

# **IABM BUSINESS INTELLIGENCE**

## **QUARTERLY DIGEST**

MARCH 2017



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# THE QUARTERLY DIGEST

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The IABM Business Intelligence Quarterly Digest provides IABM members with a varied range of business information about the broadcast industry and the wider global economy in a “digestible” way. The purpose of this report is to enable member companies to keep up with the latest developments in our industry by presenting otherwise scattered information in an orderly and relevant manner.

### Report contents and structure

The analysis is undertaken by our Research Analyst Lorenzo Zanni. We publish the latest news and research findings across a variety of topics, including:

- Current Global Business Environment
- Demand Side of the Broadcast Technology Sector
- Supply Side of the Broadcast Technology Sector
- Focus on a Regional Market

As we approach both BVE 2017 and Cabsat 2017 this edition of the Quarterly Digest will include a focus on the Middle East and Africa region and, exceptionally, a country focus on the UK. Compared to the March 2016 edition of this report, the regional focus has been extended to cover both the Middle East and North Africa and Sub-Saharan Africa.



## Q1 2017: Positive signs

- Recent data from the IMF show that economic activity may slightly pick up in 2017 on the back of resurgent commodity prices and expected fiscal stimulus in North America
- World economic output is expected to grow by 3.4% in 2017, up from 3.1% in 2016
- The US Dollar has continued to be strong in the first quarter of 2017. The British Pound, the Euro and the Mexican Peso have continued to be the worst performers against the US Dollar



# EXECUTIVE SUMMARY OF THE INDUSTRY

## Cyber security at the top of the agenda

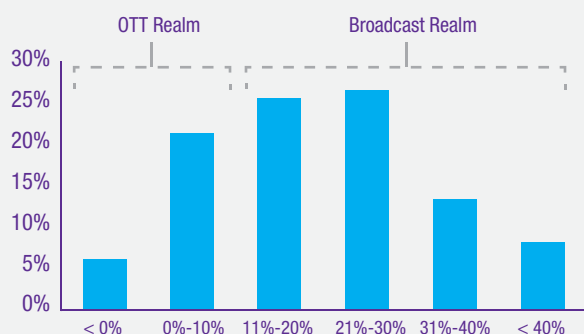
- With video delivery moving to internet distribution and infrastructures migrating to IP, broadcast and media organizations are becoming increasingly concerned about the threat of cyberattacks
- The number of cyberattacks directed at media organizations has soared in recent years – according to Verizon, the entertainment industry suffered 38 cyberattacks with confirmed data loss in 2015
- This has prompted many trade bodies to stimulate more attention to security



## A shifting landscape

- During 2016, OTT players continued to grow revenues as well as increase their spending on original content. Profit margins for online video outlets remain far lower than their broadcast competitors' however
- Broadcasters that plan to bet heavily on OTT may burn some cash in the process unless they find an effective way to monetize online video. According to IABM data, 73% of broadcasters have a profit margin greater than 10% while 47% have a profit margin greater than 20%. Netflix's operating profit margin in 2016 was 4%

**Chart 1: Distribution of broadcast and media companies by profit margin (profit margin groups on the horizontal axis)**

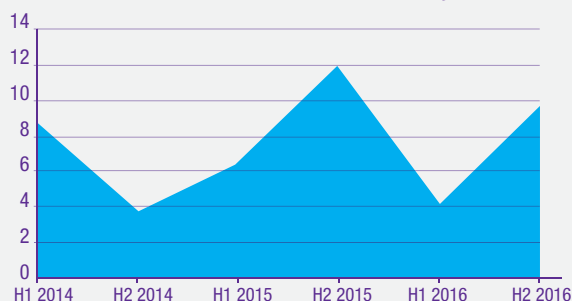


Source: IABM

## Sector's confidence bounces back

- The final results of the December 2016 IABM Industry Trends Survey showed rising confidence among broadcast and media technology suppliers
- Respondents expect significant business growth in 2017 compared to 2016. Most of them are confident that 2017 will represent a good year for specific product segments such as infrastructure and transmission equipment. This is supported by spending drivers such as the post-auction repack process in North America and the launch of ATSC 3.0 in South Korea

**Chart 2: IABM Confidence Ratio, last 3 years**



Source: IABM

## Is AI ready for broadcast & media?

- Artificial Intelligence (AI) was the most talked about emerging technology at the recent CES 2017 – AI can be defined as technology capable of replicating human learning and problem solving skills
- Research on machine learning, deep learning and neural networks has made notable advancements in recent years
- In 2016, some broadcasters began adopting AI applications to make their workflows more efficient





# **GLOBAL BUSINESS ENVIRONMENT**

IABM – March 2017



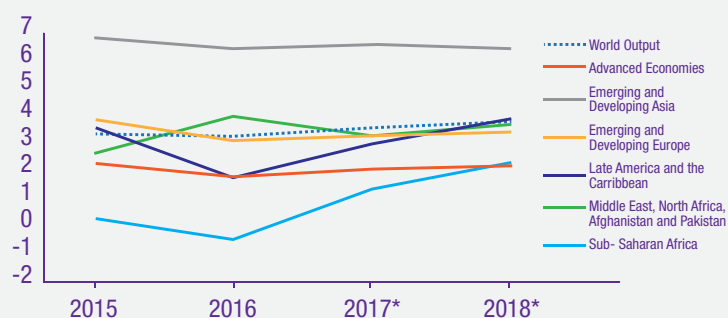
# GLOBAL BUSINESS ENVIRONMENT

## Overview

The first calendar quarter of 2017 has so far showed a slight improvement in the global economic outlook. IMF forecasts show that economic activity may pick up slightly in 2017 on the back of resurgent commodity prices and expected fiscal stimulus in North America.

The chart 3 shows GDP growth for all the world regions in the period 2015-2018 (the figures for 2017 and 2018 are forecasts). World economic output is expected to grow by 3.4% in 2017, up from 3.1% in 2016. The only region projected to experience slower growth in economic activity in 2017 is the Middle East & North Africa, whose resource-rich economies are still going through a period of fiscal stabilization following the steep decline in oil prices in the period 2014 -2016.

**Chart 3: GDP Growth in Latin America regions. 2015-2018 (%)**



Source: IMF

Growth in Latin America is expected to pick up in 2017 after the recession suffered in 2016. A projected improvement in the economic conditions of its major economy, Brazil, should be behind this trend. The same applies to developing Asia, Eastern Europe and Sub-Saharan Africa, which are all expected to experience a rise in economic activity in 2017. Oil-producing countries in the Middle East and North Africa will continue to generate lower than expected oil revenues despite the recent rise in commodity prices. For more information on the business environment in the Middle East and Africa (including Sub-Saharan Africa), please see our Regional Focus later in this report.

The Eurozone economy has bounced back slightly at the end of 2016. Figures released by Eurostat showed a better than expected performance in Q4 2016 – it was the first quarter the Eurozone economy outpaced the US' since 2008 – and showed a decreasing unemployment rate.

Looking at the region's major economies, economic activity in Germany has continued to outpace that in France and Italy with Spain recovering from four years of recession and slow growth. From a geopolitical perspective, 2017 is expected to be a tumultuous year in Europe as Germany, the Netherlands and, more unpredictably, France gear up for their national elections. In France, a victory for the National Front leader, Marine Le Pen, may lead to an exit of France from the Euro – and, possibly, the European Union.

The USA's prospects have remained stable. The Fed hiked its benchmark interest rates in December 2016 and raised its forecast for the number of hikes it expects in 2017. The end of the unprecedented era of expansionary policy by the central bank is expected to give way to increased fiscal stimulus by the government. This is very likely after the election of Donald Trump as President of the USA. The Trump administration is expected to provide some sort of fiscal stimulus to the economy in the form of increased

government spending and/or decreased corporate tax rates. This would imply a consequent rise in inflation expectations and interest rates but, more importantly, an increased appreciation in the value of the US Dollar, which is already at record highs. Trump also promised punitive measures for American companies relying on offshoring to take advantage of labor in lower-wage countries and/or avoiding paying the US corporate tax rate on some or all their profits. He also planned to implement protectionist measures for some imports that are particularly relied on by American companies. The impact of these policies could be significant for US companies importing from abroad and for foreign companies exporting to the US.

The improving economic situation may arguably be endangered by the current political uncertainties around the world. Aside from the Brexit political impasse in Europe, initial relationships between the US and the European Union seem to have taken a wrong turn. More specifically, European leaders are concerned about the anti-trade rhetoric so far adopted by Donald Trump. Recently, the EU Parliament chief Brexit negotiator, Guy Verhofstadt, has labeled Trump as a "threat" to the European Union. As already mentioned before, elections in many European countries may also contribute to sapping investors' confidence in the future of the single currency, which is still very much at risk.

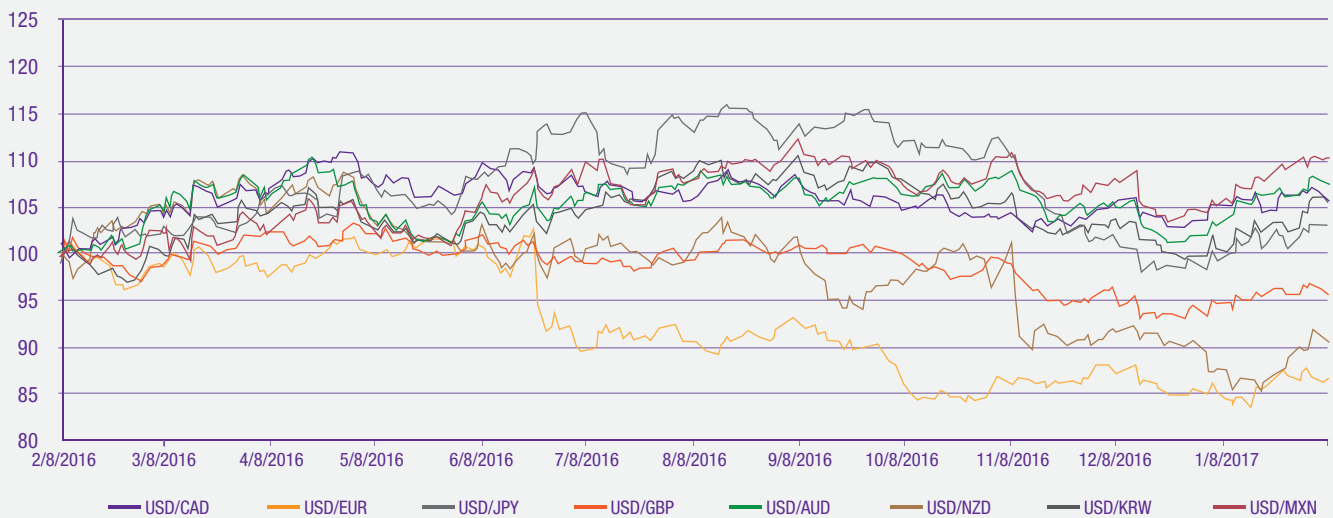
# Exchange Rate Movements

We report the latest swings in major economies' exchange rates and provide an outlook for their possible movements over the coming months. Exchange rates are highly unpredictable but it is still useful to plan ahead and attempt a forecast based on current macroeconomic trends.

The four major drivers of turbulence in foreign exchange markets have been:

- "Brexit" effect
- US Fiscal Policy
- Decline in commodity prices
- Monetary policy in Europe, Japan and the US

**Chart 4: Daily Exchange Rate Movements vs. USD, Feb. 2016 – Feb. 2017 (08/02/2016=100)**



*Source: IABM analysis of PACIFIC Exchange Rate Service data*

Chart 4 plots the major currency movements against the US Dollar during the period. We have given the data a common starting point (beginning of February 2016) to appreciate how different world currencies have moved against the US Dollar. The series that lie below the 100 line have depreciated against the US Dollar whereas the series that lie above the 100 line have appreciated against it. The Euro, the British Pound and the Mexican Peso continued to depreciate against the US Dollar in the last quarter of 2016 and the start of 2017. Other currencies have been relatively stable against the US Dollar. The Japanese Yen finally depreciated against the US Dollar at the end of 2016 – a relief for Japanese exporters.



The trajectory of the British Pound has closely followed Brexit developments, as well as the Bank of England's monetary policy. When the UK voted to leave the EU in June 2016, its value plunged to a record low – the British Pound lost about 15% of its value against the US Dollar between 23 June and 6 July – but stabilized from July onwards despite the rate cut by the Bank of England. This trend continued until October 2016 when the British Pound plunged by more than 6% against the US Dollar in a matter of minutes. The British Pound has gained back some ground against the US Dollar from mid-January 2017 onwards although the outlook for the rest of the year remains dire.

The Euro has continued to lose ground against the US Dollar as a result of the increased likelihood of an extended quantitative easing (QE) program by the European Central Bank (ECB). The ECB may decide to prolong its QE as inflation remains below target.

The Mexican Peso is considered to be highly sensitive to broad-based market sentiment and oil prices – Mexico is one of the largest oil exporters in the world. Its value has also been highly sensitive to the developments of the US presidential election. The Mexican Peso fell to a record low against the US Dollar when the result of the US presidential election was announced. Investors have priced in the possibility of restrictions to the NAFTA agreement that guarantees free trade between the US and Mexico as well as a possible tax on Mexican exports to the US.



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- ◆ The **authoritative reference** on market sizing, segmentation, and forecasting because it is based on the actual sales results of the technology vendor and service providers
- ◆ An **independent report** produced without influence from the commercial motivations of covered companies or report purchasers
- ◆ A **timely reference** on both the performance of the sector and the developments impacting sector performance
- ◆ A **comprehensive review** of the entire media technology workflow, covering over 150 product and service categories and over 3,000 vendors and service providers
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# **THE BROADCAST BUSINESS**

IABM – March 2017



# THE BROADCAST BUSINESS

## The End-User Business

### An Update on Security

With video delivery moving to internet distribution and infrastructures migrating to IP, broadcast and media organizations are becoming increasingly concerned about the threat of cyberattacks. Our March 2016 Quarterly Digest included a discussion of the issue of security in broadcast and media and it seems opportune to revisit this topic a year after.

The broadcast industry has been historically protected from the threat of cyberattacks due to the closed nature of its distribution networks. More specifically, traditional distribution networks such as terrestrial and cable are hard to penetrate for common hackers. With the arrival of internet distribution and networked media infrastructures, the cyber threat has grown in importance; the number of potential vulnerabilities has increased exponentially. Pay-TV operators are moving from STBs to a network of connected devices, with the latter being far more vulnerable to hacks. Broadcast and media organizations are increasingly migrating their technical operations from SDI to IP, with the latter, again, vulnerable to cyberattacks. Almost everything is moving online as broadcasters try to accommodate changing viewing habits and streamline their operations with IP and cloud-based technologies.

The following are some notable cyberattacks directed at broadcast and media organizations over the course of the last three years:

- In 2013, three South Korean broadcasters (KBS, MBC and YTN) were hacked leading to the infection of their computer networks and the compromising of their customer data

- In 2014, Sony Pictures Entertainment was hacked by a group which identified itself by the name 'Guardians of Peace'. The hack led to the premature release of the movie 'The Interview' as well as the compromising of employee and customer data



- In 2015, the French broadcaster TV5 Monde was forced to shut all its channels for 18 hours following a cyberattack. The social media accounts of the company were also hacked. According to The Register, the hackers broke into TV5's network using multiple points of ingress, including supplier networks such as the remote controlled cameras used in the broadcaster's studios

- In 2016, the broadcast signals of some US radio stations were repeatedly hacked. In April 2016, the hackers managed to swap some radio stations' songs with a podcast while in January 2017 an anti-Donald Trump song was maliciously inserted in some radio stations' playlists

Chart 5: Cyberattacks by Industry

Industry	Large	Small	Unknown
Accommodation	10	136	136
Administrative	2	6	10
Agriculture	0	0	3
Educational	8	3	18
Entertainment	1	18	19
Finance	94	14	687
Healthcare	20	18	77
Information	12	12	170
Manufacturing	11	5	21
Mining	6	0	1
Other Service	2	5	4
Professional	4	10	39
Public	122	4	67
Real Estate	0	3	2
Retail	14	101	67
Trade	2	2	0
Transportation	3	1	11
Utilities	0	0	7
Grand Total	312	338	1,340



Source: IABM Analysis of Verizon data

# THE BROADCAST BUSINESS

Arguably, these are not the only cyberattacks with broadcast and media organizations as targets. Research carried out by nScreenMedia in 2016 shows that 28% of media organizations admit to having experienced a cyberattack of some type or another – the research highlights how media professionals are reluctant to share details on security breaches: this figure is almost certainly a significant underestimate. According to the Verizon 2016 Data Breach Investigations Report, the entertainment industry suffered 38 cyberattacks with confirmed data loss in 2015. The same report finds that the main motive behind cyberattacks is financial although perhaps, not surprisingly, a significant proportion of the hacks suffered by broadcast and media organizations were allegedly driven by ideological reasons. Chart 5 shows cyberattacks by industry and by company size (large, small and unknown size) as well as a bar chart representing the total number of security incidents.

Verizon was itself an indirect victim of a recent cyberattack. In July 2016, Verizon acquired Yahoo for \$4.8bn. Two months on, Yahoo admitted to having been victim of a large-scale hack that had led to the theft of at least 500m user accounts. As a result of this, Verizon initially announced that it would back out of the deal. However, more recent reports suggest that Verizon will buy Yahoo – probably, at a lower price – despite the massive reputational damage caused by the data breach.

As already mentioned, cyberattacks are costly, not only in terms of brand image, but also financially. According to a survey of US companies conducted by the Ponemon Institute in 2015, the estimated financial cost of a cyberattack ranges from a minimum of \$1.9m to a maximum of \$65m – with the average being \$15.4m.

Estimated Financial Cost of a Cyber Attack	
Maximum Financial Costs	\$65.0m
Average Financial Costs	\$15.4m
Median Financial Costs	\$11.0m
Minimum Financial Costs	\$1.9m

Source: Ponemon Institute

Various organizations have been trying to stimulate more attention on security. For example, in April 2016, the EBU urged broadcasters to conform with its guidelines regarding cyber security. Andreas Schneider, Chief Information Security Officer at the Swiss public broadcaster (SSR/SRG) and Chair of the EBU Strategic Programme on Media Cybersecurity, said:

*"The broadcast industry has been an isolated technology island for a long time and, therefore, was intrinsically protected. However, with the provision of internet-based*

*services and the convergence of traditional broadcast and information technology, the risk of cyberattacks targeting media companies is now, more than ever before, a real threat"*

In these guidelines, the EBU has tried to give broadcasters recommendations on best cybersecurity practices. The list of recommendations produced by the EBU is given below:

1. Apply the annexed security safeguards when planning and designing their systems, software and services
2. Require potential vendors of systems, software and services to declare their ability to comply with the annexed security safeguards (by completing columns A, B & C) when responding to tenders or requests for technology
3. Define their minimal vendor system acceptance level on the basis of this recommendation with full awareness of the potential risks

DPP and NABA also partnered to promote cyber security at IBC 2016. IABM hosted an AIB masterclass on cybersecurity at the 2016 IABM Annual Business Conference.

It is then safe to expect more scrutiny by European end-users when buying software and cloud-based services. Broadcast and media technology suppliers should be aware of these guidelines when developing new offerings.

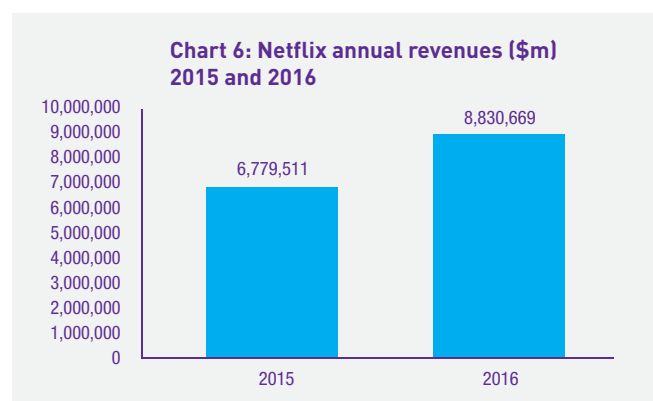




## A Shifting End-User Landscape

### OTT continues to grow

2016 was an extraordinary year for OTT growth. Netflix started the year launching its services in over 190 new countries. Netflix grew its revenues by 30% between 2015 and 2016, ending the year with a better than expected performance in both domestic and international markets. Profits grew as well with the latest accounts showing a 4% profit margin for 2016.



Source: Company Filings

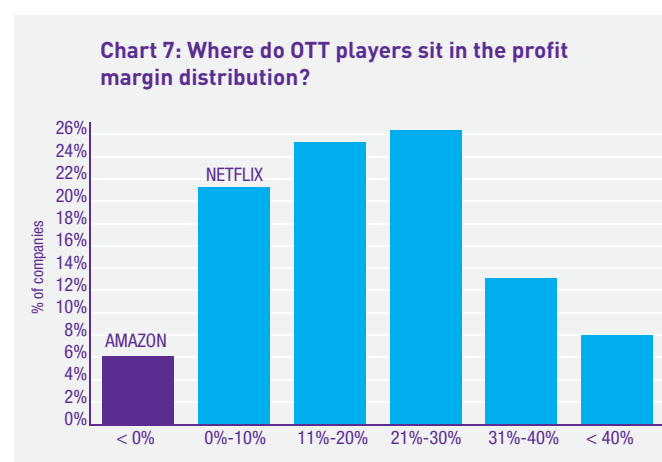
Amazon Instant Video continued to grow its customer base both in Europe and North America. Amazon does not break out revenues for its Instant Video services but reports them in Europe. According to IABM research, Amazon Instant Video services in the UK and Germany reaped about \$400m in 2015 with a revenue growth between 2014 and 2015 of over 30%. Amazon Instant Video still operates at a loss in Europe.

It is worth noting that spending on original content by major OTT operators has reached record highs and is expected to further increase in 2017. Netflix and Amazon spent over \$8bn in original content in 2016. Both Netflix and Amazon executives have announced that this will rise in 2017 – Netflix pledged to spend one billion dollars more compared to 2016. In terms of spending on original content, Netflix is second only to ESPN which spent \$7.6 billion on content in 2016.

Price, convenience and content exclusivity represent competitive advantages for OTT operators such as Netflix and Amazon. Traditional broadcasters threatened by the rise of OTT are trying to attract digital eyeballs with the launch of new media offerings.

### Traditional operators play catch-up

The slim profit margin reported by Netflix (and the loss reported by Amazon in Europe) highlights the differences between traditional and internet distribution of video. Internet distribution introduces variable costs that depend on the number of online viewers/subscribers served. Also, OTT subscriptions are much less costly than traditional Pay-TV subscriptions. The infographic below shows the distribution of profit margins in the IABM End-User Index sample:



Source: IABM

According to IABM research, 73% of broadcasters have a profit margin greater than 10% while 47% have a profit margin greater than 20%. Therefore, many broadcasters that plan to bet heavily on OTT may burn some cash in the process unless they find an effective way to monetize online video. This is the main challenge for traditional broadcasters at the moment.

As already mentioned, broadcasters are launching new media offerings to stay ahead of the curve. To do this, some of them are resorting to acquisitions to internalize technology expertise or take advantage of a vast library of content.



In August 2016, Disney invested \$1bn in BAMTech, a streaming technology service provider. The investment of Disney in BAMTech aims at internalizing a powerful streaming technology with the objective of launching a direct-to-consumer OTT offering. BAMTech will collaborate with ESPN to launch and distribute a new multi-sport subscription streaming service in the future. Disney's executives think that launching a (cheaper?) multi-screen streaming offering will counter the decline in the ESPN subscriber base. BAMTech also partnered with Discovery in November 2016 to form BAMTech Europe, a streaming technology provider catering to European media customers.

# THE BROADCAST BUSINESS

The proposed acquisition of Time Warner by AT&T for \$85.4bn in October 2016 looks set to reshape the current US media landscape. This deal aims at battling Netflix for streaming customers as AT&T intends to leverage Time Warner's content (including HBO & Warner Bros.) to support its OTT offering. In fact, AT&T started offering three separate streaming services (DIRECTV NOW, FreeVIEW and Fullscreen) at the end of November 2016. An AT&T statement said:

*"This is rules-free TV for anyone in the U.S. who wants to stream shows and movies anytime, anywhere. For the more than 20 million U.S. households who have dropped cable or are flirting with cutting the cord, we're now delivering video over a technology platform that will have multiple product capabilities, the first of which we're unveiling today"*



With the telco market reaching maturity, AT&T aims at increasing the share of revenues it derives from video – at the moment, AT&T video revenues represent only 21% of its total sales. If the deal is finalized, AT&T will gain access to a premium content catalog which could be delivered through its massive distribution network – including mobile and fixed broadband as well as satellite following the acquisition of DirecTV, which was completed in July 2015.

Disney and AT&T's stories show that some major end-users are increasingly investing in the deployment of new media offerings such as subscription video on demand services. Advertising is yet to be a credible revenue driver for OTT services.

It is worth mentioning that some major traditional broadcasters are going to prioritize their digital offerings over their linear broadcasts for the first time in 2017. For example, the BBC plans to make the new seasons of its series available on the iPlayer for binge-watching before their linear broadcasts. This would transform the iPlayer from a catch-up service into a competitor of the BBC's linear channels. In North America, CBS plans to release some of its major series – including Star Trek – exclusively on its SVOD offering.

Broadcast and media has been one of the most profitable business verticals in the last three decades. This is changing as content increasingly moves to online distribution.



## IABM is offering much more than a stamp of approval to industry collaboration

The Industry Collaborative Group (ICG) Endorsement Program is a major IABM initiative and is designed to encourage collaboration across a wide range of industry issues and opportunities, from best practice to standardization and interoperability.

IABM's vision is for a universally recognized framework where endorsed collaborative groups will be supported, promoted and encouraged to fulfil their potential and move forward in an open, constructive environment to the benefit of the wider industry. IABM will host and chair meetings, provide technological expertise, expand internationally, provide space at shows and much more.

**Applications for endorsement are invited from all industry collaborative groups. More information and details of how to apply can be found at [www.theiabm.org/icg](http://www.theiabm.org/icg)**



### ENDORSED GROUPS





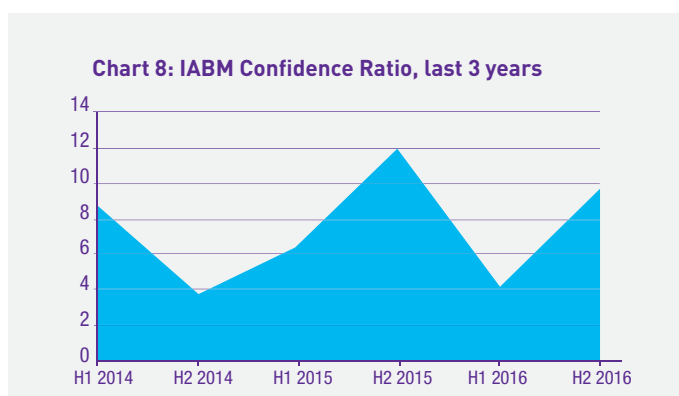
# The Supplier Business

## IABM Research

IABM recently published results from one of its main reports: the IABM Industry Trends Survey. Below, we provide a brief snapshot of this report and an overview of 2016 as well as an outlook for 2017.

### IABM Industry Trends Survey – December 2016

The Industry Trends Survey is a biannual qualitative report on the state of the broadcast and media technology industry. It is based on responses from senior decision makers in IABM member organizations representing a broad cross-section of companies in the broadcast and media technology sector globally. Only member companies that complete the survey have access to the full survey results.



Source: IABM

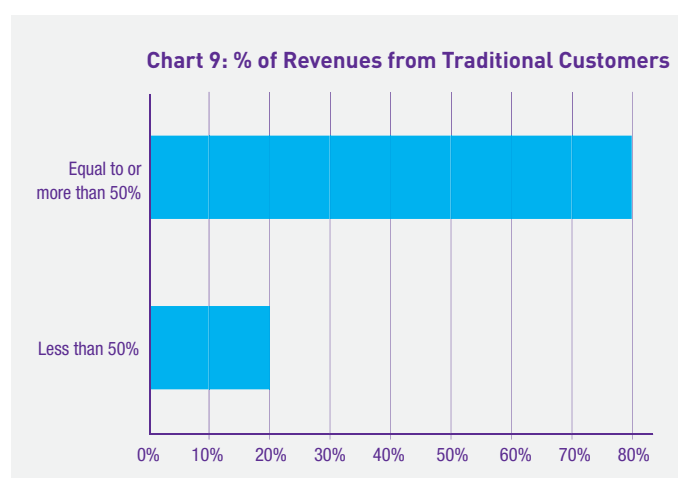
The results of the latest edition of the survey (December 2016) showed that confidence in the broadcast and media technology industry increased in the second half of 2016. The IABM confidence ratio for the year ahead was stronger at 9.7 compared to 4.2 in H1 2016. Also, short-term confidence grew on the back of increased sales deriving from the Rio Summer Games.

Anecdotal feedback showed that respondents expect significant business growth in 2017 compared to 2016. Some research participants reported that their companies have had to re-invent themselves and go through a difficult time to reach this state of expectations. Others are confident that 2017 will represent a good year for specific product segments – such as infrastructure and transmission equipment. This is supported by spending drivers such as the post-auction repack process in North America and the launch of ATSC 3.0 in South Korea.

It is worth noting that some comments highlighted that important 2016 geopolitical events such as Brexit and the election of Donald Trump are perceived as potential business “disrupters” for 2017. Brexit, which is due to be triggered by the end of March 2017, carries uncertainty and the risk of future trade restrictions between the UK and the EU. The protectionist views of the new President in

the US are also seen as potentially harmful although his plans to boost government spending and slash the corporate tax rate may turn out to be a boon to the economy, at least in the short-term.

This survey included some new questions on broadcast and media technology suppliers’ spending and reliance on traditional customer base. Chart 9 shows that 20% of research participants derive less than 50% of their revenues from traditional broadcast customers with the rest deriving more than 50%. On average, research participants’ reliance on traditional customers stood at 68%. The other questions showed that broadcast and media technology suppliers spend heavily on R&D and trade shows.



Source: IABM

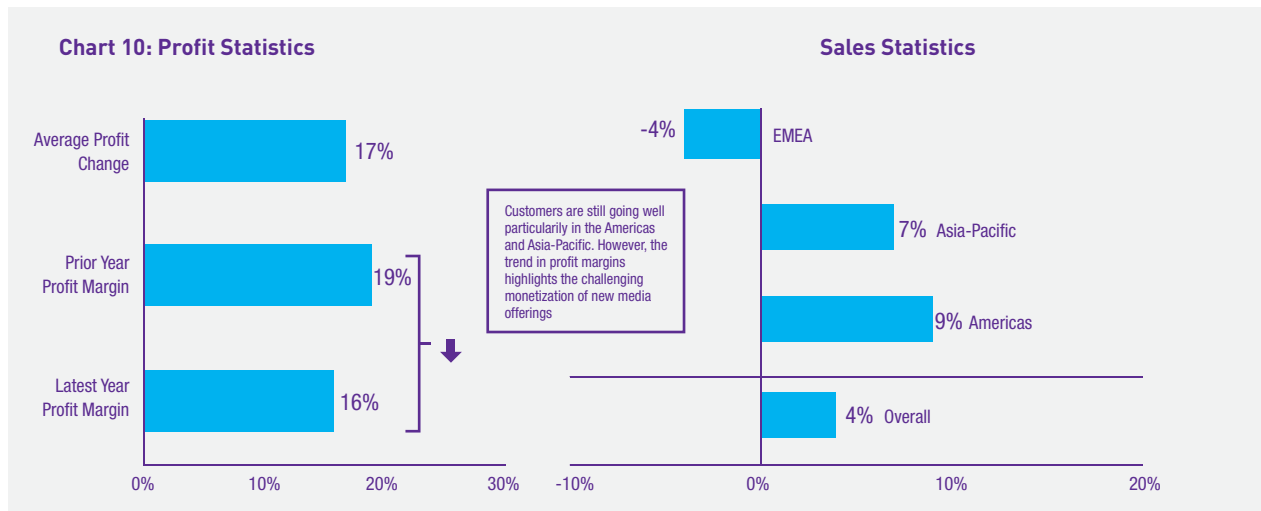
A snapshot of the survey contents is provided below:

- Introduction
- Executive Summary
- Part 1: Confidence
- Part 2: Products, Revenues & Profits
- Part 3: Order Growth & Supply Chain
- Part 4: Prices
- Part 5: Investment
- Part 6: Skills & Training
- Part 7: Mergers & Acquisitions

# THE BROADCAST BUSINESS

## Highlights of 2016

2016 will be remembered as a year of great change for the broadcast and media industry. As mentioned previously, OTT continued to gain ground although traditional broadcasters reported positive results. Figures presented at the 2016 IABM International Business Conference in December 2016 showed that broadcasters are still growing revenues and profits. A snapshot of the preliminary analysis of the End-User Index data is presented below:



Source: IABM

On average, broadcasters are growing revenues by 4% and profits by 17%. The average profit margin has decreased by three percentage points in the last year.

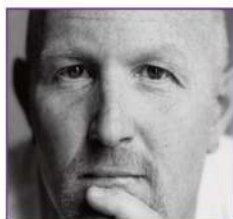
In developed markets, end-users are focused on developing their new media offerings and making their media technology infrastructures as efficient as possible. Various trends such as the general decline in advertising revenues, the rise in the cost of sports rights and the increased political pressure on public service broadcasters are exacerbating this situation.

In developing markets, end-users remain focused on long-standing technology transitions such as the migration to digital broadcasting, HDTV and file-based workflows. Traditional broadcast and media technology suppliers are increasingly turning to these markets to boost their sales of legacy product/service offerings.

As far as broadcast and media technology suppliers are concerned, H1 2016 was negative with both financial indicators and confidence plummeting to record lows. In H2

2016, broadcast and media technology suppliers' performance improved markedly thanks to renewed product/service offerings and the cyclical demand accruing from the Rio Summer Games. We have counted over 25 publicly announced broadcast and media technology deals related to the coverage of the 2016 Summer Games. These deals involved the sale of products such as ingest management systems, cameras, lenses, audio equipment, LED displays, storage & playout servers, video processing technology, logistics & management software, test & monitoring equipment and graphics software (just to cite some). Services such as outside broadcast, remote production & cloud hosting were also supplied to broadcasters covering the event.

However, the future for broadcast and media technology suppliers hinges on more than cyclical demand accruing from sporadic events. A plethora of emerging technologies is changing the way media operations are run, from content management to delivery. Opposite, we analyze some of the most important trends to watch out for in 2017.



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## Outlook for 2017

2017 looks set to be a better year as highlighted by our Industry Trends Survey data. According to the anecdotal feedback we have received, broadcast and media technology suppliers believe that 2017 will be characterized by increasing revenues from traditional product/service offerings and rising adoption of emerging technologies.

We briefly list some of the most relevant spending drivers for 2017 below:

- **End of Spectrum Auction in the US:** The FCC's Spectrum Auction that started in March 2016 is about to finish at the time of the writing. The auction's aim was repurposing UHF spectrum for mobile broadband use. The auction process lasted longer than expected due to the gap between demand and supply – wireless operators repeatedly failed to bid up to broadcasters' clearing target. In Stage Four, broadcasters significantly lowered their clearing target to \$10bn (for 70MHz). Bidders finally met (exceeded) their expectations by offering \$18.2bn. At the time of the writing though, demand still exceeds supply and bidding will continue until there is a match between the two. Broadcasters will still receive at least \$10bn for the sale of their spectrum usage rights. 2017 will be the year of Re-Pack for television stations that participated in the auction and opted for moving their channel(s) to a different frequency. These television stations will have 39 months to vacate their spectrum and complete the move – they will be reimbursed by the FCC for the costs of Re-Pack. The Re-Pack obligation for stations moving frequency will drive investment in transmission-related equipment
- **ATSC 3.0:** ATSC 3.0 is the next-generation terrestrial system that will provide broadcasters with additional spectrum efficiency, the possibility to deliver a personalized experience to viewers and enhanced video quality. The work on the new DTV system is coming to an end as it should be finalized by NAB 2017. The new FCC Chairman, Ajit Pai, has recently said that he intends to promote the new standard. However, the USA will not be the first place where ATSC 3.0 is adopted as some South Korean broadcasters launched it early in 2017. SBS, a South Korean terrestrial broadcaster, started offering ATSC 3.0 DTT services in February 2017. It remains to be seen when ATSC 3.0 will be adopted by US broadcasters

- **4K/UHD:** 4K/UHD adoption is still lower than expected for broadcast and media technology suppliers as broadcasters continue to be reluctant to deliver video in the new format. With regard to this, South Korea and Japan have been outliers. Broadcasters in both the countries have already launched regular 4K/UHD offerings. In South Korea, more 4K/UHD adoption is likely to be seen as the country prepares for the 2018 Winter Games in PyeongChang. Moreover, with the upcoming adoption of ATSC 3.0, South Korean terrestrial broadcasters are set to start broadcasting in 4K/UHD

- **Cloud:** 2016 has been a key year for cloud adoption. Broadcasters have become more comfortable with adopting the technology and this is likely to continue in 2017. In an interview with Multichannel News, John Honeycutt said that about 80% of Discovery's core IT infrastructure will be in the cloud by the end of next year. By mid-2017, 100% of its content will be cloud-based with the exception of live sports programming

- **IP:** 2017 is likely to be a key year for IP. Progress has been made in terms of collaboration and interoperability and evidence shows that media organizations are eager to migrate their infrastructures from SDI to IP. According to a study recently produced by SAM, most respondents in both Europe and North America are preparing to implement the transition in the next nine months. The main reasons to migrate to IP are increased efficiency and flexibility of infrastructures

- **AI and Analytics:** Recent developments show that AI technology is under the scrutiny of some major broadcasters (this is the focus of our next section) Undoubtedly, AI took center stage at CES 2017. The potential impact of the technology on broadcast and media (and our lives) could be immense. Data analytics technologies are already being adopted by end-users to decipher their audiences' preferences and improve operational efficiency (see our December 2016 Quarterly Digest for more information on this). Data is now recognized to be a key factor for broadcasters' success and more money is likely to be spent on this in 2017

The next section looks at AI and how this fascinating technology could influence broadcast and media.

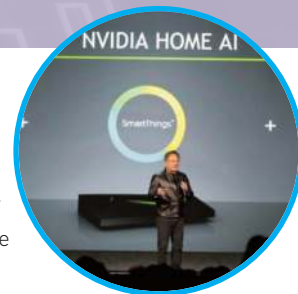
# THE BROADCAST BUSINESS

## Is AI ready for Broadcast & Media?

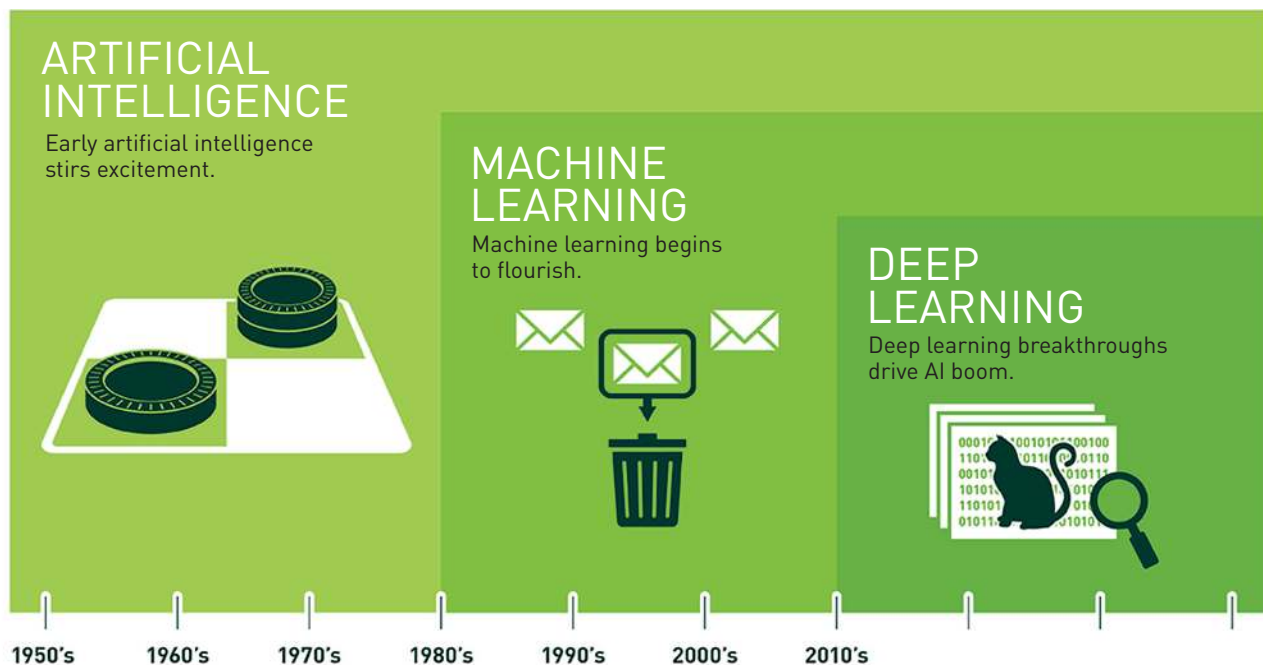
Artificial Intelligence (AI) was the most talked about emerging technology at the recent CES 2017, the world's biggest technology show. Visitors could try several AI products, from smart toothbrushes to intelligent assistants, on the show floor. The main takeaway from the show was that 2017 would be a key year for AI.

As opposed to traditional statistical modelling techniques, AI can be defined as intelligent technology capable of replicating human learning and problem solving skills. Today's AI technology is based on deep learning, an algorithmic technique focused on the optimization of neural networks. Neural networks are a system of hardware and/or software modeled to mimic neurons' interconnections in the human brain. They are organized in different layers to process the raw information – each layer receives the

processed information from the preceding layer. The output layer generates the answer after the preceding layers have processed the information available. The network can then “learn from its mistakes” by applying different weightings to different input streams on the basis of their contributions to getting the right answer. In this way, neural networks can adapt to the reality surrounding them. As opposed to deep learning using neural networks, early applications of AI were focused on machine learning. Machine learning algorithms parse large amounts of data and analyze it to make predictions on the real world. According to NVIDIA, deep learning and neural networks have enabled a more effective use of machine learning. A timeline of the history of AI is given below:



Nvidia at CES 2017

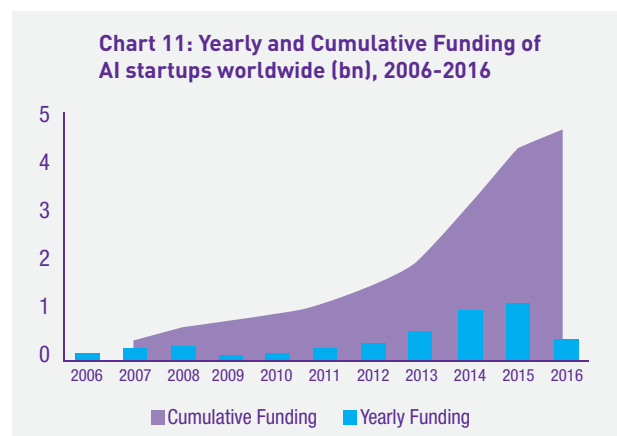


Source: Nvidia

AI has been considered more a craze rather than an actual emerging technology for decades. However, research on machine learning, deep learning and neural networks has made notable advances in recent years with the focus moving on to how the technology can be applied to practical use cases. Today, AI powers successful consumer products such as the Amazon Echo as well as Google and Facebook's internet services for search, visual recognition and translation – not to mention driverless cars.

This section aims at exploring the “dark side” of big data, which is AI. AI is widely considered to be a controversial topic from an ethical perspective as many commentators have highlighted its possible negative effects on employment through the automation of routine tasks. In our previous Quarterly Digest, we discussed the other, less “dark”, side of big data: predictive analytics. As opposed to AI, predictive

analytics is already being used in many broadcast and media organizations.



Source: Statista

Recent research shows that AI is already more than a passing fad. According to data from Statista, funding of AI startups worldwide surpassed the \$4bn mark in 2015 (see cumulative funding series on Chart 11) with a peak of \$1.16bn only in 2015. All the major technology companies such as Google, Facebook, Amazon, Apple, IBM and Microsoft have invested heavily in AI in recent years. Microsoft created Microsoft Ventures in January 2016. Microsoft Ventures is a venture capital fund focused on “investing in AI companies focused on inclusive growth and positive impact on society”. Google acquired the AI startup DeepMind in 2014 for \$400m (one of the largest AI acquisitions to date). Apple acquired the AI startups VocalIQ and Emotient in 2015 and 2016 respectively. According to IDC, AI revenues are set to grow from \$8bn in 2016 to \$47bn in 2020.

AI applications to the broadcast and media industry have been rare so far with only a few suppliers launching offerings that included some AI elements in 2016. Most of these offerings incorporated machine learning applications in broadcast and media workflows. However, major broadcasters are already beginning to focus on AI and how this emerging technology could benefit their organizations. In 2016, some broadcasters started adopting AI applications to make their broadcast and media workflows more efficient. Commercial broadcasters are focusing on using AI to support their advertising sales while Pay-TV operators are adopting AI to automate operations and boost operational efficiency.

Turner was the first broadcast and media company to apply IBM’s Watson technology to ad sales in February 2016. Turner decided to adopt Watson to develop a cognitive technology for ad sales and power its recommendation engine. In the press release outlining the deal, Turner said that the main benefits of Watson would be the following:

- *“Obtain actionable insights about advertisers and trends in their respective industries from news feeds, analyst reports and social media”*
- *“Analyze advertisers’ historical advertising spend to uncover alternative ad spending strategies that project forward looking business requirements and competition”*
- *“Learn from user feedback to provide relevant information for brand profiling and offering solutions to advertisers”*

According to IBM, Watson is used by broadcast and media customers to examine social posts, online feedback and images. Channel 4 has also been investing in AI. The broadcaster created an in-house Data Planning & Analytics team in 2011. Since then, it has been developing machine learning techniques for customer segmentation and targeted advertising. Sky has founded an Analytics and Customer Insight department as well. In 2016, the Pay-TV operator partnered with RAVN Systems, a leading AI service provider, to automate the review of its EPG. In 2016, Liberty Global,

Europe’s largest triple play operator, identified AI as one of the three most important technologies to focus on over the next few years – along with IoT and wireless delivery. Liberty Global plans to use AI algorithms to improve (and automate) the efficiency management of its distribution network. In the US, AT&T is planning to use AI in the same way.

As already mentioned, AI elements are beginning to be included in some broadcast and media technology product offerings. For example, Evertz presented inSITE, its new product offering, at IBC 2016. On the product



brochure, inSITE is described as a log management, analytics and operational intelligence platform for broadcast and media facilities. The product includes various data analytics and visualization tools as well as assisted machine learning functionalities. At IBC 2016, GrayMeta, a provider of metadata solutions for content owners, announced the integration of its offerings with Microsoft Azure. GrayMeta’s technology blends metadata and machine learning to provide seamless asset search. Various IT companies such as Microsoft, IBM and Oracle provide AI solutions to the media & entertainment vertical. Moreover, some AI startups are looking at media as a promising market to increase their revenues. Veritone, a cloud-based AI technology supplier focusing on media customers (its customers include ESPN, Cumulus, CBS Radio and iHeart Radio) provides ad-tracking, verification analytics, media capture and search capabilities.

In January 2017, Veritone partnered with TuneIn, the world’s largest audio streaming network, to provide near real-time analytics on TuneIn programming. TuneIn was the first streaming customer for Veritone. Signal Media, a UK-based media technology provider that raised £5.8m investment at the end of 2016, uses AI to scan and analyze news stories. A plethora of technology companies specialized in AI technology could therefore emerge as an important resource for end-users looking to streamline their businesses.

It is important to note that AI is not only being used in operations and technology management. AI has also been used in creative tasks such as creating the optimal movie trailer, composing music or writing a screenplay. For example, Fox used IBM’s Watson technology to create the optimal movie trailer for ‘Morgan’.

AI may not be ready to make a meaningful impact on broadcast and media yet but we will surely see (and hear) more of it in 2017. With broadcast and media technology customers increasingly focused on automating manual tasks to reduce costs, AI-based solutions could soon be implemented.



The background of the entire page is a silhouette of a savanna landscape at sunset. On the left, a large, gnarled acacia tree with several bird nests in its branches dominates the foreground. To the right, two giraffes stand on a grassy plain, their long necks reaching towards the sky. The sky is a gradient of orange, yellow, and blue, with soft clouds. The text is overlaid on the upper portion of the image.

# REGIONAL FOCUS: **MIDDLE EAST AND AFRICA**

IABM – March 2017

# REGIONAL FOCUS

# MIDDLE EAST AND AFRICA

## Market Overview

This edition of the Quarterly Digest includes a Regional Focus on the Middle East and Africa market ahead of Cabsat 2017. Compared to our March 2016 Quarterly Digest, we have decided to extend the reach of our analysis to Sub-Saharan Africa to cover an additional emerging market.

Middle East and Africa is a vast region made up of two different geographies that have similar economic and broadcast fundamentals. The Middle East and North Africa region is more economically and technologically developed than Sub-Saharan Africa with the exception of South Africa. It includes countries such as the GCC states that boast standards of living comparable with North America and Europe. Africa's standards of living still lag behind most of the world's and its technology infrastructure is largely underdeveloped.

Therefore, the transition to digital broadcasting represents the most important driver of broadcast and media technology spending in Sub-Saharan Africa with other transitions (HDTV, 4K/UHD, OTT) still at early stages. For these reasons, while describing the Middle East and Africa region, we will often make separate observations for the Middle East and North Africa and Sub-Saharan Africa.

From a business environment perspective, some challenges remain to be faced in this part of the world. For instance, geopolitical turmoil has represented a threat to business in this region. The fall in oil prices has ravaged the budgets of oil-exporting countries and triggered numerous currency depreciations. Oil prices, which have already recovered in the second part of 2016, are set to gain back more ground in 2017. Political upheaval in Sub-Saharan and North Africa has continued to harm business activity.

In the Middle East and North Africa, the decline in oil prices has had a negative impact on broadcast technology spending by broadcasters based in oil-exporting countries. In fact, some broadcasters backed by state aid saw their budgets cut back following the decline in oil revenues.

In spite of all this, the region represents an attractive business opportunity for broadcast and media technology suppliers. In fact, many suppliers experiencing overall revenue declines have registered positive results in the region during 2015 and 2016. Also, companies such as Akamai and Riedel have opened new offices in the region during 2015 and 2016 to better serve local businesses.

Most of the African continent still has to transition to digital broadcasting. Some countries such as South Africa, Nigeria, Ghana and Kenya are currently in the midst of switching off their analog signals. This will drive significant investment in transmission infrastructure in the next four years.

In most of the Middle East and Africa region, free-to-air television is largely dominant although Pay-TV penetration has been slowly rising in recent years. Piracy is a major challenge in the Middle East and Africa.

Some major operators have stepped up to safeguard Pay-TV rights and combat piracy. Most notably, OSN launched a "Do the Right Thing" campaign against piracy and has been actively engaged in informing the authorities of any illegal operations run by third parties. According to OSN, more than 50% of families coming from the Indian subcontinent into Gulf States use illegal receivers.

OSN has been one of the advocates of the Anti-Piracy Coalition, a task force of broadcasters, content owners and satellite operators against piracy. For instance, the Dubai court fined an illegal IPTV provider after OSN had filed an official complaint against it in 2016. OSN activism has been followed by Ayman's Department of Economic Development which has conducted raids to confiscate illegal set-top boxes.

Some of the major broadcasters in the region are OSN, beIN, MultiChoice and Starz. IPTV offerings have been mostly launched by telecom operators such as Telecom Egypt and Mobily. Pure OTT operators such as icflix and Istakana have recently been threatened by increasing competition from the expansion of Netflix in the region and the deployment of "TV Everywhere" initiatives by traditional operators such as OSN and beIN.

The primary delivery means in the region is satellite with IPTV on the rise, particularly in the Middle East and North Africa. SVOD is still not widespread as low broadband penetration and quality still challenge its development. However, the situation in some countries is expected to improve in the coming years as governments roll out national broadband plans. Poor payment infrastructure is also a constraint to SVOD development.

The problem of piracy makes digital rights management and conditional access systems one of the most in-demand technologies in this region. Traditional broadcasters expanding their offerings with OTT services on various connected devices also require additional security measures such as geo-blocking, as highlighted by recent deals struck by broadcast and media technology suppliers in this region.

With the expansion of SVOD, there is also a need to provide effective payment measures for online customers. Istikana has introduced a pay-by-SMS service for its customers, thus avoiding the need to use debit or credit cards.

# REGIONAL FOCUS – MIDDLE EAST AND AFRICA

Satellite HDTV is particularly developed in the Arab states with an increased number of satellite channels being delivered in HD format in recent years. The majority of Pay-TV services in Sub-Saharan Africa are also delivered through satellite although the total number of HD channels provided is significantly low compared to the Middle East and North Africa. Satellite service providers have greatly expanded their capacity in this region in recent years.

The transition to file-based workflows is still a relevant spending driver for some TV stations in this region while the transition to IP-based infrastructures is at only an early stage in the Middle East and North Africa.

Consumers' appetite for higher resolutions may also translate into increased spending on UHD TV sets, particularly in countries with higher GDP per capita. However, UHD investment by broadcasters is yet to materialize.

Subtitling and dubbing represents another challenge in the Middle East and North Africa as viewers, particularly in the GCC states, are mostly expatriates and demand content in a variety of languages and dialects.

The 22nd edition of the FIFA World Cup is scheduled to take place in Qatar in 2022; Qatar will be the first Arab country to host the tournament. The event broadcasting rights for the MENA region have been won by beIN. This event will arguably drive broadcast technology spending in the region, despite the small size of the host country. Interestingly, various sources confirm that Qatar intends to build an underwater studio costing US\$30m for the coverage of the World Cup. The development of a 25,000 kilometer fibre-optic IP network covering the whole country may also allow broadcasters to rely on IP-based broadcast solutions, which will arguably be more pervasive in live production by 2022.



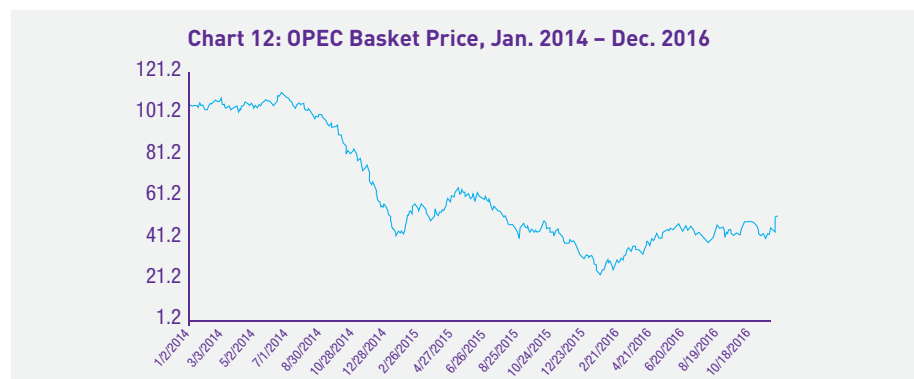


## Business Environment

The business environment in the Middle East and Africa significantly deteriorated in 2015 and 2016. Oil prices are one of the most watched economic indicators in this region (particularly in the Middle East) as many countries are heavily dependent on oil exports. The decline in oil prices during 2015 has undoubtedly been a negative shock to broadcast and media technology demand in this region for two important reasons:

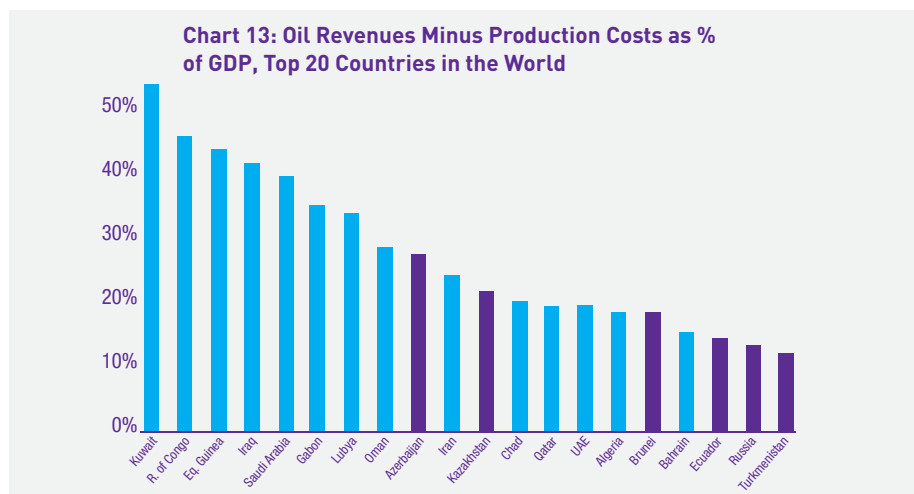
- Most broadcasters in the Middle East and North Africa are state-funded or backed by private companies that rely on oil to drive their revenues. The fall in oil prices has caused a decline in their revenues and a consequent cut in broadcast and media technology spending – notably, Al Jazeera, a state-funded broadcaster, which cut about 500 jobs (10% of its workforce) worldwide in 2016
- The decline in oil prices has triggered steep currency depreciations in countries where oil revenues represent a high share of government's total revenues (particularly in Africa as most currencies in the Middle East are pegged to the US Dollar). This has caused a rise in the price of broadcast equipment and services imported from abroad

Oil prices gained back some ground in 2016 and look set to grow further in 2017 as a result of the recent OPEC decision to cut oil production for the first time in eight years. The trend in oil prices (OPEC Basket Price) from January 2014 to December 2016 is illustrated in the chart below.



Source: OPEC

The chart below shows the top 20 countries in the world ranked by the percentage of GDP derived from oil proceeds (revenues minus production costs). The columns coloured in blue are countries that are part of the Middle East and Africa region. The figure shows that 14 of the 20 economies most dependent on oil revenues are in the Middle East and Africa region.



Source: World Bank

# REGIONAL FOCUS – MIDDLE EAST AND AFRICA

## Business Opportunities

In this chapter, we will examine specific trends driving broadcast and media technology spending in Middle East and Africa. The trends we will focus on are the following:

- Transition to Digital Broadcasting
- Transition to HD and UHD
- OTT and Multi-Platform Delivery

The transition to digital broadcasting is a government-led initiative that has encountered many problems in Middle East and Africa. The transitions to HD, UHD and multi-platform delivery are instead natural evolutions of broadcasters' infrastructures. The development of Pay-TV is also set to drive spending on broadcast and media technology.

### Transition to Digital Broadcasting

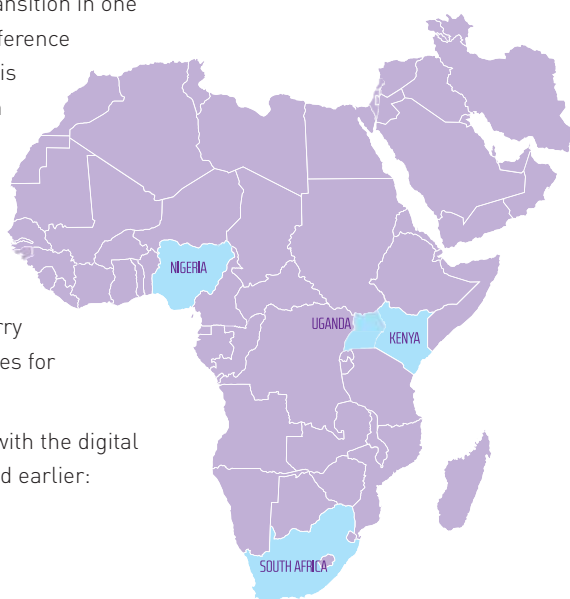
The transition to digital broadcasting in the Middle East and Africa is still underway as only a few countries have completed it. In the Middle East, these are Israel, Saudi Arabia and the UAE, while in Africa only Tanzania, Rwanda, Morocco and Mozambique have completed the transition to digital broadcasting. As in the case of Latin America and many Asia-Pacific countries, there are several challenges. One of the main constraints is the low disposable incomes reported in most countries in this region, which makes the replacement of old analog equipment with digital set-top boxes or converters difficult to implement unless governments decide to intervene. Intervention in this matter is often deemed not a priority by governments – which remain focused on other issues. Consumers in this region often lack awareness of the benefits of digital broadcasting due to the absence of government campaigns on the subject. Some broadcasters do not feel compelled to go digital as they fear they would lose most of their viewers – who often cannot afford buying the necessary equipment. Moreover, the absence of a local supply for digital equipment represents an important issue in countries with hefty import duties.

Exchange rate volatility has caused numerous African currencies (notably the Nigerian Naira and the South African Rand) to depreciate against the US Dollar in both 2015 and 2016, making the purchase of digital equipment from foreign suppliers even more costly. As mentioned earlier, this is not the case for countries in the Middle East as most of them have currencies pegged to the US Dollar.

In some cases, nearing the completion of the transition in one country has presented the potential risk of interference with analog signals in neighboring countries. This may happen again in the absence of cooperation between neighboring countries.

The mitigation of these challenges has acted as an enabler for a timely digital transition in very few cases. In fact, most governments in these regions lack the financial resources to finance digital equipment for TV households, carry out awareness campaigns or reduce import duties for digital equipment.

We report some African countries' experiences with the digital transition below to illustrate the points discussed earlier:



- **In Kenya:** some broadcasters publicly opposed the government's plan to switch off analog signals in February 2015 arguing that the set-top boxes needed to receive digital signals would be too expensive for most of the population. Four private TV stations decided to shut down their digital signals in protest. Kenyan viewers in their areas were left in the dark with no access to either analog or digital television signals. The government had to eventually step up to fund part of the set-top boxes purchase
- **In Nigeria:** the deadline for the transition was first set to June 2012, then postponed to June 2015 and, successively, to June 2017. In Nigeria's case, the lack of government resources to finance the purchase of equipment has represented the biggest constraint to digitization. The government has entered a partnership with the Chinese Pay-TV operator StarTimes to offset the cost of financing set-top boxes
- **In South Africa:** digital transmissions commenced in February 2016, initiating a simulcast period with analog signals. South Africa has already switched off analog transmissions in some areas of the country and aimed at shutting them all down by the end of 2016. South Africa has signed agreements with a group of neighboring countries for the management of potential interferences

- **In Uganda:** aside from the recurring problem of financing digital equipment, different challenges have been faced. Some of the population has been unable to receive digital signals due to the presence of hilly terrains in some areas – this has been mitigated by the installation of additional transmitters and gap fillers. Also, dealers not accredited by the government have been selling poor quality set-top boxes to unaware viewers. These issues have contributed to slowing the take-up of digital broadcasting

The lack of financial resources has prompted some African countries to turn to China for help. Aside from the case of Nigeria, China pledged to help 10,000 African villages have access to satellite TV, supporting viewers in remote areas to acquire information on digital TV. Most of China's financial support will be based on investment by Chinese technology companies backed by the \$10bn of the China-Africa Development Fund.

In this region, most of the countries that have yet to transition to digital have chosen to deploy the European DVB-T2 standard, some using MPEG-2, others using MPEG-4. The countries that have already migrated to digital broadcasting chose DVB-T – some of them are transitioning to DVB-T2.

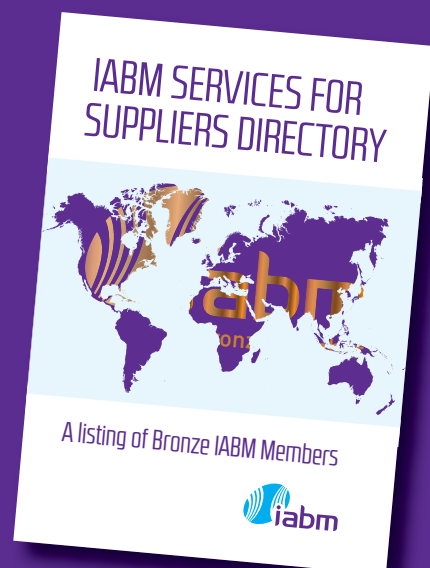
The transition to digital broadcasting is a significant driver of spending for transmission-related equipment in this region with increased investment going into this over the coming years.

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# REGIONAL FOCUS – MIDDLE EAST AND AFRICA

## Transition to HD and UHD

The transition to HD in the Middle East and Africa region is still at an early stage. While some countries in the Middle East and North Africa have made notable improvements in HD channel deployment, Sub-Saharan Africa is still grappling with the difficulties of transitioning its broadcasting infrastructure to digital. With developments in the transition to digital broadcasting, an increasing number of HD channels will be launched in Sub-Saharan Africa. It is worth noting that South Africa represents an exception to this trend.

In the Middle East and North Africa, increased HD channel growth has been driven by the expansion of satellite, which is the dominant transmission technology in the region. This is similar to what is happening in Latin America. Recent research shows that both the number of HD channels and HD equipment penetration have grown significantly in recent years. GCC countries show a greater than average HD adoption due to their higher level of disposable incomes. In contrast to developed regions, HD remains a differentiator relied on by Pay-TV operators to attract new subscribers. As Pay-TV penetration is still low (and piracy is rife), HD still does not reach a high share of the population. Major providers of HD channels in the Middle East & North Africa are established Pay-TV operators such as beIN and OSN, which deliver over 80% of the HD channels in the region.

In Sub-Saharan Africa, the completion of the transition to digital broadcasting within the next four years will provide broadcasters the increased bandwidth efficiency needed to deliver HD channels. Even in Sub-Saharan Africa's case, HD channel growth will be mostly driven by satellite expansion. In October 2016, Intelsat entered an agreement with MultiChoice, a leading Pay-TV satellite operator in South Africa, to provide broadcasting and DTH services.

MultiChoice was one of the first broadcasters to move its operations to digital in the region. Intelsat said in the press release:

*"This satellite will enable our customer, MultiChoice, to extend high definition channels throughout the region"*

MultiChoice's satellite television service, DStv, offers over 20 HD channels. The other provider of HD channels in South Africa is OpenView HD, an FTA satellite television platform offering over 15 channels in high-definition. Other countries in Sub-Saharan Africa are yet to make notable improvements in the provision of HD.

Increased adoption of advanced compression technologies such as HEVC and decreasing cost of satellite bandwidth will act as catalysts for increasing HD channel growth in this region.

The adoption of UHD in the Middle East and Africa region has been limited to some rare cases so far. These include major Pay-TV broadcasters in the Middle East and North Africa looking to have a competitive edge over their rivals. beIN and OSN have made some initiatives with regards to this.

beIN launched its 4K/UHD receivers ahead of UEFA EURO 2016; the Pay-TV operator broadcast some of the tournament matches in the new format. beIN is a major broadcaster of sports content – a very popular genre in the Middle East and North Africa. Its investment in UHD is mainly aimed at attracting new subscribers.



OSN partnered with Eutelsat in 2016 to support the growth of its existing HD channel portfolio and launch its upcoming 4K/UHD offering. At IBC Show 2016, OSN CEO, David Butorac, explained that the company had decided to launch the offering in early 2017 despite piracy challenges and competition from FTA television.

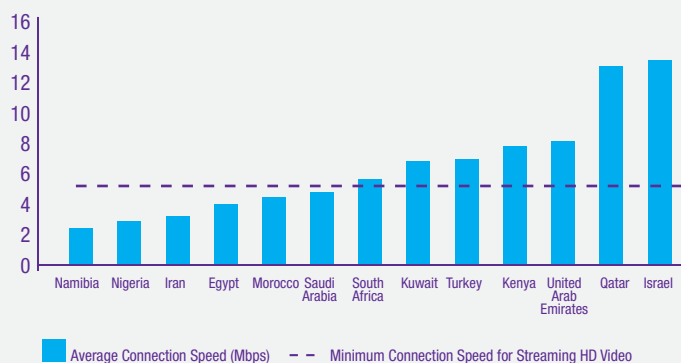
UHD does not represent a significant spending driver for this region. Spending on UHD technology will be mostly made by established operators such as beIN and OSN in the next three years.

As in the case of HD, both the adoption of advanced compression techniques and the decreasing cost of satellite capacity will enable more growth for UHD channels. Arguably, this growth will arise exclusively from the investment of Pay-TV operators.

## OTT and Multi-Platform Delivery

In the Middle East and Africa, OTT penetration is still at low levels due to constraints such as broadband quality and payment infrastructure. Low disposable incomes and piracy are also relevant hurdles to OTT growth in this region.

**Chart 14: Average connection speeds in selected MEA countries**



Source: Akamai

According to 2015 ITU data, the share of fixed broadband subscriptions is still less than 1% while the percentage of internet users stands at 17%. As far as broadband speed is concerned, Akamai's State of the Internet Report shows that average connection speed in GCC countries such as UAE and Qatar is about 10Mbps while in less developed African countries can be lower than 4Mbps (the recommended speed for streaming HD quality video).

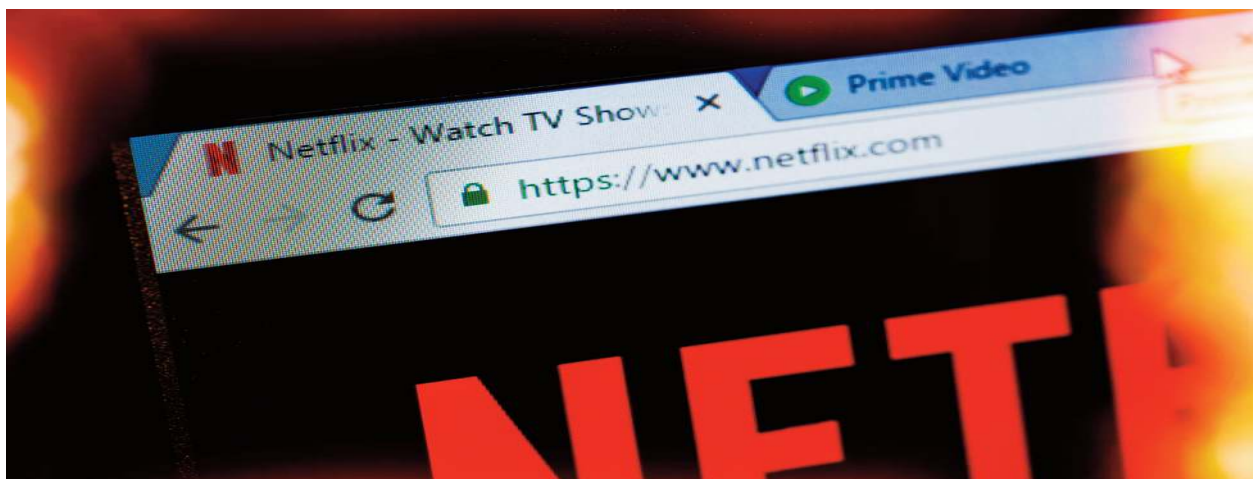
Payment infrastructure in the Middle East and Africa is one of the least developed in the world with average bank account penetration in African countries being about 30%. GCC states outperform other countries in the region with regards to this indicator. Sub-Saharan Africa has the lowest level of credit/debit card penetration worldwide while the Middle East fares better. Credit card penetration is an

important indicator for the potential of OTT development as, generally, payments of OTT subscriptions are made via credit cards. Some local OTT operators have found ingenious ways to circumvent this problem. It is worth highlighting that we are reporting average indicators of broadband and payment infrastructure quality. In practice, high-speed connections and credit cards will be concentrated in the higher-income share of the total population.

In the Middle East and North Africa, the local pure-play OTT operators are Icflix and Istikana, launched between 2011 and 2013. These services follow the Netflix model with a stronger focus on local content. Interestingly, to circumvent the problem of low credit card penetration, Istikana has introduced a pay-by-SMS service for its customers, thus avoiding the need to use debit or credit cards. Netflix launched in the Middle East and Africa in January 2016. The major Pay-TV broadcasters, OSN and beIN, launched OTT services in 2014. OSN launched OSN Play and Go by OSN. As opposed to OSN Play, which is available only to Pay-TV subscribers, Go by OSN is a pure OTT service available to non-pay TV subscribers for a price consistent with the typical OTT subscription. beIN Sports launched an OTT service (beIN Sports Connect) ahead of the 2014 World Cup to make some of its sports content available on multiple screens at an affordable price.

In Sub-Saharan Africa, there are no relevant OTT initiatives aside from the presence of Netflix. In November 2016, Starz Play Arabia CEO, Maaz Sheikh, said that his company plans to bring its OTT service in Sub-Saharan Africa in 2017.

It is worth mentioning that piracy remains a relevant constraint to OTT development. As long as viewers in this region can easily access pirated content, they will have a weaker incentive to subscribe to OTT services, no matter how cheap they are.



# SPECIAL COUNTRY FOCUS: **UNITED KINGDOM**

IABM – March 2017





# REGIONAL FOCUS – UNITED KINGDOM

## Market Overview

Exceptionally, this edition of the Quarterly Digest includes a country focus on the United Kingdom (UK) ahead of BVE 2017. This aims at giving IABM members a brief overview of the UK broadcast and media market and its business opportunities.

The UK broadcast infrastructure is very developed with the country's media industry now focusing on emerging technology trends such as the transition to multi-platform content delivery and the deployment of 4K/UHD offerings. Long-standing industry transitions such as the transition to digital broadcasting are no longer relevant technology spending drivers in this country. Spend on HD equipment is continuing although most broadcasters have already transitioned their operations to HD.

The UK was one of the first countries in the world to migrate to digital television. The switchover to digital television was achieved between 2006 and 2012 to allow for the digital broadcast of the 2012 London Summer Games. The transition to HD was achieved in the same timeframe. Today we count 115 HD channels in the UK vis-à-vis the first nine launched during 2006. The companies with most HD channels in the country were Sky, BT and the BBC as of 2016.

Both the transitions to digital broadcasting and to HDTV drove significant spending on broadcast and media technology in the period 2006-2012. IABM research shows that this was a positive period for broadcast and media technology suppliers with the exception of the year following the financial crisis.

In 2012, the launch of Netflix in the UK coincided with the beginning of a new era for broadcast and media technology suppliers. With spending on digital and HDTV technology waning, they had to start grappling with declining sales for their traditional products and services. After 2012, the take-up of Netflix has forced UK broadcasters to re-think their business models and start transitioning to a new media technology infrastructure. According to recent research, Netflix penetration in the country is now over 30%.

Today, broadcasters in the UK are challenged by SVOD growth in the country as Amazon and Netflix continue to invest heavily in original content production. Faced with declining ratings and increasing costs (e.g. the cost of sports rights; see the September 2016 Quarterly Digest for more details on this), UK broadcasters such as the BBC, Sky and ITV are trying to prioritize operational efficiency and make progress in their digital delivery initiatives. It is undoubtedly a period of profound change for them. This is reflected by changing technology spending that is also affecting suppliers' business models. In fact, we are seeing a continued move from hardware to software as well as a proliferation of cloud-based offerings, particularly in some segments of the market.

The UK is home to a large pool of broadcast and media technology suppliers. This is made up of both domestic suppliers and foreign vendors (particularly American vendors) that have opened branches in the country. In fact, the UK has historically been considered a gateway to the European market for American companies. This has been primarily associated with the similarities between the UK and the US economies. The likely exit of the UK from the European Single Market has prompted some companies to revisit their long-term plans with regards to this. More information on Brexit and its likely effects on the UK broadcast and media industry can be found on the IABM Brexit Report published in 2016.

Important foreign broadcast and media technology customers such as Disney, Discovery, NBC and Time Warner have also opened offices in the region to entice European distributors to buy their content.

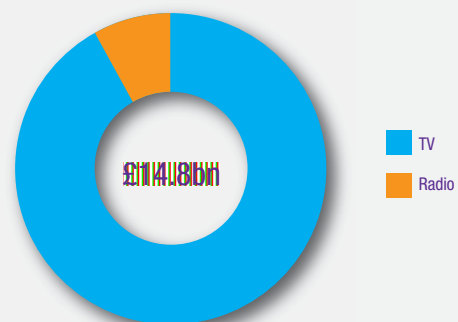
The concentration of broadcast and media technology suppliers and end-users in the UK (particularly in the south-east area of the country) has made it a thriving market for the media industry.

Below, we examine the main characteristics of the UK broadcast and media market as well as some of the most relevant trends in broadcast and media technology.

## Broadcast and Media Landscape

According to Ofcom data, the broadcast and media industry (TV and radio) in the UK generated about £14.8bn in 2015. TV accounted for 92% of these revenues with radio generating the rest. The TV production sector was worth about £3bn. Below, we briefly examine these sectors separately to give the reader a comprehensive view of the broadcast and media industry in the UK.

Chart 15: Size of UK Broadcast & Media market



Source: Ofcom

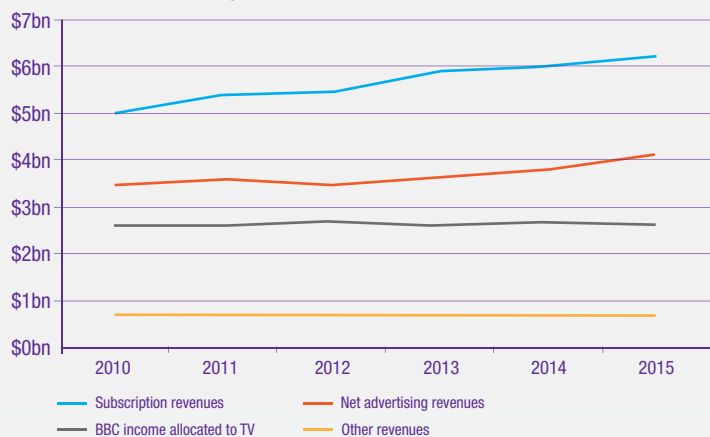
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## TV Industry

The television market in the UK is one of the largest in Europe in terms of revenues – second only to Germany. According to the latest Ofcom data, both subscription and advertising revenues have risen in the period 2012-2015 whereas BBC income allocated to TV has remained stagnant.

The chart below illustrates revenue growth for subscriptions, licence fee, advertising and other revenues. Total revenues have risen by 3% between 2014 and 2015. Subscriptions account for 46% of the total TV industry revenues with advertising and licence fee accounting for 30% and 19% respectively.

**Chart 16: Year-on-Year Market Sales Change, last 24 months, by size**



Source: Ofcom

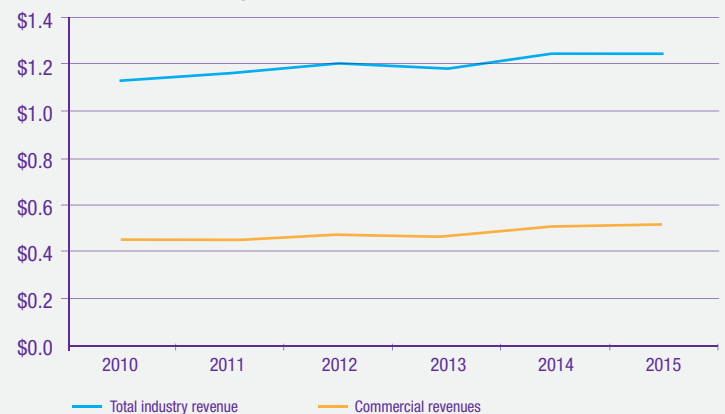
The main commercial broadcasters in the UK are Sky, BT, ITV, Channel 4, Channel 5, Virgin Media and Talk Talk. The BBC is the main public service broadcaster. Channel 4 is also a public service broadcaster although its source of funding is primarily advertising. ITV and Channel 5 are private commercial broadcasters – Channel 5 is owned by Viacom. The Pay-TV landscape is dominated by Sky, a satellite broadcaster. Virgin Media – owned by Liberty Global – operates the only cable offering available in the country while BT and Talk Talk offer IPTV video services. It is important to note that some Pay-TV services in the UK – including BT and Talk Talk – are only available as bundled deals with broadband and fixed line.

The broadcast television infrastructure in the UK is dominated by both satellite and terrestrial. Cable and IPTV are the third and fourth most important transmission platforms. The digital terrestrial television platform, Freeview, is operated by DTV Services Ltd, a joint venture between the BBC, ITV, Channel 4, Sky and transmission service provider Arqiva. Recent reports suggest that Arqiva, which is backed by the Australian bank Macquarie, may be put up for sale in 2017.

## Radio Industry

The radio market in the UK has been strong in the last five years. Both total and commercial revenues have been resilient in this period according to Ofcom data. Total revenues for the UK radio industry were stagnant between 2014 and 2015 although commercial revenues grew by 1.4%.

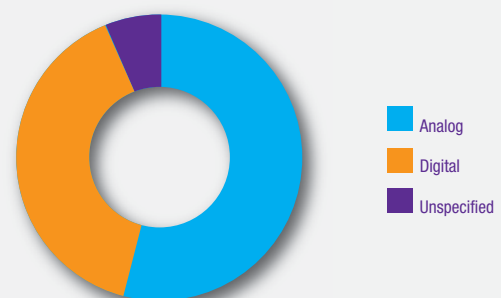
**Chart 17: Total and Commercial Revenue Growth in UK Radio Industry, 2010-2015**



Source: Ofcom

The most important radio broadcaster is the BBC with a 47% audience share according to Ofcom data – over 50% if local/regional services are accounted for. Two commercial groups – Global and Bauer – are the second and third most important radio broadcasters in terms of audience share. Other relevant radio broadcasters in the UK are UTV and Communicorp UK.

**Chart 18: Share of listening across radio and digital platforms**



Source: Ofcom

Most people still receive analog radio signals on the FM waveband although in 2015 40% of radio listening was on digital devices. This is illustrated by Chart 18. Digital Audio Broadcasting (DAB) was first introduced in the UK in 1995. There are three national DAB multiplexes at the moment in the UK – operated by the BBC, Arqiva and Sound Digital, a joint venture of Arqiva, Bauer and the Wireless Group. According to Ofcom's analysis, 90% of the population still listens to radio though younger viewers show more appetite for streaming.

## TV Production Sector

The UK independent production sector is worth about £3bn in revenues according to data published by Pact. Recently, production revenue growth has been driven by exports rather than sales to the domestic market. With regards to this, it is worth mentioning the potential impact of Brexit on content sales to European broadcasters. The UK production sector exports an annual £376m of content to European broadcasters. Funding for a plethora of British content production projects has been provided by the EU's Media Desk with specific content genres such as children's programs and drama particularly benefiting from EU financial aid. Michael Ryan, Chairman of the Independent Film and Television Alliance (IFTA), said of the Brexit vote:

*"The decision to exit the European Union is a major blow to the UK film and TV industry. Producing films and television programs is a very expensive and very risky business and certainty about the rules affecting the business is a must. As of today, we no longer know how our relationships with co-producers, financiers and distributors will work, whether*

*new taxes will be dropped on our activities in the rest of Europe, or how production financing is going to be raised without any input from European funding agencies"*

We should have more details on the likely effects of Brexit after March 2017 when the UK government is set to trigger Article 50 of the Lisbon Treaty and give a start to the negotiations with the EU.





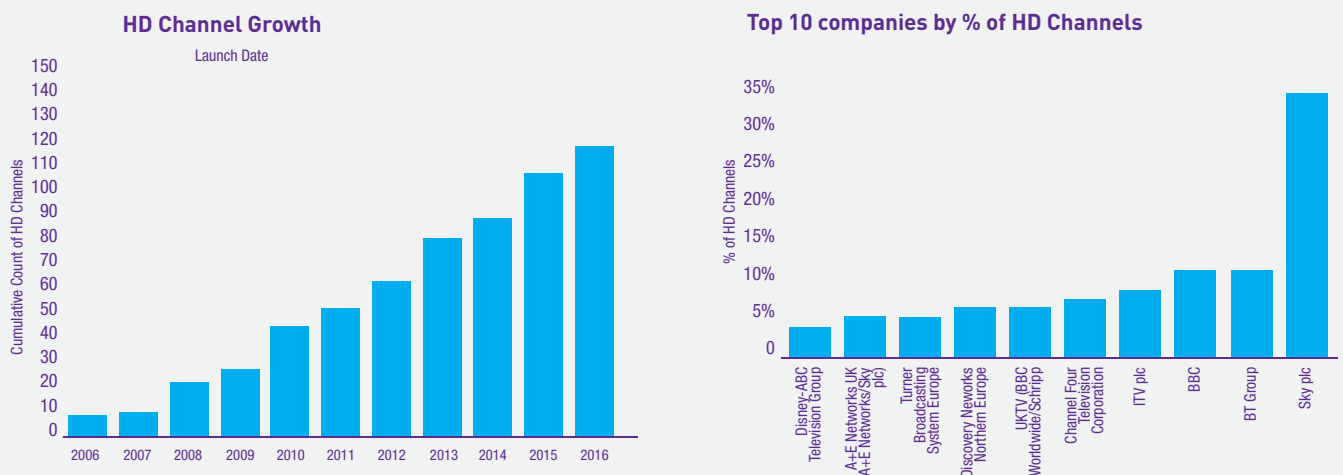
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## Business Opportunities

### Transition to HD and Higher Resolution Formats

The transition to HDTV in the UK happened between 2006 and 2012. During that period, the number of HD channels in the UK grew from 9 to over 60 on the back of the digitization of the television infrastructure. From then on, HD channel growth has not halted but only slowed down slightly. Today we count about 115 HD channels available on terrestrial, satellite cable and IPTV. The top broadcasters in terms of HD channel ownership are Sky, BT and the BBC. The infographic below illustrates both HD channel growth in the last 10 years and the top 10 companies in terms of HD channel penetration in the UK

Chart 19: HD in the UK



Source: IABM

It is important to remember that the transition to HD is still a driver of broadcast and media technology spending – although it is not the most relevant one. Broadcasters that moved their operations to HD in the period 2007-2010 will arguably be looking at replacing their equipment in the next three years – assuming a 10-year useful life for their equipment. Also, broadcasters in the UK are continuing to expand their HD portfolio. In conclusion, HDTV is still sought by broadcasters who often prefer a greater number of HD channels over launching a brand new UHD offering. IABM research shows that this has various causes, including the cost of migrating to 4K/UHD as well as the uncertainty surrounding the technology infrastructure to do so. We discuss 4K/UHD adoption in more detail below.

The UK can be considered the country at the forefront of 4K/UHD delivery in Europe although the new format has been adopted only by the two major Pay-TV operators. As in other markets, 4K/UHD is extensively used in production for future-proofing content. However, most end-users seem



reluctant to broadcast in the new format. 2016 was a key year for 4K/UHD adoption in the UK as BT and Sky launched their first regular initiatives. BT launched its 4K/UHD service on IPTV, which covers live sports including the UEFA Champions League and the Premier League, in August 2016. The service includes a dedicated 4K/UHD channel, BT Sport 4K UHD. Sky started broadcasting sports, films and TV shows in 4K/UHD via satellite from August 2016 as well through its Sky Q technology. The service covers 124 live Premier League games, all Formula 1 races and over 70 movies in 4K/UHD. However, no dedicated 4K/UHD channel has been launched by Sky. Other Pay-TV operators have not launched 4K/UHD offerings and terrestrial broadcasters have not showed any intention to broadcast in the new format.

As far as HDR is concerned, Amazon and Netflix started streaming some titles in their catalog in the new format in the UK from 2016. Both Amazon and Netflix already offer 4K/HD streaming. BBC has tested HDR streaming on the iPlayer but no regular offerings have been launched by traditional broadcasters.

## Transition to a Multi-Platform Delivery Model

As mentioned before in this special country focus, broadcasters in the UK have been challenged by the changing habits of their viewers and the consequent growth of new media operators such as Netflix and Amazon. This trend has prompted them to invest in new media initiatives to strengthen their digital presence.

Sky and the BBC were the first broadcast and media organizations to launch digital video services in the UK. Sky launched Sky Go in 2006 while the BBC launched the iPlayer at the end of 2007. Sky Go allows existing Sky Pay-TV subscribers to access Sky's content on the internet. The iPlayer gives BBC viewers the ability to catch-up on terrestrial programming; today, the service boasts over 300m users (video + radio).

The success of these initiatives was followed in 2012 by the launch of Now TV by Sky. Now TV is a standalone OTT service that is also available to people who do not subscribe to Sky's Pay-TV offering. In the same year, Netflix arrived in the UK. Netflix grew from 1m subscribers in 2012 to over 5m in 2016. Evidence suggests that many UK OTT users, similarly to their American counterparts, consider OTT services complimentary, subscribing to both Netflix and Amazon video services. Amazon Instant Video launched in the UK in 2014. It is worth noting that the other free-to-air broadcasters (ITV, Channel 4 and Channel 5) also have catch-up services.

Other relevant broadcasters such as Virgin Media, BT and Talk Talk have not launched standalone OTT services yet – although they have started offering video streaming services to current Pay-TV subscribers. Reports suggest that BT is preparing the launch of a standalone OTT service in 2017.

The proliferation of new media services in the country has caused a change in the technology spending pattern of UK end-users. While between 2007 and 2012, their investment was focused on moving their operations to digital and HD, after 2012, end-users started spending an increasing share of their budgets on new media initiatives.



This has included building an appropriate technology infrastructure for supporting the growth of their new media offerings. This has been difficult to implement as end-users have had to grapple with harmonizing broadcast and digital workflows. Also, the increase in costs deriving from digital video delivery (and its lower revenue-generating potential) forced them to boost operational efficiency.

As a result of this, a new range of technologies has started being supplied to media technology customers in the UK. These include, for example, advanced business intelligence and analytics software to track operating metrics, personalization and recommendation technology, content delivery networks and, more recently, machine learning applications to media and entertainment. In order to increase operational efficiency, media companies have moved away from bespoke hardware to software running on generic IT equipment. More recently, the take-up of cloud computing and IP have given them the ability to make their infrastructures more flexible and efficient.



#### **IABM – Head Office**

3 Bredon Court, Brockeridge Park  
Twyning, Tewkesbury, Gloucestershire GL20 6FF  
United Kingdom  
T: +44 (0)1684 450030  
F: +44 (0)1684 450024

#### **IABM – North American Office**

PO Box 230187  
Portland, OR 97281-0187  
USA  
T: +1 732 595 4077

#### **IABM – APAC Office**

#09-02 Tampines Junction 300 Tampines Avenue  
5, Singapore, 529653  
T: +65 679 5839



#### **Platinum Members**



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