the total number of VR devices sold in Europe was 1.8m, according to CCS Insight⁹.

Along with the launch of these headsets, several 3D VR gaming titles have been announced. In the 1990s, companies including Nintendo and Sega had launched a number of VR titles (e.g., for Nintendo’s *Virtual Boy*), which introduced the concept of 3D VR gaming. However, these were discontinued because devices were not yet ready. Now that VR is entering the headlines again and is expected to become mainstream, we see established game development companies such as Electronic Arts Inc. adapting some of their original games and popular hits to take advantage of the VR headsets (e.g., *Star Wars: Battlefront*). We also see new games and titles emerging. Some VR headset providers are negotiating exclusive deals with game development companies stipulating that the game can only be run on their device, while other games can be run on several VR devices.

According to SuperData Research, game developers had a global audience of 56m VR users and produce 39m VR devices in 2016. Consumers are expected to have spent USD 5.1bn on VR gaming hardware, accessories and software in 2016, which would represent growth of more than 650% compared to 2015. The VR market is expected to reach up to USD 8.9bn in 2017 and continue rising to USD 12.3bn in 2018. We also see that mainly younger people are interested in VR gaming. According to SuperData Research, 74% of US respondents under 18 years

of age indicated that they were “very interested” in VR. For millennials, that number dropped to 65%, and to 54% for gen Xers, in contrast to only 42% for baby boomers¹⁰.

Another (partially) immersive gaming experience will be provided by AR. AR gamers will be able to experience a digital game in a real world environment offering even more situations than VR. With AR, the entire room in which the gamer is playing becomes the platform, e.g., the device will detect chairs, a table and a couch, and place virtual objects on or around the furniture that have to be used in the game.

Augmented reality games have existed for a while on mobile devices (where the camera of the mobile phone or tablet detects objects in a certain space and develops a game around this), but now the first AR headsets are being launched. Microsoft announced the development of its AR headset HoloLens, which was released in 2016, and the company has high expectations for its takeup. Asobo Studio and Microsoft have already developed three AR games which will be associated with the HoloLens, and will be shipped together with the AR headset (i.e., *Fragments, RoboRaid and Young Conker*). Several software apps and AR hardware devices are being introduced and there is heightened consumer interest in AR. The global AR market for gaming is expected to grow at a CAGR of 174% between 2015-2020¹¹. This high growth reflects the fact that the technology is still new and has significant long-term potential. The attractiveness of AR games has been

Figure 46: VR gaming market, headsets



Note: Retail prices displayed on respective websites – if purchased in US

Source: Arthur D. Little, company websites

9 Source: CCS Insight - Market Forecast, Augmented and Virtual Reality Worldwide, 2016-2020.

10 Source: SuperData Research – Virtual Reality Industry Report 2016.

11 Source: Technavio – Global Augmented Reality market for Gaming 2016-20.

proven with the launch of Nintendo's *Pokemon Go* mobile game, which experienced three to six times the number of downloads as other popular games in its first week¹² of launch, e.g., *Candy Crush* or *Angry Birds*.

The e-sports market goes mainstage

e-sports are organized individual or team-based professional videogaming tournaments which in many cases are broadcast live on TV or online, or which can take place in an 'e-sports arena' that the public can attend. e-sports are played on a PC or TV console and typically the winner(s) will receive a prize that can amount to several million dollars. The concept of e-sports was first introduced in the 1980s with the first *Space Invaders* tournament in the US. But, the concept is gaining more momentum and the market is expected to continue to grow massively over the next four years as it receives more media attention, players increasingly gain recognition, prize money reaches astonishing amounts, and the number of tournaments continue to increase.

In 1980, Atari had already held the earliest large-scale videogame championship, called *Space Invaders*, which attracted more than 10,000 participants. In the 1990s, more elaborate e-sports competitions appeared, mainly oriented around sports games, arcade-style games, weapons-based combat games and strategy games.

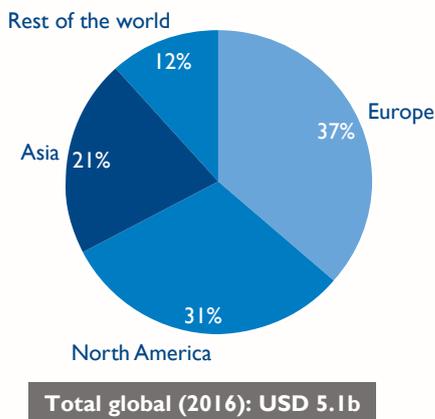
In the year 2000, two major global video gaming competitions were initiated with the launch of both World Cyber Games competitions and the Electronic Sports World Cup, and in 2002, one of the largest e-sports associations, Major League Gaming (MLG), was created. This was the first tournament broadcast on TV in the US. The MLG Pro Points Ranking System has since become the benchmark for ranking videogamers around the world¹³.

Other major tournament organizations that started to make a name for themselves after 2010 include the following: DreamHack, a large Swedish computer festival which organized many tournaments and competitions; and the *global StarCraft II* League, based in South Korea. The annual *League of Legends* tournament is one of the largest in the world. The five-week tour through Europe for the 2015 annual *League of Legends* championship saw an all-time high of 360m hours of live e-sports viewed. Total cumulative daily unique impressions (the amount of unique viewers that tuned in every day via online and television channels) reached 334m over the four weeks (vs. 288m in 2014)¹⁴. As a comparison, the 2014 snooker World Championship reached an audience of over 330m worldwide.

Over the past five years, countless professional video gaming tournaments have been organized around the world and multiple e-sports platforms have appeared, attracting multi-million-dollar investments from prominent figures including the actor Ashton Kutcher and entrepreneur Mark Cuban. Other more mainstream sports-related companies are showing an interest in e-sports:

Figure 47: VR revenue trend and regional distribution

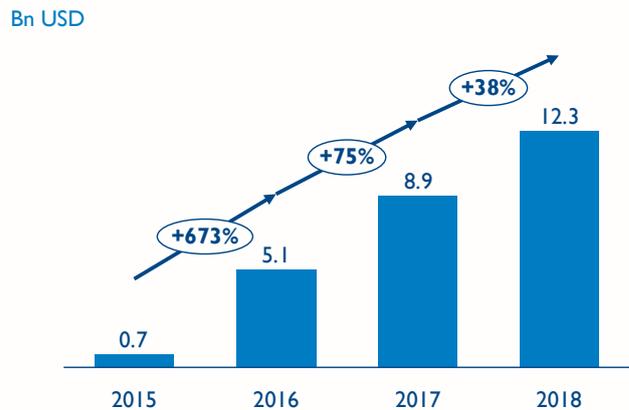
2016 revenues of global virtual reality gaming



Note: Includes hardware, accessories and software
 Source: Arthur D. Little, SuperData Research

¹² Source: Sensor Tower.
¹³ Source: Gamurs – The evolution of e-sports.
¹⁴ Source: League of Legends, press release.

2015 - 2018 revenues of global virtual reality gaming



e.g., the UK soccer team Manchester United is currently in talks to acquire an unnamed European e-sports team. Media companies are clearly also taking an interest in e-sports, as we have seen MTG, a large international entertainment company, investing in the world's largest e-sports company ESL and ESPN announced in 2016 that it will cover e-sports. 2016 was also the year in which Yahoo announced the launch of its e-sports gaming news and video site.

In 2015, e-sports was recognised as a second-level Olympic sport in South Korea alongside other competitions, such as chess, automobile racing and polo. More e-sports arenas are being built around the world: e.g., in the UK, the leading e-sports company Gfinity turned a cinema in the Fulham area of London into a 600+ seat e-sports venue, following similar examples in Germany and the US. At present, US e-sports gamers are given the same visa as professional athletes when travelling, encouraging gamers to make e-sports their profession.

All these elements contribute to the fact that e-sports is a rapidly expanding market globally, which is forecast to grow at a CAGR of 37% over 2014-2019¹⁵. Leading e-sports countries include the US, China, South Korea and Sweden. The three largest categories of e-sports are First-Person Shooter games (FPS), Real-Time Strategy games (RTS), and Multiplayer Online Battle Arena (MOBA).

FPS games used to be the most popular e-sports games and are still growing significantly. They are played from a first-person

perspective and the gamer experiences the game from the eyes of the protagonist. A game typically evolves around the protagonist having to complete a mission or beat an opponent.

RTS games are strategy-based computer games, which generally involve building a civilization or an army, and where strategy is the most important factor in winning the game. The growth in RTS revenue is slowing, as gaming studios are changing their core competencies. Indeed, we have seen several RTS games switching to MOBA (e.g., *Sins of Dark Age - Commander Mode*).

MOBA games originated as a sub-genre of RTS games in which each player controls a single character in one of two teams. It is now considered as a genre on its own and it is by far the largest and fastest-growing e-sports segment. Major MOBA game titles include the famous *League of Legends*, *Heroes of Newerth* and *Dota 2* (Defense of the Ancients), which represented over 50% of global MOBA revenue in 2014¹⁵.

e-sports revenue originates mainly from three different sources: advertising, the prize pool and ticket sales. Advertising revenue represents by far the largest bucket, at 78% of global revenue in 2014¹⁶. Large consumer brands such as Coca-Cola and Red Bull sponsor leagues and gamers during tournaments, displaying logos and products.

The prize pool is the second main source of revenue at 17% of global revenue in 2014. Prize pools can reach millions of dollars

Figure 48: e-sports: KeyArena, Seattle – Dota 2: The International, 2014

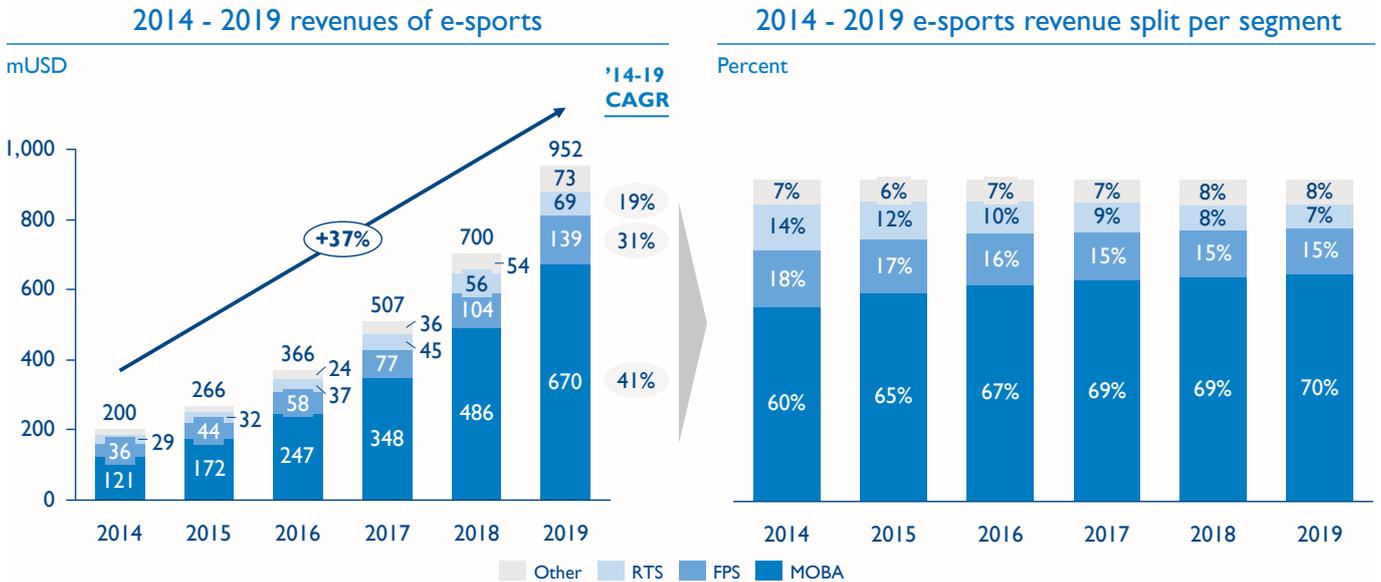


Source: Red Bull

15 Source: Technavio – Global e-sports market 2015–19.

16 Source: SuperData Research.

Figure 49: Overall and segment e-sports revenue trends



Note: considers revenues generated from tournaments excluding online advertisements
 Source: Arthur D. Little, Technavio

and game development companies as well as fans contribute to this pool: e.g., for the last edition of *The International*, which is an annual *Dota 2* championship hosted by game developer Valve Corporation, the prize pool totaled over USD 18m, of which USD 16.4m was contributed by participating players¹⁷.

Finally, ticket sales represents the third and smallest source of revenue at 5% of the total. Many e-sport events can be watched

online free of charge and the majority of viewing is done in that manner through streaming, e.g., through Twitch or YouTube.

We expect e-sports to be a market that will continue to grow significantly in the foreseeable future and that will continue to gain media attention.

Figure 50: e-sports: Unique viewers of biggest tournaments and biggest prize pools of games



Source: Arthur D. Little, The E-sports Marketing Blog, E-sports Earnings

¹⁷ Source: Dota 2 Prize Pool Tracker.

9. Online advertising – mobile and B2B as next frontiers

The online advertising market encompasses all media and entertainment products and services that do not have a traditional media product as a pendant (e.g. advertising-funded video services or music services are not part of this section and revenues but in the respective sections). In addition, this includes revenue related to apps, digital advertising and social media. These sub-segments have all seen exponential growth in the short term, growth which is closely related to their relatively short existence, their constant evolution and their increasing penetration. Given the size and complexity of this segment, it would merit a dedicated report. Thus, in this chapter, we focus our analysis only on the most critical topics.

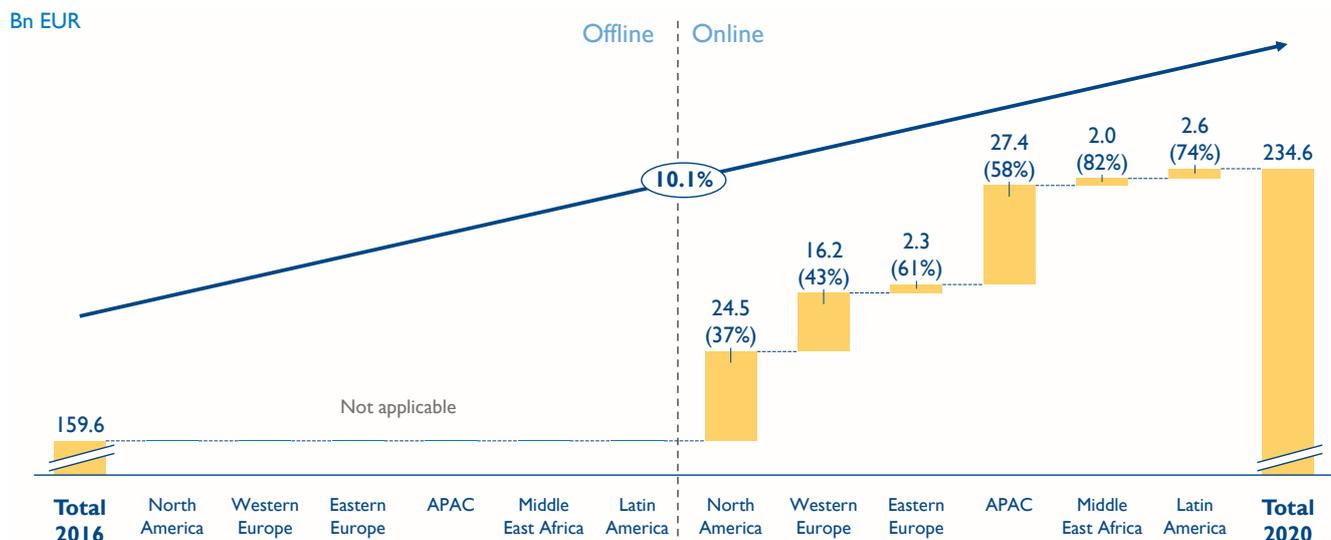
Flow of Funds: content owners will benefit more going forward

After rapid growth, this segment now accounts for close to EUR 160bn on a global basis. Going forward, this rapid growth is expected to continue at a CAGR of 10% through 2020, reaching a total market size of EUR 235bn. The majority of growth is likely to be in North America (EUR 25bn), Asia Pacific (EUR 27bn) and Europe (EUR 18bn), followed by Latin America and the Middle East & Africa.

In relative terms, content owners (e.g., app developers/owners, traffic acquisition partners, online portals) will benefit the most from this growth in online pure-play revenue. Their overall share of the value capture could grow from 20.5% to 26% as the online advertising industry starts to mature. In absolute terms, the major online players (i.e., Google, Facebook) will take the lion's share of the +EUR 75bn in online advertising revenue growth.

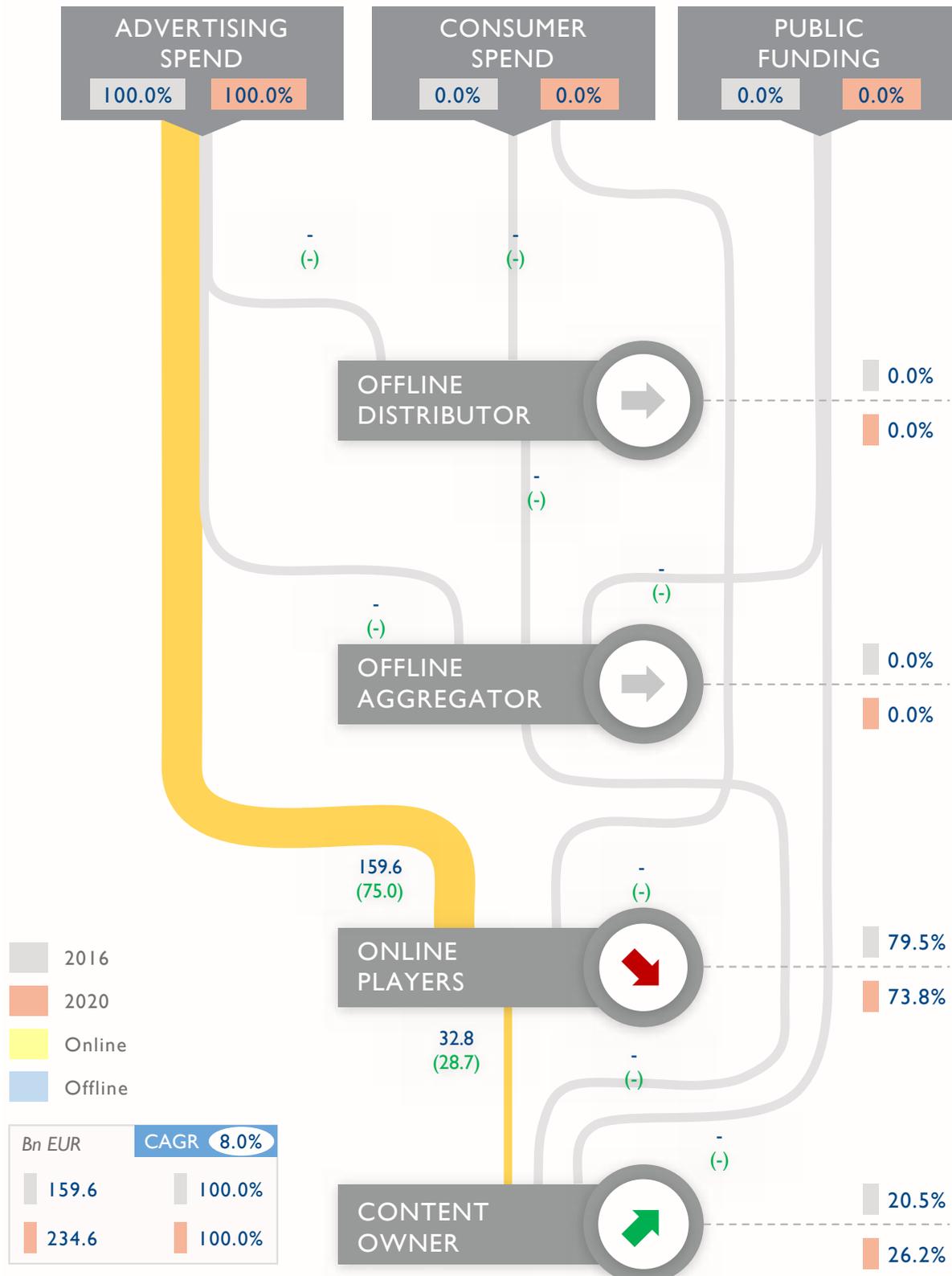
Changes in customer behavior, increased targeting possibilities offered to advertisers, and the appearance of innovative ad formats will drive digital advertising growth. Time spent during the day using the Internet is increasing continuously, and in some countries, such as the US, it has surpassed the time spent watching TV. This increment in time spent on the Internet (or using apps) is also leading increasing demand for mobile devices, especially in emerging economies, where the penetration is lower and availability of low-cost devices is fostering their demand. From an advertiser's perspective, one of the main advantages that online advertising holds over other media is the opportunity to efficiently address specific groups of customers. Thanks to cookies and IP address identification and big data, advertising can successfully target customers regarding behavior, lifestyle, location or socio-demographics,

Figure 51: Online advertising, by geography & channel, 2016 vs. 2020



Note: Absolute figures in charts represent incremental revenues until 2020, percentages show relative values to 2016 revenues
Source: Arthur D. Little

Figure 52: Online advertising, Flow of Funds, all segments in bn EUR, 2016 vs. 2020



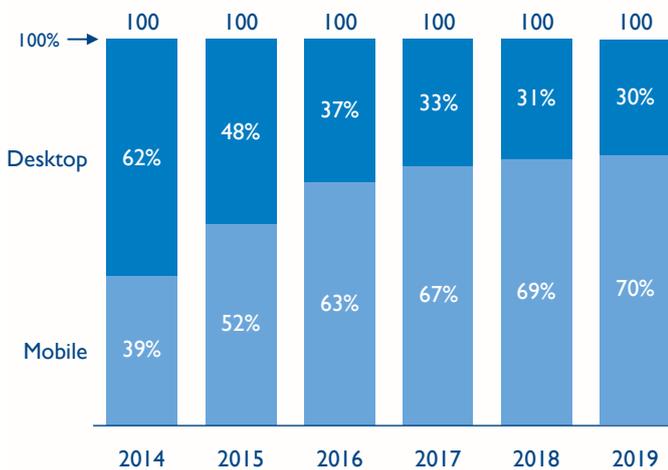
Source: Arthur D. Little

among other factors. Major online players, such as Facebook, Google, Yahoo! and Microsoft, leverage on this targeting capability to capture companies willing to advertise online and to adapt targeted ads to the different ad formats supported by their products.

Mobile overtaking desktop advertising

Online desktop ads used to lead advertising spend, but 2015 was an inflection point in this regard. For the first time, mobile ads surpassed desktop ads with regard to share of advertising spending. This is not a mere chance, just the beginning of a new spending trend. Recent studies show that investment in mobile advertising is expected to represent 70% of online advertising in 2019 while desktop ads will only account for the remaining 30%.

Figure 53: Digital advertising spend % by platform (global)



Source: eMarketer and Salesforce

This shift in the way customers use the Internet also results in a change in advertising platforms. Currently, 52.7% of Internet users access the net via a mobile device in a global context; when looking at the US, three out of four Internet users are already accessing the Internet with a mobile device. The unstoppable growth of mobile has not only changed advertising investment allocation, but it has also re-shaped the algorithm behind SEO (i.e., search engine optimization). Since March 2015, Google has included mobile-friendliness in the algorithm and those sites that are not web responsive will see their positioning lowered in mobile searches.

It is clear that mobile advertising will be 'king' in the online advertising market in the future. It is still not clear, however, who will capture the lion's share of future revenue. Mobile web and mobile apps are leading a fierce battle to capture this advertising growth. Currently, mobile web ads account for the lions share compared to apps. However, consumers' behavior shows that 78% of the time spent using their mobile devices is dedicated to apps. And we would note that in-app advertising makes it

much easier to track the source of traffic (attribution) and life time value, two metrics that are key for marketers. However, if we look at the number of clicks per ad, here, mobile web wins the battle. Research shows that 35% of mobile users click on an ad in a mobile browser vs. 26% in apps. In addition, changes in Google's algorithm to promote mobile-friendly apps are leading to responsive websites with a good user experience. This should shrink the usage gap between apps and web mobile, and we expect that in the mid-term the balance will tip in favor of mobile.

Video ads are hot, classifieds are not

The online advertising market will change significantly when it comes to platforms (mobile vs. desktop), but ad formats have not yet been affected. Traditionally, search ads represent close to half of the online advertising market and they are expected to maintain their dominant position in the next four years. Changes are expected in display ad share. By 2020, this type of ad is expected to represent 30% of global online advertising investment, -3 percentage points vs. 2016. Classified ads will grow significantly more slowly than the other ad formats and thus will likely only represent 10% of total online ad spend by 2020. The hottest format in online advertising will be video ads, potentially growing at a CAGR of more than 30% through 2020, and thereby claiming 15% of total online ad spending by 2020.

Internet users' video consumption is growing rapidly, and according to Cisco, it is expected to represent 80% of total Internet traffic (mobile and desktop) by 2020. As a result, in order to maximize the target customers a brand or company can reach, an online advertising strategy needs to include video advertising and to take into consideration where the target audience is watching it (mobile vs. desktop). Due to the increasing Internet demand from mobile devices, there is certainly reason to believe that a great number of those video ads will be watched from a mobile device. Consequently, in order to succeed, advertisers must ensure that video ads are properly adapted to mobile devices. Publishers must adapt the video ads to mobile screen sizes and to shorter engagement periods than for desktop videos. Otherwise, what could have been a great opportunity to have a positive impact in the target audience will turn into a resounding failure. Such is the importance that video advertising is expected to reach that Google, Yahoo and Bing, leaders in search ads, are already working on incorporating videos into search ads so that this new format of advertising is not limited to non-search environments.

Ad blockers make the advertising industry shiver

Unfortunately, online advertising spend is not a tale of unstoppable and riskless growth. Online advertising may

experience a negative hit if it does not improve the user experience. Numerous ads impact negatively on the Internet user experience due to poor content, deterioration of the browsing experience, an increase in loading times or unwanted data consumption. From a user perspective, ad blockers are the most effective solution to the intrusion of unwanted and uncomfortable ads. At first, these ad blockers were only available in desktop browsers, limiting their impact to one platform. However, Apple changed the rules of the game in 2015 with the introduction of iOS 9. The new mobile browser in iOS included one particular new feature that threatened advertisers directly: it accepted ad blockers. Since the launch of iOS 9 in 2015, ad blockers for mobile devices downloads grew by 90%, reaching 21% of smartphone users in the world.

In order to prevent the growth of these browser extensions, publishers must take action and rethink the way they deliver certain ads. Before publishing a new ad, they need to make sure that there is a balance between the aim of the advertising and the user experience. Otherwise, ad blockers will grow as fast as online ad spending.

Aware of the threat that ad blockers pose, players in the ecosystem have been addressing the issue. However, the way of fighting back differs greatly between players. While some have decided to take advantage of the ad to offer the targeted audience brand new and enriched content (i.e., videos and native ads), others have decided to deny access to their sites to those Internet users with ad-blockers or to charge them to access certain websites.

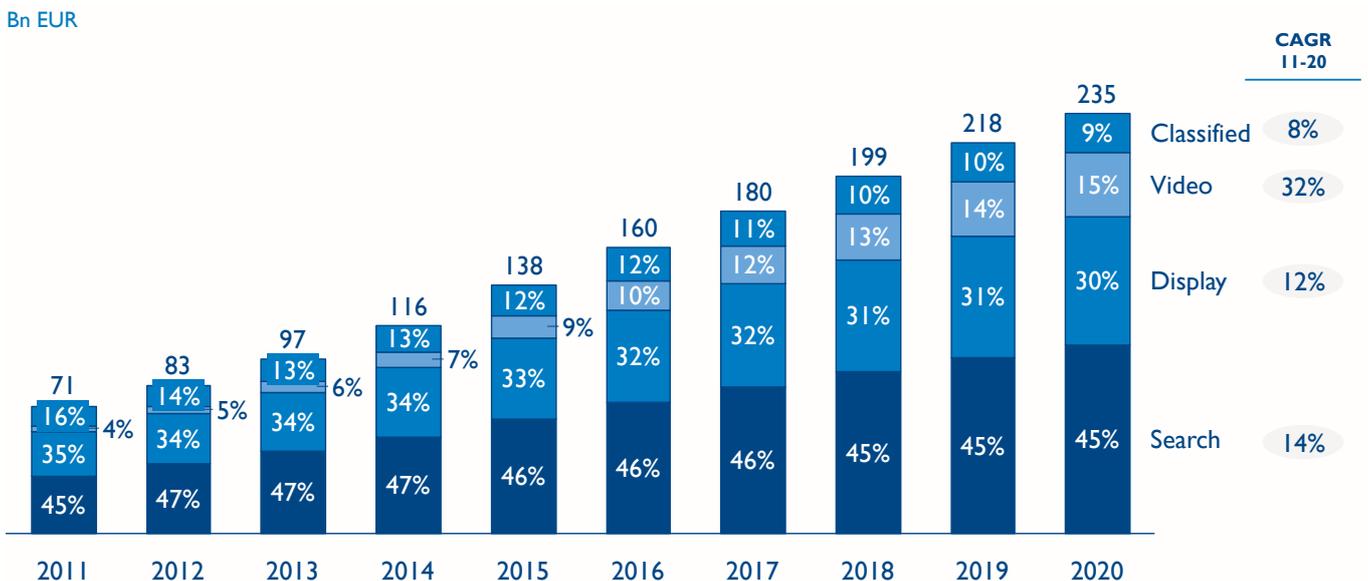
B2B apps: the next frontier

In the last couple of years, apps have gained a central position in daily activities. The ease of developing a native app in iOS or Android has boosted the development of apps and has led to an ecosystem that covers every single aspect of life, from grabbing a cab, dating and managing personal finances to booking holidays. Thanks to the enormous variety of sectors regarding which apps have been developed, the number of downloads has increased exponentially and app developers have been partly able to establish a large-scale user base. However, if the past history of apps has been associated with creating a user base, and consumer-oriented products, the future of apps is focused on new devices, enterprise-oriented apps, disruption in traditional sectors, security and monetization.

From the perspective of new devices, it is undeniable that the popularity of wearables is growing rapidly. This popularity was triggered by the launch of Galaxy Gear and Apple Watch. As penetration of smart watches, fitness devices or VR devices increases, so does the demand for seamless integration of those devices into mobile apps. High-quality apps offering excellent user experience will partially explain the success of wearables. Now that a base of wearable-related apps users is starting to become established, the expected evolution of these wearable apps from a consumer perspective will become more sophisticated, with value-added services for clients (in many cases, at a price). This trend will have the greatest impact on health and activity-related apps, in our view.

The number of apps developed for new devices will not only grow for the consumer segment, but also for enterprises.

Figure 54: Online advertising, by type of advertising, 2011 vs. 2020



Source: Arthur D. Little

Enterprises' demand for mobile apps is expected to skyrocket across all sectors. According to Gartner, by the end of 2017, the demand for mobile apps for enterprises will be five times greater than the internal IT capacity to deliver them. Internet of Things-related apps will gain relevance, especially in automotive, energy, payments and healthcare companies. IoT app developers will have to be able to design and create apps that allow companies to easily capture, organize, manage and visualize the information gathered from the connected devices. In addition, it is key that these apps show high performance rates, so companies can react with agility and implement real-time actions based on the information captured and managed.

Companies' efforts to include in their strategy the development of UX-friendly and value-added apps are rising. These efforts are valuable, but are not sufficient to outperform third-party apps that attack different links of their value chain. The threat in these cases is not from a few 'big sharks' but rather from a shoal of 'small piranha'. See the figure above which uses the retail sector as an example.

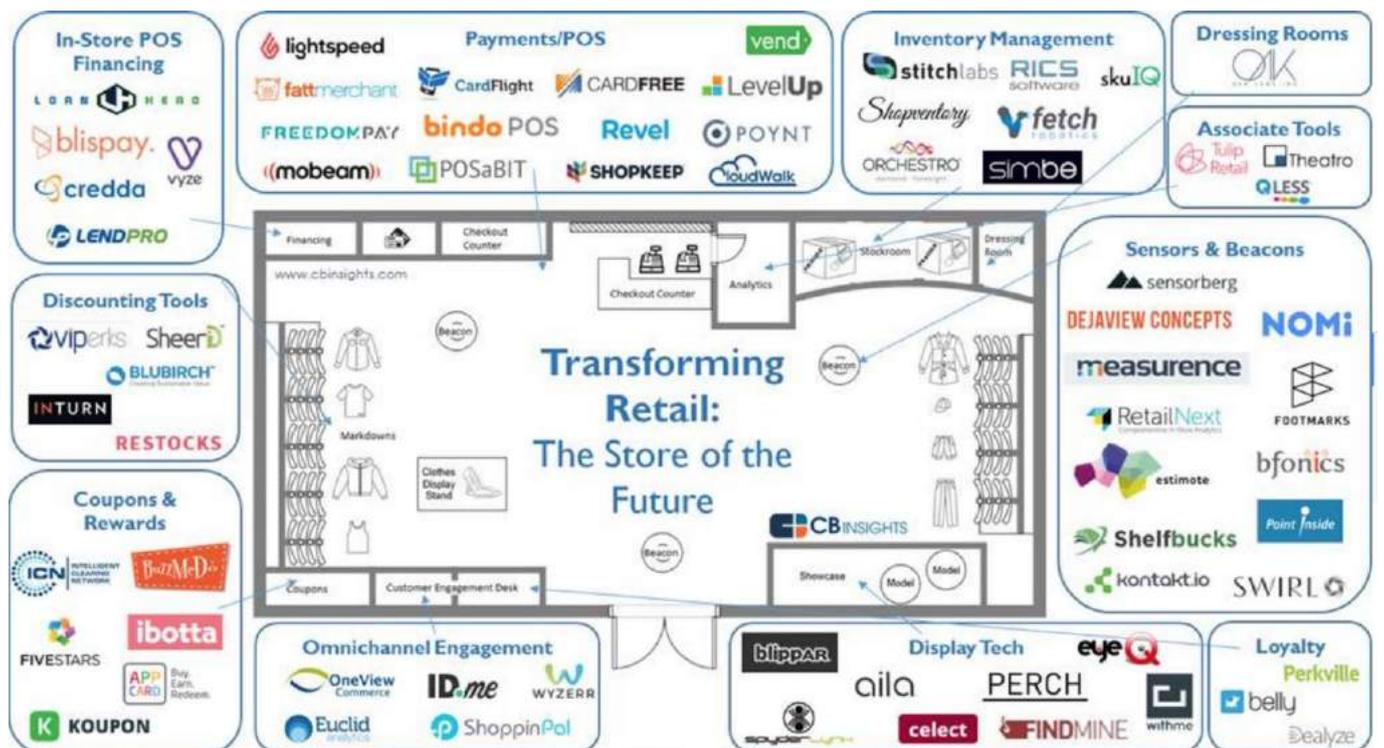
The level of disruption varies from one industry to another. While the media industry has already experienced a radical change, energy, healthcare, logistics, automotive and consumer goods are still at the very beginning of this journey. Telecom, financial services and retail are in the middle of the move (see the figure below).

Security is another critical topic. There currently is a considerable security breach in the app environment. According to Gartner, in 2015, 75% of mobile apps' security levels were below basic security standards. This fact, coupled with the increasing concern from a user perspective about privacy and security, is likely to lead to a push to improve security. It is imperative to lower the leak of sensitive data and solve network and file system security issues. Otherwise, the growth of the app market may experience a slowdown.

Lastly, monetization will be a focus point going forward. Recent developments in monetization suggest that the ways to capture revenue from users in the future will turn around six models: subscriptions, in-app purchases, freemium, pay per downloads, sponsorships and advertising. Regarding the last model, advertising, in-app native advertising will likely gain traction driven mainly by third-party in-app native ads, a type of advertising that is closely linked to those companies successful at monetizing by advertising. This type of in-app ads is expected to account for 12% of the mobile display advertising market.

Depending on the nature, content, engagement potential of the app and the user's profile, app owners will have to decide which models better fits a specific business. Pricing in apps is definitely not a 'one-size-fits-all' game and what works for one type of business won't necessarily work for another. It must be also taken into consideration that monetization should not be

Figure 55: Impact of online solutions in the retail sector



Source: CB Insights

limited to a single monetization model: a combination of models is perfectly feasible.

Social media to become first screen for many processes

The tentacles of social networks have become important customer and user interfaces for many companies, ranging from communication with the customer to customer care, sales and advertising. From the perspective of customer care, customers go to social media looking for agile and efficient answers to their issues, expecting an answer in 60 minutes or less. Currently, 67% of people have used social media as a customer care channel, and this penetration rate of social media is most likely to grow further. Due to their nature, Facebook and Twitter appear to be the social networks more suitable for these kinds of topics in the eyes of consumers.

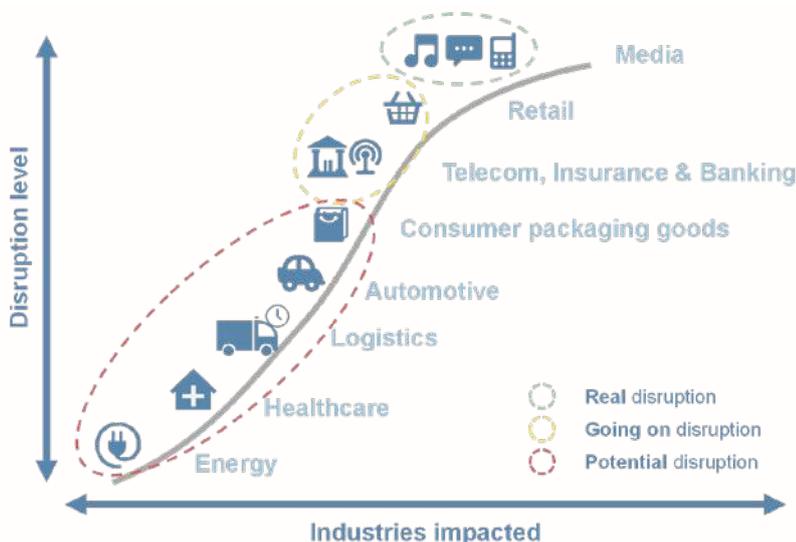
Apart from customer care, social networks are increasing their involvement in the sales process. At the most basic level, they are involved in a ROPO sales cycle (i.e., Research Online, Purchase Offline) at the beginning of the process. Customers go to social media looking for information and reviews of the product in which they are interested. Such is the shift of social media towards commercialisation that Facebook has shifted commercial focus from being a simple platform to connect with friends to being a tool that allows companies to market and promote their products. The involvement of social media in marketing products is evolving so fast that the lines that separate social media from e-commerce are becoming increasingly blurry.

However, brands are not only using social media to sell, but also to advertise their products in a less invasive way, thus

minimizing the impact of ad blockers on their advertising investments. Companies are innovating advertising formats in social media and video ads are becoming an important part of this change. Pinterest, for instance, is starting to include 'cinematic pins' which are motion-based ads that begin to play when the user is scrolling down and stop when the user stops scrolling down. In this case, the user maintains control over the ad, and provided he or she decides to click on the pin, he or she will find an enriched content ad related to the search done. Another example of innovation and motion in the social media ad industry is Snapchat, with its advertising space in its Discover section. In this section, Snapchat created something similar to an interactive magazine, where different media companies have an independent channel with curated material. Brands interested in advertising in Discover must go through Snapchat or any of its channels to place an ad, and since no real targeting is enabled in the social network, they must target through the channels where they choose to place an ad.

Looking at the future from an online perspective, we expect strong evolution of from what has occurred recently. Consumers' exposure to digital advertising, apps and social media will rise, and with this increased exposure, consumers' power will also rise, challenging traditional players in several industries. As a result, online media will pay more attention to user experience, security and privacy, pursuing a balance between those aspects and business requirements. However, the future will not only be about balance, but also mobility. The increasing supply of mobile devices has supported the consumption of online content and day-to-day activities through digital channels from mobile devices, resulting in a strategy shift for developers and business in all sectors towards easy to use/ consume mobile and content, such as video.

Figure 56: Disruption across industries coming from apps



Source: Arthur D. Little

10. Summary and outlook

The media industry is experiencing a massive digital transformation. New online competitors and business models are challenging traditional media players. At the same time, consumers are gaining access to a myriad of new opportunities to consume media. This creates a complex and volatile environment for media companies and the transformation will significantly affect value flows going forward.

A number of trends will shape the industry going forward. 'Hyper-connected' consumers (i.e., online 24/7, on unlimited data plans, using multiple screens) increasingly prefer simply having access to content vs. having ownership of content. 'Consumers-as-producers' generate high-quality content (text, pictures, videos) and disintermediate online and offline aggregators to a certain degree as they build and monetize (significant) own digital followership. 'Consumers-as-editors' exploit personalization features and dedicated online aggregator services to build tailor-made cross-media experiences.

Big data and analytics have enabled customized services and driven business value in the online advertising industry for some time. However, advanced targeting and performance measurement capabilities have also started to enter the offline advertising value chain. Virtual reality (VR) and augmented reality (AR) have emerged as new content consumption platforms. Lastly, block-chain technology is reaching the media industry and promises a more efficient means of managing royalties as well as new business models relying on micro-payments.

The continued pressure on traditional distributors and aggregators has kicked off a wave of consolidation, with participants aiming at full vertical integration across the value chain. This is particularly visible in the TV and video segment, but will also affect other media segments. For players not active in consolidation or vertical integration, this will lead to long-term, structural competitive disadvantages. Despite low barriers to entry in most online media segments, concentration is increasing due to economies of scale. Major positions have been taken (e.g., in online classifieds, video streaming and music streaming, among other areas) and even strong number 2 players could struggle to turn a profit in the long term. Social media platforms have replaced online portals as new 'landing pages' for consumers and are becoming content aggregators, leading to a prisoner's dilemma for content owners and aggregators with own online distribution as to whether to be present on such platforms.

In 2016, global media industry revenue amounted to slightly more than EUR 1 trillion and this is expected to grow to EUR 1.2 trillion by 2020 (+4% CAGR), with North America, Europe and Asia Pacific accounting for >90% of the total. Latin America is expected to exhibit the strongest growth rate over 2011-20, followed by the Middle East & Africa and Asia Pacific. North America and Europe are expected to witness slower growth (~2-3% CAGRs) until 2020. Asia Pacific has the highest online share of all regions (30% of total revenue), followed by North America (29%), Western & Eastern Europe (26%), the Middle East & Africa (16%), and Latin America (12%). All markets should add around 6-8 percentage points per annum in online share until 2020.

The **News & Print** segment is burdened by a continuing structural decline in offline revenue, in particular in North America, Europe and Asia Pacific. Despite considerable online revenue growth, this will not be sufficient to compensate for the offline decline.

The **Printed Books** segment is expected to prove quite resilient to the digital transformation, and online growth is fully complementary.

TV & Video is by far the biggest segment and is expected to experience solid growth (3.6% CAGR 2016-2020), but will remain dominated by offline revenue (>90% in 2016-2020).

The majority of **Music & Radio** revenue is also largely offline (86% in 2016), and offline and online revenue are expected to contribute nearly equally to overall segment growth. The main driver for this development is an increasing importance of live music events in overall segment revenue.

Gaming has traditionally accounted for the highest share in online of all media segments, and between 2016-2020, all of the growth in this segment will likely be driven by online consumption, with overall online share reaching a whopping 75% by 2020.

The digitization of the media industry has led to significant challenges for its major players. Historically, US-based media groups showed higher revenue and profitability growth than their European peers. This was mainly due to a stronger domestic market, rebounding faster from the economic downturn in 2008-2010, and a higher share of audiovisual revenue. Furthermore, the data suggest a link between

scale and performance, with European companies showing substantially lower revenue than their US peers. In addition, most European media groups have sizeable legacy businesses in News & Print, which are experiencing structural declines, thus impacting headline revenue growth negatively. However, as a consequence of this, European companies were forced to diversify aggressively into online segments, with online revenue of some of these companies now accounting for up to 50% (or, in some cases, more) of their total revenue. Going forward, we thus expect to see stronger revenue growth rates for most European players.

In summary, global media will continue to be an attractive growth industry, but dynamics differ by segment and geography. Traditional media companies will need to take (tough) portfolio decisions as the digitization of the industry progresses.

Online growth will be substantial everywhere (+EUR 158bn until 2020), opening up opportunities for traditional media players as well as new entrants. In the mid-term, the online value chain will undergo further fragmentation, resulting in (i) the emergence of a distinct online aggregator business model (e.g., playlists, media-related marketplaces) and (ii) a large number of global, regional and national players competing in online distribution in each media segment. While most segments and markets are still in the fragmentation stage, some countries have already started to see consolidation. In the long term, we expect that online media segments will follow oligopolistic competition with vertically integrated scale players. Thus, any new player should critically assess its ability to achieve long-term scale before entering the online market at this stage.

The traditional value chain should remain intact, but with online growth largely outpacing offline growth, the value share of traditional players will reduce significantly. This will result in a double squeeze for traditional distributors and aggregators: lower incoming funds and higher content cost. The consolidation wave in offline distribution (e.g., physical media retail, box office, pay TV operators, among others) will intensify as existing players strive to concentrate profits of their respective segments. These substantially larger players will then also be in a strong position to offload the margin pressure to offline aggregators (i.e., news and magazine publishers, TV broadcasters, book publishers). This pressure in turn will lead offline aggregators to seek consolidation themselves. Furthermore, traditional players will be forced to seek revenue growth through forceful diversification into adjacent segments (e.g., e-commerce or live events) and a tighter integration of their existing offline media assets.

Content owners and producers will have the strongest hand in the continued digitization of the media industry. Firstly, they will benefit from overall increased demand for their products through offline and online players alike. Secondly, both online and offline players will be willing to pay higher prices for premium content in a search for differentiation. However, content owners and producers will also be preyed upon by offline and online players seeking vertical integration.

Contacts

If you would like more information or to arrange an informal discussion on the issues raised here and how they affect your business, please contact:

Austria

Karim Taga
taga.karim@adlittle.com

Italy

Giancarlo Agresti
agresti.giancarlo@adlittle.com

Norway

Diego MacKee
mackee.diego@adlittle.com

Belgium

Gregory Pankert
pankert.gregory@adlittle.com

Japan

Shinichi Akayama
akayama.shinichi@adlittle.com

Singapore

Yuma Ito
ito.yuma@adlittle.com

China

Russell Pell
pell.russell@adlittle.com

Korea

Hoonjin Hwang
hwang.hoonjin@adlittle.com

Spain

Jesus Portal
portal.jesus@adlittle.com

Czech Republic

Dean Brabec
brabec.dean@adlittle.com

Latin America

Guillem Casahuga
casahuga.guillem@adlittle.com

Switzerland

Clemens Schwaiger
schwaiger.clemens@adlittle.com

France

Didier Levy
levy.didier@adlittle.com

Middle East

Lokesh Dadhich
dadhich.lokesh@adlittle.com

Turkey

Coskun Baban
baban.coskun@adlittle.com

Germany

Michael Opitz
opitz.michael@adlittle.com

The Netherlands

Martijn Eikelenboom
eikelenboom.martijn@adlittle.com

UK

Richard Swinford
swinford.richard@adlittle.com

India

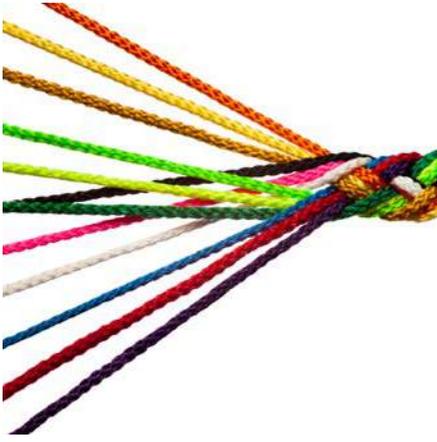
Srini Srinivasan
srinivasan.srini@adlittle.com

Nordic

Martin Glaumann
glaumann.martin@adlittle.com

USA

John W. Brennan
brennan.john@adlittle.com



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