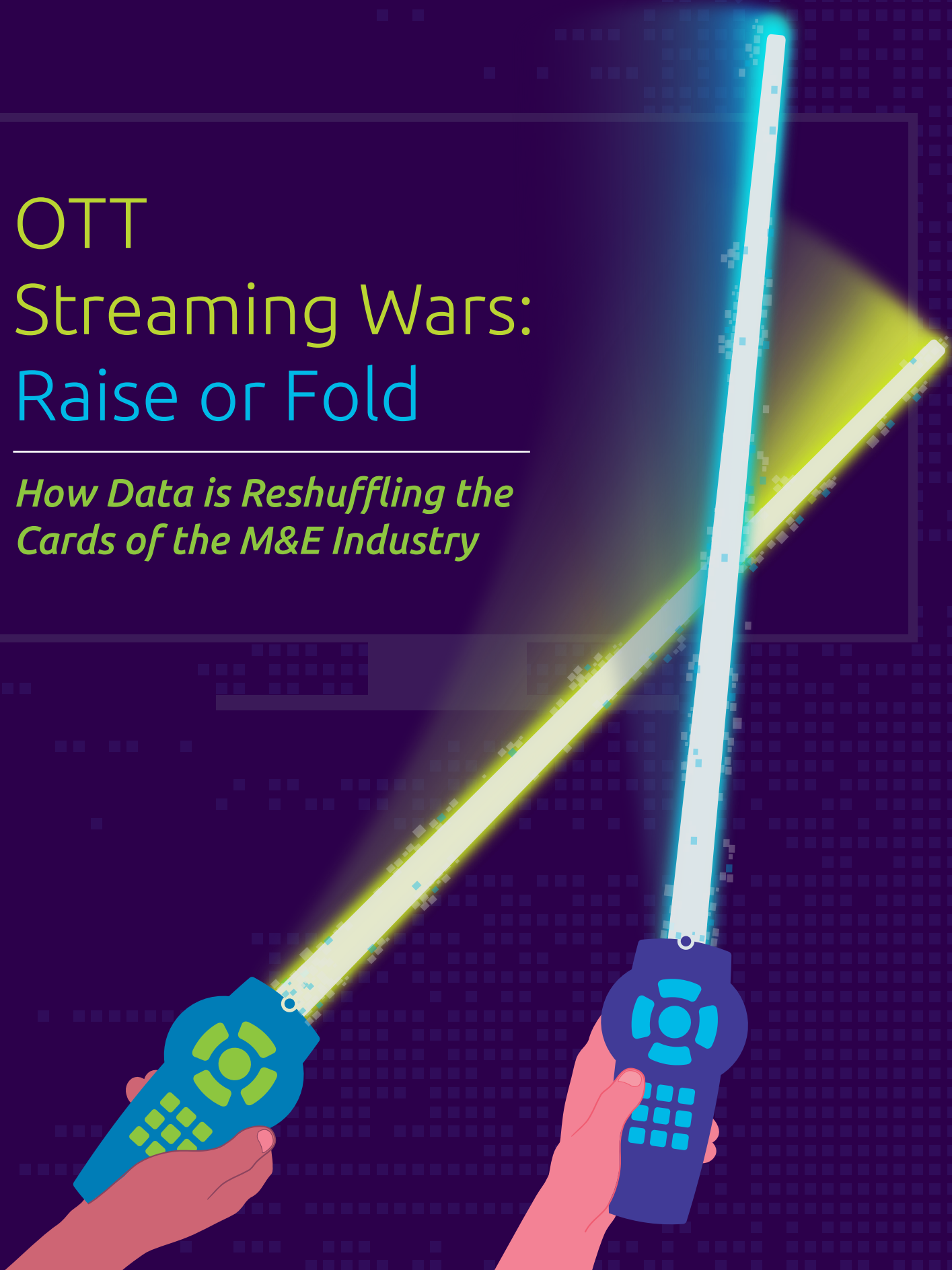


OTT Streaming Wars: Raise or Fold

*How Data is Reshuffling the
Cards of the M&E Industry*



Content

01

OTT Streaming Shakes-up the M&E Industry

OTT is fast becoming the main form of content consumption

Multiplication of services drives fragmentation

Streaming Wars' players race for subscribers

Advertising-based model accelerates the industry's entry into a new era

Consolidation and new opportunities for aggregators

02

Media Players Need Data Integration for Survival

The core business of media and entertainment companies is now challenged

Content is King, but DATA emerges as key success factor

03

Efficient Data Use Increases Competitiveness

In fact, 67% of all interviewees declared data to be business critical for survival

Data as key lever for OTT business

04

Two Out of Three Players Reach Only Basic Levels of Data Maturity

Fully leveraging the power of data requires work on multiple streams at the same time

Despite data being business critical, two out of three media and entertainment companies reach only a basic level of data-maturity.

European and traditional players lag

The main challenges to accelerate data usage are the lack of vision and culture followed by privacy and skills

05

Best Practices of Leaders Help Overcome Maturity Challenges

Decide to set data at the core of the strategy across the full CxO suite

Build an environment of trust and integrate it in the brand promise

Address users not audiences

Work on culture and skill sets to close the gap between business and data

Build data-in-motion cloud-based architecture

Become algorithms-centered

Balance and control algorithms by humans and foster creativity

Align data governance to enable democratization and agility

06

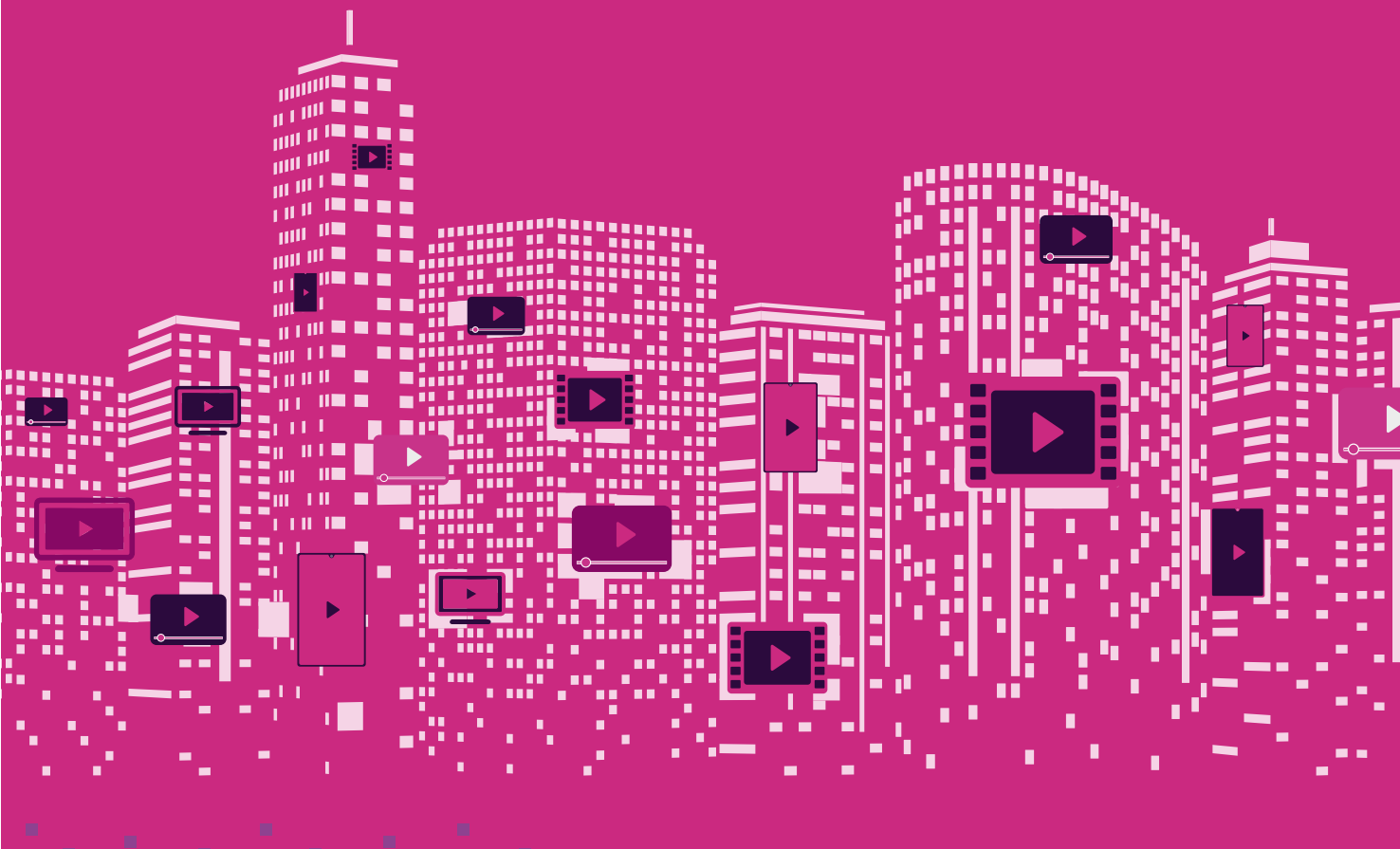
Conclusion: Raise the Stakes or Fold


The direction is set towards a Data-powered Media & Entertainment Industry

Acceleration is required to stay relevant and attractive for subscribers, content providers or advertisers

Becoming Data-powered ultimately reinforces the local and societal mission and role of media companies

Introduction





Netflix, Disney+ and other streaming services, for the most part, are growing quickly and globally, and making news headlines daily based on the success – or failures – of their efforts. As a result, media and entertainment companies of all shapes and sizes, regional and local, are looking for ways to establish their own OTT (over-the-top) streaming services and searching for answers about how to survive and thrive in a fiercely aggressive market.

At Capgemini, we decided to take a closer look at this (r)evolution as the market becomes more crowded and more competitive.

Our study aims at better understanding how data unleashes differentiation and competitive edge across strategic dimensions

such as content sourcing, customer acquisition, customer loyalty and lifetime value, cost optimization.

We organized one-hour interviews with close to 50 senior media industry executives and experts in various companies. The interviews were run between July and September 2020 and geographically span the globe from APAC to the Americas. Our discussions included broadcasters, telcos, right holders, pure players and key vendors.

What follows is an examination of our study, including some best practice tips, what it will take to be relevant in the market, and how to play a winning hand in a very strategic new game.

01 OTT Streaming Shakes-up the M&E Industry

OTT Streaming Becomes the Main Form of Content Consumption

Online streaming has ushered in a rapid progression these last 10 years, driven by the Netflix disruption and its explosive growth since 2010, and is increasingly becoming the main choice of video consumption for consumers

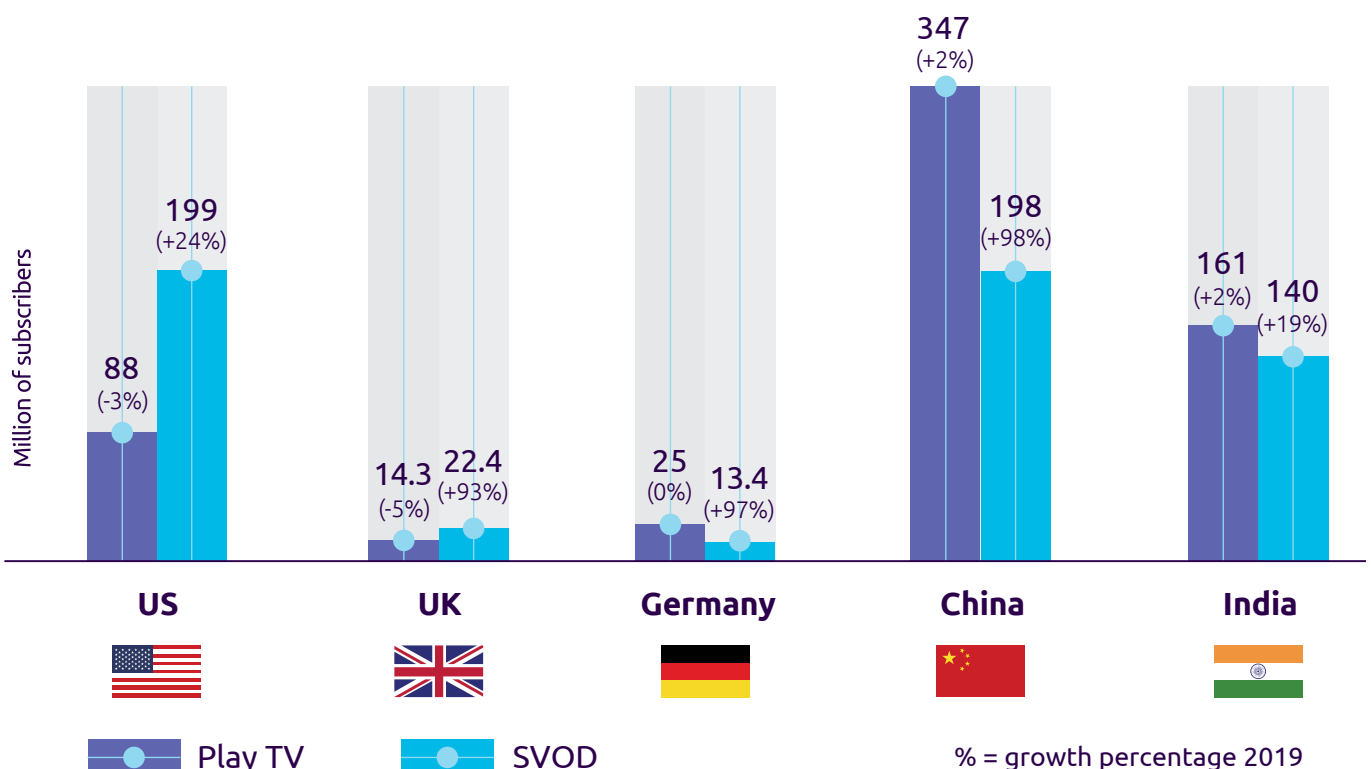
A Global Phenomenon

In 2017, SVOD services lagged behind Pay TV globally, but they are now poised to overtake Pay TV in more than 30 countries by the end of 2020¹. In the UK in 2018, Netflix surpassed the prestigious Sky satellite TV in number of subscribers, pushing Sky to develop its own OTT service, which is now Sky's major growth driver²

The rise of streaming is not limited to English-speaking countries. While the United States is still far ahead, the evolution of OTT is beginning to accelerate elsewhere. India is experiencing a full-on expansion. Likewise, in China and Germany, OTT is starting to cannibalize Pay TV (see figure 1)

As a result of EMEA and APAC growth, Netflix now has more subscribers outside of the U.S. than inside.³

Figure No: 1 PayTV vs Svod subscriptions (in actuals) by country & growth percentage 2019⁴



A Mainstream Sensation

OTT consumption is no longer a platform for the younger generation only. Where those under 35 years-old used to be the main users of OTT, the service now leads in share of video consumption for those up to 50 years old and is nearly as popular as Pay TV for those over 50 in the U.S. and parts of Europe (see figure 2).

Growing Market Welcomes More Diverse Content

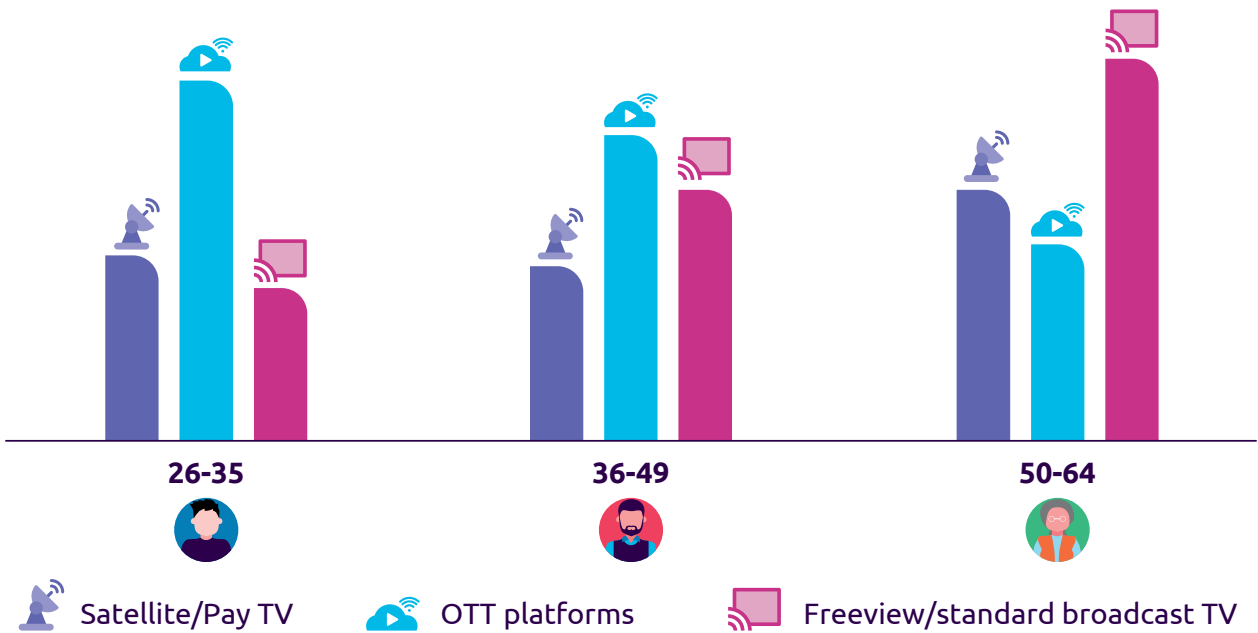
As OTT becomes more mainstream globally, media companies are developing and acquiring new forms of content that provide audiences with more choices,

adding gaming, live and on-demand sports and podcasts. And even offering stage-theatre, like the successful streaming of “Hamilton” on Disney+ in early 2020, when plays and musicals were shut-down due to COVID-19.

COVID-19 and OTT

The COVID-19 crisis has boosted consumer reliance on OTT, particularly during the first wave of the virus and the initial world lockdown. Netflix more than doubled its global subscriber base in Q1 of 2020. Comcast reported that streaming hours went up by 40% during lockdown versus only +8% for linear TV⁶.

Figure No: 2 Media consumption habit by age (in share per channel) – US & Europe 2019⁵





Traditional media business is declining. Streaming is the future because it gives the opportunity for stakeholders to establish a direct relationship with the consumer and eliminate intermediaries. Everyone is entering the race with the desire to access consumer data”

Christian Grece

European Television and VOD Markets Analyst at the European Audiovisual Observatory.

Multiplication of Services Drives Fragmentation

This growing adoption is pushing an acceleration of OTT platform launches both locally and internationally. These new players are emerging from all levels of the traditional media value chain, including right holders, broadcasters, connectivity providers, and others.

Hence, in the span of a year, seven new major OTT players launched in the US market alone, including Apple TV, Disney+, Quibi, Peacock, and HBO Max – and as quickly as it was launched, Quibi has already been shut down.

Moreover, as they try to position on the streaming market, some traditional media players have attempted several services launches and branding approaches. HBO for instance, who is betting on its content and premium brand to drive subscribers, has created HBO Now for people who do not subscribe to HBO through a pay TV provider, HBO Go for people who subscribe to HBO through a pay TV provider, and finally HBO Max for everyone, fueling strong confusion around HBO Max’s rollout. Then there is NBCU which has decided to introduce a totally new brand, Peacock, that will coexist with other segmented services such as NBC Sports.

Right holders such as Disney and HBO are pulling out some of their content and putting them exclusively on their own platforms. As a result, users are unable to turn to a single point of service that provides them with all the content they need.

All this crowded market, multiplication of brands and new walled gardens, are leading to higher fragmentation and confusion for end users. These will have to set priorities on what their preferences are and what their budgets can accommodate. There will be higher pressures for pricing and delivery of OTT services that take into account an increase of service hopping, accelerating the battle for subscribers.



Streaming Wars' Players Race for Subscribers

More than a streaming wars, we witness multiple battles in the race for subscribers

Local versus Global

Global players have the advantage of scale and an ability to leverage their resources internationally; however, they lack basic parochial understandings that are necessary to truly adapt to local markets reality. For example, can we consider Netflix truly present in Kenia when they have not adapted the payment model to the local habit of mobile payment? To solve the lack of detailed understanding of local market realities, global players such as Netflix leverage extensive research. Besides, their ability to promote and monetize local content at a global level is a powerful lever to attract local producers. For example, Casa de Papel (Money Heist in English), originally produced for the Spanish market, found a global audience thanks to the multilingual support brought to it by Netflix.

For their part, local players are launching their own OTT services because they do have a deep knowledge of their markets and consumers, but unlike global players, they



Salto's success will depend on its ability to bring a strong local positioning and smart synergies between the networks - within the competition law constraint."

Danielle Attias

General Secretary at Salto, French SVOD service.

struggle with a lack of scale and resources. To overcome these challenges, we see an increase in joint ventures by local players, comprising mainly of broadcasters who form alliances.

Local joint ventures emerge all over Europe, creating a counterweight to the US dominance



The role of public players

The role of public broadcasters in the ongoing streaming wars is of special interest. As a public broadcaster, sponsored by the state without being state-controlled, "the 'raison d'être' is public service. It is the public's broadcasting organization; it speaks to everyone as a citizen.

Public broadcasters encourage access to, and participation in, public life. They develop knowledge, broaden horizons and enable people to better understand themselves by better understanding the world and others."⁷

Increasingly, as audience groups stop watching traditional linear TV, it becomes crucial to find new ways to reach these public broadcasting targets and ensure that all citizens have access to their content. For public players, launching an OTT service is more than a question of ensuring growth. It's about adhering to the entire model of public broadcasting services.

It is of vital public interest that these players succeed in finding a balance between the streaming world and continued existence in linear TV, the latter becoming less and less relevant. As a result, major international streaming services – potentially re-aggregated – will try to take positions as information and opinion monopolies.

In fact, public players have been quite successful in many countries, using their positions as an advantage. The fact that they can experiment without the pressure of direct profitability, invest in content with smaller audiences, and launch before the wave of mainstream, make switching to OTT a potential revenue driver. Many of the early OTT launches have therefore been done by public players like BBC in the UK, YLE in Finland or Auvio by RTBF in Belgium.

Right Holders versus Distributors

Right holders have direct access to their core resource, content, but no customer base and not necessarily a large enough catalogue to stand alone. Thus, they are likely to – and should - utilize their assets and keep their content for their own D2C platforms.

By going this route, right holders will be able to capture data and improve interest in their product portfolios (e.g. Disney). In this context, right holders are starting to lock access to their most famous catalogues or increase prices for those branded collections (Examples Warner/Netflix, Yle or FranceTV/Netflix, Disney/sky).

To make this new strategy a profitable one, right holders must overcome the challenge of finding the appropriate balance between D2C and distribution monetization, particularly when they try to cut distribution channels.

Distributors then must re-invent their content sourcing and find ways to differentiate the catalogues. Thus, right holders become distributors, and distributors produce content and originals as the only way to protect their platforms. Today, Netflix and Amazon are becoming the largest commissioners for TV shows, after major broadcasters.⁸

Traditional versus New Giants

Traditional players need to redefine their role and enter the OTT space as a defensive mechanism. These players, as well as Telcos, can count on an existing customer base but need to create an ecosystem to deliver expected and relevant value. Moreover, they need to legitimize their roles of being key OTT providers for households, a challenge Apple has been struggling with for many years, despite its huge financing power.

Apple, and other technology companies such as Google and social media giants like Facebook, must validate their OTT role as they reposition around re-aggregation. With established brands, and understanding of customer needs, both traditional and giant players stand a chance to be relevant and survive.



The aggregation battle will be highly impacted by the meta aggregators (Apple, Roku, Google) who have their own platform, ecosystem and OS"

Samuel Michaud

Product Strategist at a French Broadcaster

Advertising-Based Model Accelerates the Industry's Entry into a New Era

Traditional TV audiences are eroding. The younger generation is flocking to OTT and nonlinear channels. Public broadcasting in Europe is also making the move to streaming, and demonstrating success in reaching incremental audiences.

However, standalone SVOD business models are not sustainable for everyone. In order to support the investment-intensive content business, platforms need to reach the right threshold of scale for their subscriber bases, which is a huge challenge in a fragmented space. Furthermore, with the multiplication of SVOD services, viewers are becoming overwhelmed with too many choices and not willing to pay for multiple subscription fees. If subscribers flee, who will support the investment?

Eyes and ad dollars shift from linear to on-demand

As consumption and attention shift away from traditional television, enter advertisers, who are looking for new ways to reach their audiences through OTT. As a result of this new and burgeoning platform, OTT ad spending is also growing. Pixilate reports a whopping 330% rise in worldwide programmatic OTT/CTV ad transactions in 2019.⁹

For broadcasters, building a unified distribution of traditional television, and ad-based OTT, became a real differentiator to provide incremental reach for TV ad-campaigns, while maintaining the scale of their audiences and the viability of their business model.

A compelling value proposition for brands

Beyond reaching an incremental audience, ad-based OTT services offer advertisers more attractive and targeted audiences with better attribution and measurement capabilities.

Moreover, ad-based OTT services are reinventing the viewing ad-experience to a more premium and less intrusive one, in comparison to other digital services such as YouTube.

This brings high value for brands, but it can also test viewers' tolerance of more advertising.

Consolidation and new opportunities for aggregators

In this context, we are seeing a rise of aggregating services that are trying to reduce complexities for the consumer, by combining content from various right holders, or different streaming services, via one interface. These aggregators are mainly telecommunication providers or major tech companies such as Amazon Channel, Jio T+, and a bundle solution partnership by Viacom CBC and Apple.

What these services have in common is that their value proposition is focused around ease of use, guidance and support for users who are lost or annoyed by an overload of OTT platforms.

These aggregators must excel at user experience and unlock key aspects of the value proposition including ease of use and guidance. The more fragmented the market, the more complicated clear guidance gets, and thus, the need for more aggregators.

The crowded market will see OTT players appear and disappear, depending on their popularity. Thus, aggregators need to be agile to quickly integrate and partner up with the right platforms. Choosing and adapting to partners will be a key differentiator for aggregators; however, it will be made difficult because OTT platforms have highly fluctuating content and brands.

Lastly, aggregators will require a high level of regulatory maturity, since they combine national and international content, along with various methods of data consumption and user content.



With so many new streaming services emerging, consumers are beginning to crave (re-)aggregation. Device/technology companies players like Amazon (through Fire) or Roku, but also strong MVPDs/telcos through their set-top-boxes are in a great position to play that role"

Christian Kurz
SVP Global Insights
ViacomCBS

02 Media Players Need Data Integration for Survival

The fragmentation of the market and the rising competition for subscribers and advertisers is driving new challenges for the whole media and entertainment industry



Challenge 1 Access to Content

Content remains king, and access to it has become increasingly complicated as right holders pull out their content to use on their own DTC platforms, and then likely distribute any new productions themselves.



There is no shortage of content, but a distribution problem to ensure users have access to the content that is relevant for them without having to manage too many subscriptions at too high of an aggregate price”

David Giles

Media Consultant and Strategist. Former Head of Strategic Insights and Research for NBCU Entertainment networks and Viacom Music networks.



Challenge 2 Customer Attention

OTT players must overcome a daily fight for subscribers, a congested market and the threat of SVOD saturation by creating a differentiating customer value proposition and a strong brand.



Challenge 3 New CX Standards

Delivering seamless, multiscreen experiences will become difficult as GAFAN increases CX standards. This becomes even more crucial as the hyperabundance of services risks customer retention, causes subscription hopping and initiates high churn rates.



Having a large library with excellent content is only interesting for the user if the content is discoverable”

Major US OTT player



Challenge 4

Monetization

Profitability for most players is not yet a given, which puts pressure on media companies to adopt strong monetization models. SVOD platforms are challenged by market fragmentation as AVOD and hybrid models are increasing, requiring adoption of new capabilities to differentiate within the market.



With OTT, media enters the era of the digital. In this environment, they are facing new competition from GAFAs on race for attention and ad dollars”

Major US studio



Challenge 5

Cost Efficiency at Scale

Delivering a compelling value proposition requires high and recurring investments tightening margins for OTT players. The ability to scale platform and operations is key to amortize costs and sustain profitability.



Main problem, especially of local players, is scale of investments. A lot has to be bought ‘as-a-service’ because the size of the market does not justify a build approach”

European broadcaster

Content is King, but DATA Emerges as Key Success Factor

Data underlies all and challenges the core business of media and entertainment companies

Our research reveals that content, by far, is considered as the key differentiator and at the core of the value proposition for most OTT, followed by user experience and brand. Besides content, brand, and customer experience, a fourth key pillar for differentiation emerges: **Data and analytics**.¹⁰

Using data as a strategic asset is a key lever for creating differentiated content, brand, and user experience, and is also a vital enabler of market differentiation and profitability.

Interview question

What will make an OTT successful?

1 CONTENT

Continuous provision of consumers with relevant content

Go for jewels & award winners vs large buffet of average quality (as done by Netflix)

Key challenge is to decide in what to invest, depending on strategy & target audience

2 BRAND

Having a trusted brand with high target group awareness that stands out

Driver to acquire customers & ensure attention in cluttered market
A totally unknown brand entering the market today will have major difficulties, therefore acquisitions and partnerships (eg. At&t acquiring Warner/HBO) are on the rise

3 USER EXPERIENCE

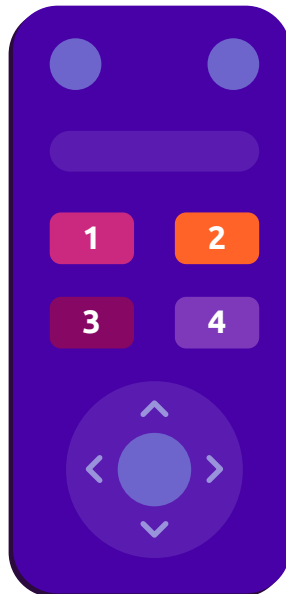
Creating an engaging and frictionless user experience

Standards set by Netflix, seen as must have by consumers. #1 differentiator for bundling services as 'guidance' is core of value proposition. Must be created as holistic customer journey. Lever to engage customers and compete on war for attention with players like Fortnite or TikTok

4 Data & Analytics

Capabilities to collect & assess system, user & market data

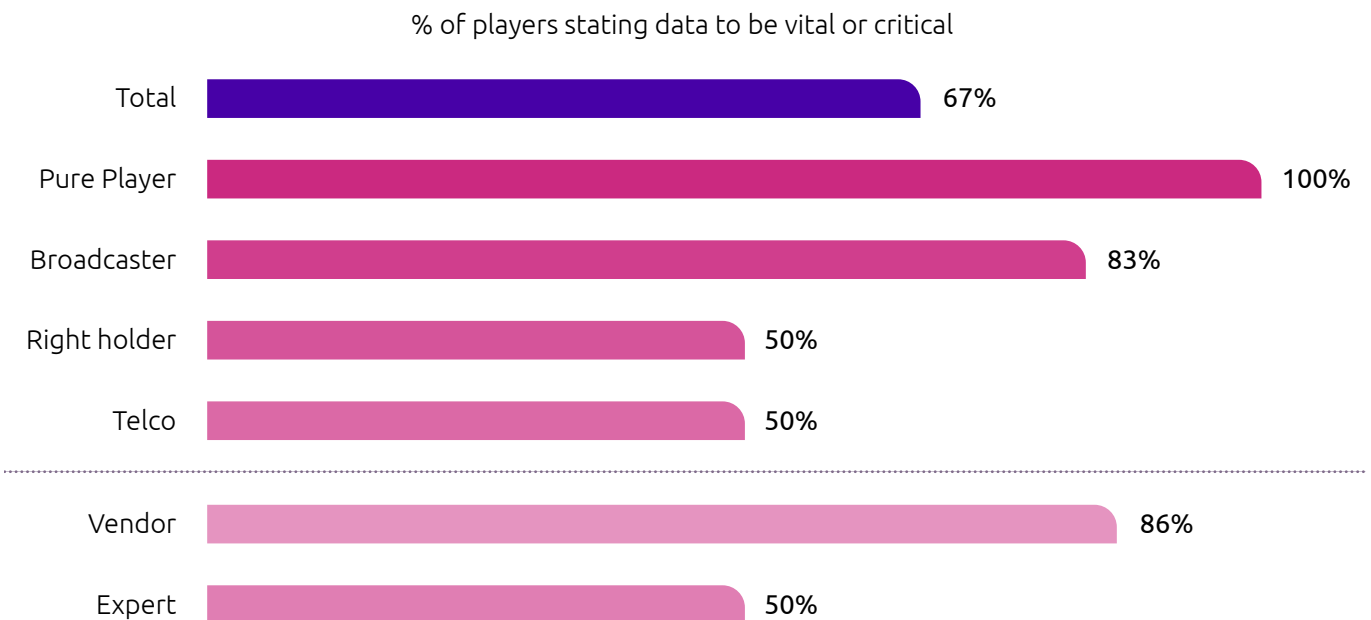
Key lever for creating differentiating content, brand, user experience and vital enabler of market differentiation and profitability, using data as strategic asset



03 Efficient Data Use Increases Competitiveness

In fact, **67% of all interviewees** declared data to be business critical for survival¹¹

Figure No: 3 Share of interviewees stating data is critical or vital for their OTT business



Data is underlying everything we do, and everything we do has to serve the data"

US studio



Data and insights are vital to deliver all other differentiators which are content, brand, and viewer experience"

Alp Pekkocak

Global Head of Media Strategy and Solutions
Salesforce



All our activities are driven and defined by data in one way or another. Without it, we can simply not operate. Making a smart and coherent use of data is existential for an OTT player like us"

Danielle Attias

General Secretary at Salto
French SVOD service.

Data as Key Lever for OTT Business

Data must be understood as the combination of big data (massive data requiring algorithmic process that combines the different levels of data) enriched with think data (smart and manual data augmentation) and combined with human intelligence.

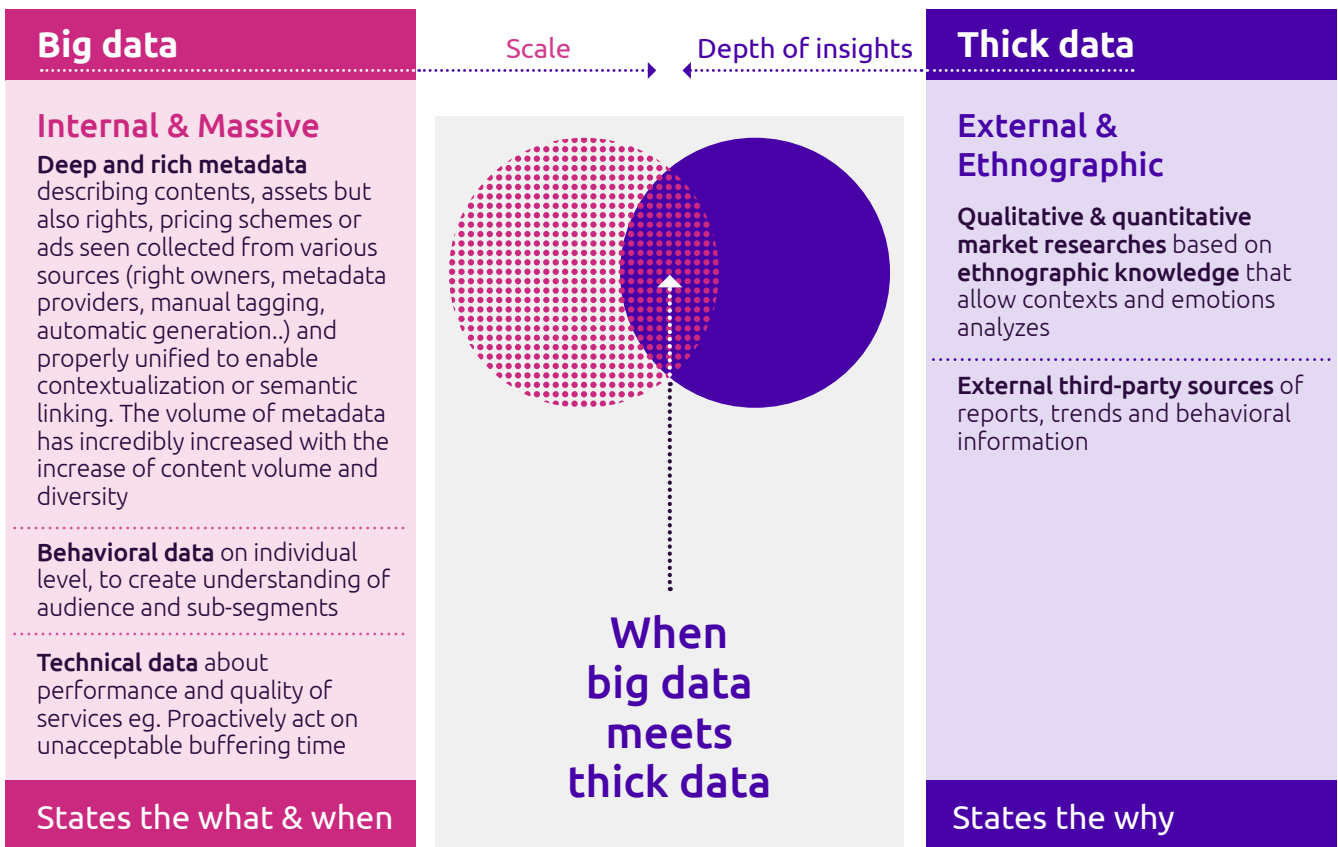
Further, the awareness of the value of data varies, depending on the particular business component.

For example, personalization and experience as a use case are top of mind across all industries for data, but the benefits of using data in the digital supply chain today are still largely unknown.

The added value that data brings to an OTT player can be organized into six fields of business application (see below).

What is OTT data?

Data must be defined as the combination of big data, enriched with thick data and human intelligence



NETFLIX

Binge watching is one of the success stories of this combination by Netflix.

Behavioral data is not enough to run meaningful segmentations. It wouldn't tell us what we needed to do to be better years from now."

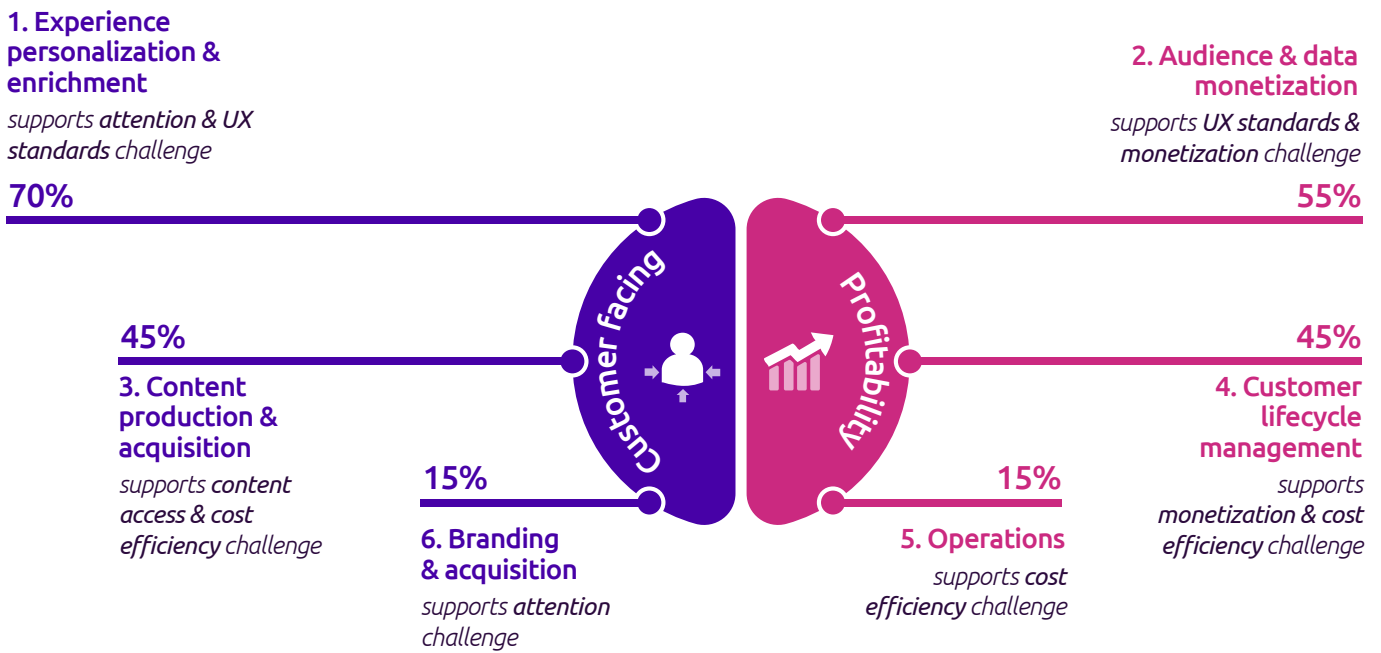


7/10 experts state Spotify to be best in class for its contextual recommendation engine

Proposes playlist created by AI + taste clustering from user edited playlist. Combines recommendation with contextual data like weather, time of the day, season, etc.

Data Empowers 6 Strategic Dimensions

Figure No: 4 Awareness level of business value applications of data - % on a normalized scale of 100¹²



1. Experience, Personalization and Enrichment

OTT players make smart use of data to enrich and personalize customer experience, and thus compete with the new standards continually set by Netflix, Amazon and others. Awareness of the various fields of data, and the application of data, remains strong today among media companies.

Typical use cases are:

- **Personalized content recommendations and discovery engines:** Adapting the search, pushing recommendations and acclimating what is shown on the start screen to users' individual preferences, is all driven by algorithms. The downside of these algorithms is that they have been adversely experienced through the lens of YouTube, where users ended up in their own filter bubble, creating the impression of a very limited amount of (alternative) content available.

- **No personalization without user identification:** To match preferences and personalize content to specific users, a login and account are required for identification. This necessitates a choice for OTT players, ease of use and low barrier onboarding versus the ability to link data to a specific user profile and adapt the experience to the user's preferences.
- **Curated human editorialization based on tastes, segments, insights:** Using data-driven insights into user segments enables OTT players to curate and editorialize in much more target-specific ways. Netflix, for example, is using 2,000 taste communities to segment their users¹³ that support the selection of content recommendations and combinations for the right target.
- **Enriched and personalized UX (thumbnails) with A/B tests:** Personalized services and bundles within a metaportal of services are enabled through large scale A/B testing. Two users might like the same show but would be triggered by two different ways of discovering it (in terms of visual, description etc.).

Don't forget to finish your series"

To keep users engaged and avoid frustration, an European cable operator has been proactively reminding users to finish a series before it leaves the catalogue. These reminders are personalized, including information about how much is left to watch, in order to launch the notification on time.

European
cable operator

- **Personalized marketing/communication campaigns:** Through data-driven automation, the communication with the user can be personalized so that it has maximum relevancy for the user.
- **Augmented experiences (e.g. social, interactive, enriched streams, augmented reality):** Detecting and redirecting opportunities for social interactions enrich the experience for the user and also create increased brand awareness.
- **Proactive customer experience issue tracking:** To provide the best and richest user experience, proactive issue tracking is deployed and, where necessary, follow-ups can be put in place.

What the future might bring:

- To further enhance the user experience, OTT personalization will be integrated with other connected devices, e.g. a content recommendation algorithm that takes into account, for example, that its user is currently cooking, and will propose shorter content to watch or more relevant content, i.e. a cooking show, while the meal is being prepared.
- Augmented Reality experiences will be part of the OTT experience and can be used to bring films entirely off the screen and extending the visual story into the "real world". It can also be used to generate subtitles in real-time.

2. Audience Monetization and Advertiser Offerings

Data brings new opportunities to optimize audience monetization and enrich the offerings available to advertisers.

When proposing attractive products to advertisers, platforms need a large subscriber base and the right premium content, as well as precise ways of targeting audiences, and tracking the success of campaigns. All of these factors are enabled by data; however, few OTT players are prioritizing data.

Typical use cases are:

- **Contextual and personalized advertising targeting:** The richer the targeting, the better the ROI for advertisers and the stronger the product a platform can propose. This includes contextual data, from outside the user's data, like news, weather or user behavior on other platforms that help overcome blind spots of inside-only algorithms.
- **Innovative ads formats:** By providing new and innovative ad formats, ad-products from brands become more relevant and interesting for users.

Viewer first ad experience"

Hulu puts the viewer first when defining new ad products aiming for high acceptance rates of users. It empowers the user and provides ads that try to match the viewing experience, ideally, like the introduction of 'Binge watching' ads, allowing brands to sponsor ad-free viewing when a binge-watching behavior is detected.¹⁴

hulu

- **Deep measurement of ad efficiency and attribution:** Advertisers need to optimize their ad-spends by tracking financial ROI and other KPIs. Being able to attach this data to an effective ad design is also useful for the platform in order to market and price their ad product offerings.
- **Smart ad pricing and real time bidding:** Data and automation enable platforms to apply dynamic and real time pricing that intelligently links offer and demand to optimize ad revenues.
- **Optimization of the advertising pressure according to users' behaviors:** Optimizing the ad pressure, to achieve the right balance between revenue and user experience, helps to avoid user frustration and rejection. The better the ad experience, the higher the user's approval.
- **Cross selling:** Convert customers to purchase other products and services within the OTT player's ecosystem.
- **Churn prediction and proactive marketing actions:** Retention is an especially relevant challenge for OTT players, and being able to predict and proactively act on retention, or service optimization, is key to decrease churn. Detecting and reactivating inactive customers in an engaging way is a proactive example.
- **Scoring of profiles:** To optimize costs in marketing investments, OTT players must understand the value of what customers are bringing in. Assessing CLV, including their value for advertisers, is critical to optimizing margins in a low-margin business.
- **Inactive customers reactivation:** Leverage data to properly identify dormant customers, segment them and define appropriate strategies of reactivation.
- **Targeted loyalty and reward programs:** Generate insights about customers' pain points and behaviors from multiple analysis of consumption, behavioral and qualitative data, and leverage algorithms to roll out proper retention and loyalty programs. Testing and performance monitoring are key levers to optimize the programs.

What the future might bring:

- **Contextual product placements within content:** Native advertising run by algorithms, new forms of in-content advertising and increased contextualization.
- **Data & insights monetization (insights as a service):** As OTT players gain insights into their audience and collect data, these assets can be monetized outside of their own fields of applications. For example, OTT players can build an 'Insights-as-a-Service' model.

3. Customer Lifecycle Management

OTT players apply data analytics at every stage of the customer lifecycle to increase acquisition and retention. Data and automation play a crucial role for mature customer lifecycle management; however, few players are automatizing at scale.

Typical use cases are:

- **Understanding viewing patterns and audience segmentation:** Enriching traditional marketing activities.
- **Holistic view of customers across all channels:** Combining information across channels further supports fully understanding and ensuring long-term user satisfaction

What the future might bring:

- **Predictive segmentation:** Leveraging machine learning, customer data is analyzed by self-optimizing algorithms to understand how dataset attributes correlate to specific business objectives. Customers are then automatically scored and clustered into segments based on their likelihood or propensity to exhibit a future behavior.
- **Prospects Data Intelligence:** Estimating CLV and positioning customers on the most appropriate product, before they are clients entering into a relationship with the platform.

Deep understanding of subscribers"

"The OTT war for attention will be won by those who best use data to deeply understand their subscribers.

Our best customers are the ones at the top of the industry when it comes to customer insight and segmentation.

But they also find programmatic ways to turn intimacy into concrete actions, increasing loyalty and customer value."

John Carney

SVP Industries
Communications and Media

salesforce

4. Content Production and Acquisition

OTT players rely on valuable insights to inform their production and acquisition decisions in an industrialized approach.

By far, content is regarded as the key component to a successful OTT platform; however, the added value of data in this context is only partially recognized. Solving the challenge of content sourcing, through investing in the right content to produce or acquire, is especially relevant for low-margin OTT business models. Thus, content sourcing must be as precise as possible for optimal investment of resources.

Typical use cases are:

- **Detecting audience interests:** Using available metadata from the OTT platform and other available data can detect trends and user preferences (e.g. genre, casting preferences, etc.).

- **Usage forecasting:** Defining levels of low versus high usage, linking fluctuating user interests with the right content, and investing and releasing content at the right time, improve the efficiency and success of the available content.
- **Link content choices to KPIs to track efficiency:** A meaningful link between improving KPIs and content helps decide what content to invest in. Certain content might drive stronger acquisition and improve engagement, while others might be successful in improving word-of-mouth popularity. Tactical focus determines content alignment.
- **Content lifetime value estimation:** Use rich metrics to predict and pin point the lifetime value of content to help define investment and the right moment to take the content out of the catalogue.
- **Insights analysis regarding content preferences that inform international expansion decisions:** International expansion is often the only way for OTT platforms to reach a large enough audience that ensures profitability. However, when entering new markets, it becomes harder to make content sourcing decisions based on well-informed "gut feelings." Data can help to challenge existing biases, and assess probability of success in a new market, supporting the strategic decision of whether or not to proceed.

What the future might bring:

- **Predict and influence future relevancy:** First mover advantage can be largely impactful in the entertainment business. However, experimenting by investing in new forms of content and new topics that might not find an audience can be risky, depending on the size of investment. The ability to better predict what will work next, and how it will impact the bottom line, is a powerful tool to deploy in the streaming wars.

Consumer feedback will certainly guide more production decisions - even if 60% of decisions will still be driven by creativity"

Christian Grece

European Television and VOD Markets Analyst
at the European Audiovisual Observatory.

5. Operations and Scale

Putting data at the heart of OTT operations and supply chain can support costs optimization and increase efficiency.

Applying data is often associated with a need for high-levels of sophisticated automatization, and therefore is not being further prioritized by most players; however, reducing costs of operations and scale are critical to a healthier economic equation, and increased resource availability, for an improved end-user product.

Typical use cases of using AI and ML algorithms are:

- **Automatic editing and real time processing of contents:** Automatic generation of previews, short form generation, highlight selection and upscaling to 4K(/8K) increase the speed of these operations, and ensure quality for less relevant content where investing further would not pay off.
- **Automatic generation of metadata, subtitling & translation:** Intelligent detection increases the scale on which metadata can be attributed, and can reduce the subtitling and translation work. This process makes the content available to a larger audience and enables the scale effect.
- **Automatic distribution and processing of customers' complaints:** Customer experience of OTT goes beyond pure interaction with the user interface. Quality and reactivity of customer service are equally part of a seamless experience and contribute to satisfaction and retention.
- **Quality of service monitoring & predictive maintenance:** Algorithms enable maintenance choices that are based on past trends and real-time data; it offers an entirely new cost-saving dimension and also a better quality of service.
- **Industrialized data use cases (A/B testing, etc.):** As soon as the test is live, track specific metrics and evaluate the efficacy of each variation tested and define the best one to be deployed.
- **Budget and royalties forecasting :** Often considered as critical, but a fastidious activity as it relies on several inputs, automation can help media companies gain in efficiency, avoid over or under estimation and better comply with contracts rules.
- **Content restoration :** Using machine learning based on several sources of metadata, companies can restore iconic films. For example, it can be applied to learning and recreating a particular film "look," such as the characteristic, or restore damaged scenes by canvassing a large library of images.

Real time and automatic extraction of football games highlights"

"To answer the increasing demand for new content and reduce the time creatives spend on operational tasks, we have developed an AI-based video analyzer that utilizes the latest technologies in image processing and enables the automation of content analysis, labeling and encoding for various purpose from analyzing real-world sports events or virtual e-sport matches to identifying non-appropriate user-generated content. For instance, in just a few seconds after a Call of Duty mobile game ends, we leverage our AI Video Analyzer to automatically generate a video summary of highlighted moments." ¹⁵

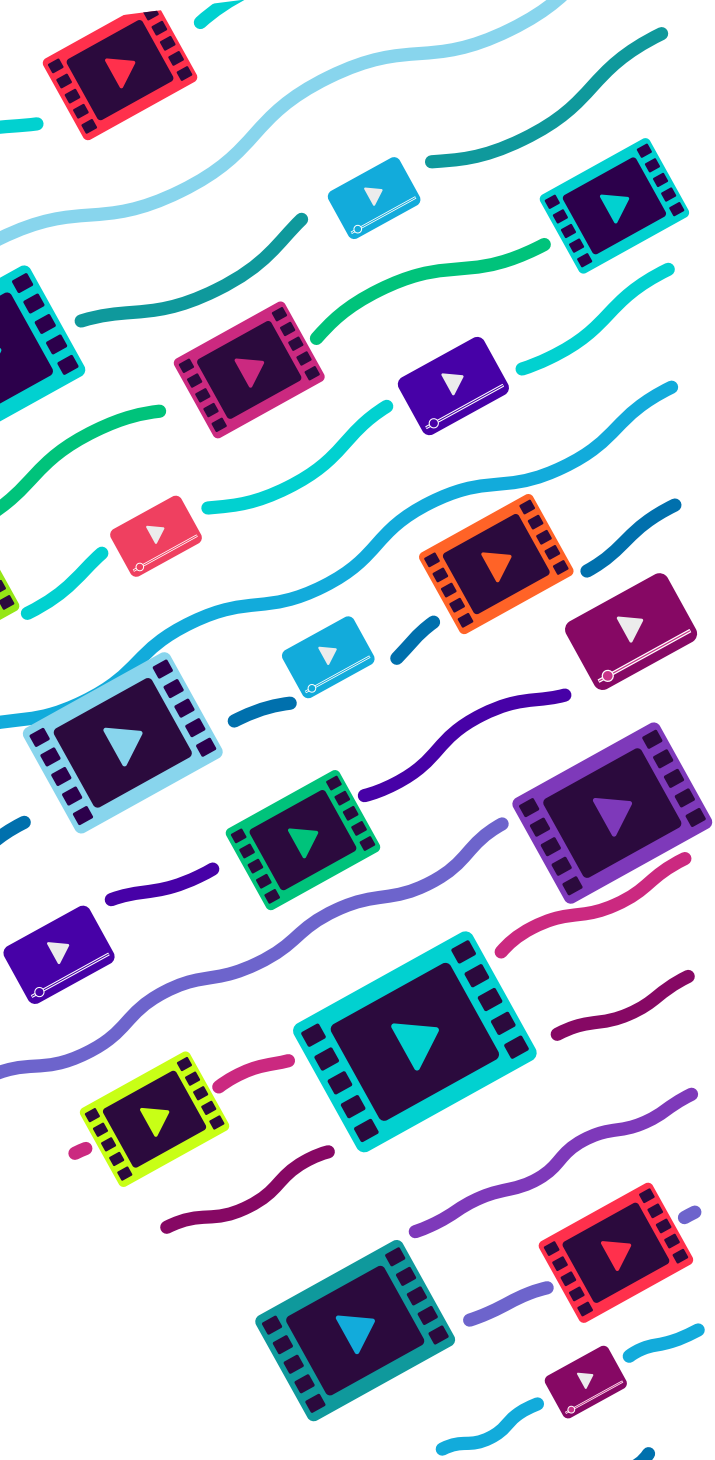
Leon

Senior Product Manager
Tencent Cloud



What the future might bring:

- **Automate additional steps in content production:** Better technology and intelligence improves the chance for more opportunities and processes that can be facilitated by data, (e.g. digital voice) and enhances the occasions to easily scale and sell to new markets.



6. Branding, Awareness and Acquisition

Leveraging external data helps OTT players better understand their brand positioning and develop smarter initiatives to increase awareness and preference.

To stand out in a crowded marketplace, OTT needs a strong brand awareness that facilitates the decision process for the customer. Branding is often mentioned to be a traditional and purely creative discipline. However, we believe that data and insights can be important value drivers on several underlying aspects.

Typical use cases are:

- **Deep understanding of customer preferences:** Understanding the type of audience, what their preferences are, and their associations and lifestyles outside of the pure media related context, helps brands to better position their identity and improve insight about affiliating with the right partners and networks.
- **Brand competitive intelligence:** In the rapidly evolving OTT landscape, keeping an eye on the details of the market evolution is time consuming and requires human interpretation. Therefore, a need exists for enhanced interpretation and better ways to collect relevant data.
- **Targeted social media campaigns and look alike modeling:** Supported by deep understanding of customers and scaled through automation.
- **Brand identity adaptation according to audience such as high LTV customers.**

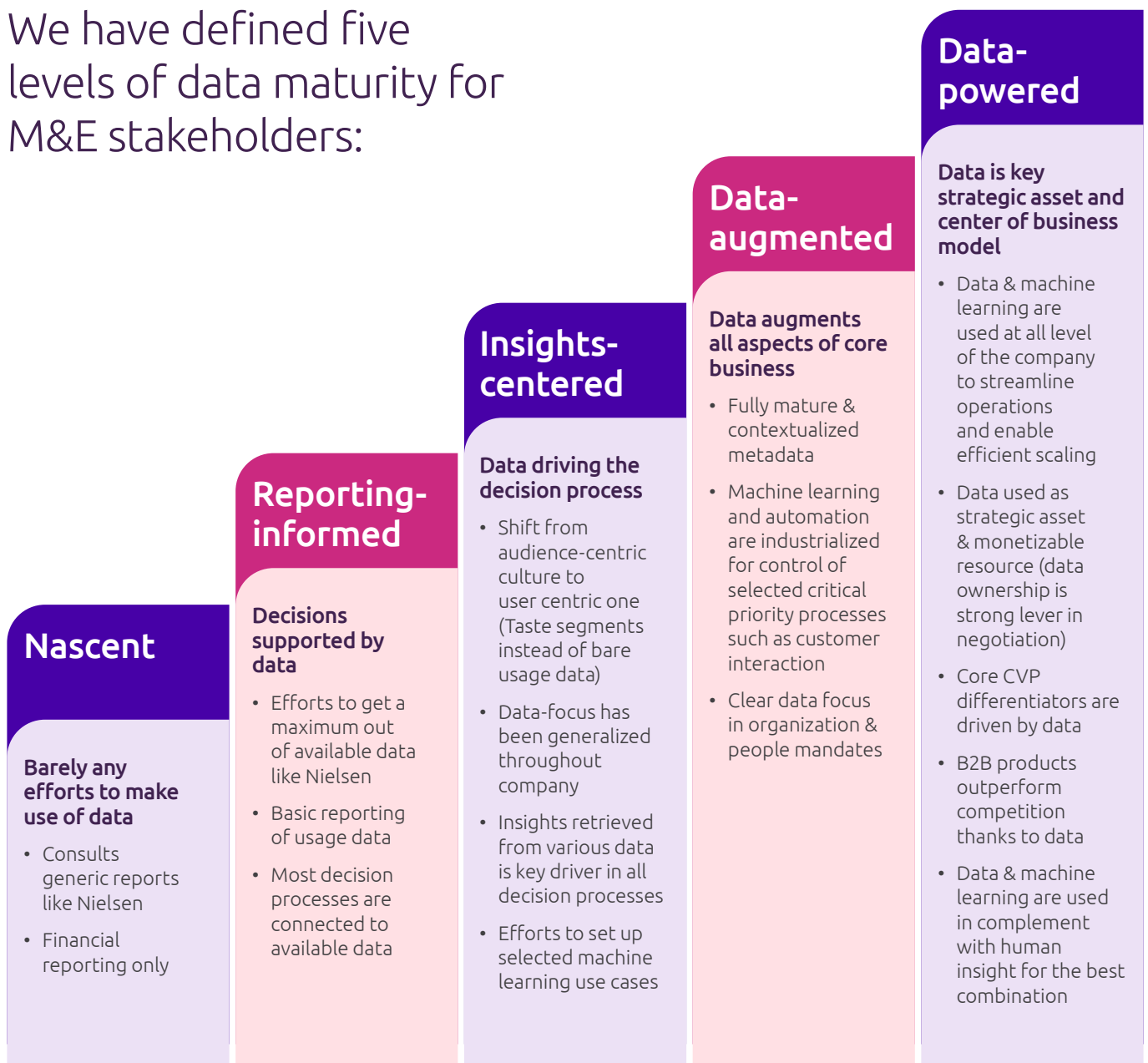
What the future might bring:

- Real time brand experience personalization, segmented by preference and powered by big data automation.



04 Two Out of Three Players Reach Only Basic Levels of Data Maturity

We have defined five levels of data maturity for M&E stakeholders:



Fully leveraging the power of data requires work on multiple streams at the same time

Media and entertainment companies differentiate on their level of data maturity. These levels include their general approach and the priority they give to data, the use made from collected data, and the organizational capabilities that enable data collection.

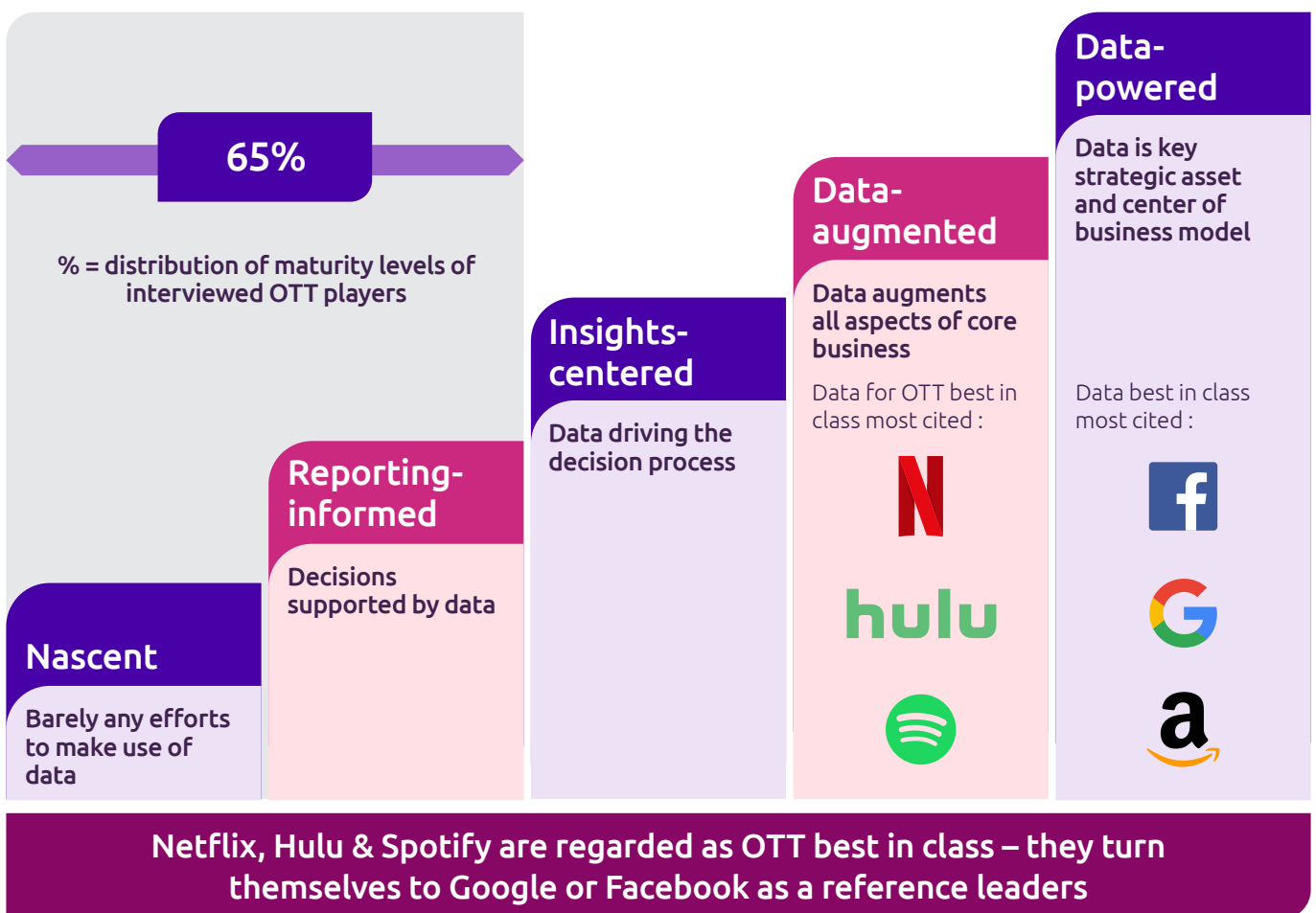
In that sense, we have identified five levels of maturity that define a data-powered approach, with the highest level of maturity being data as the strategic key asset and foundation of the business model.

	Nascent	Reporting-informed	Insights-centered
Strategy, vision & leadership	None	Maturity ambitions & transformation roadmap being defined Leadership recognizes use of quality reporting	Insights-drivenness is part of strategic planning Leadership drives transformation to insights-driven
Organization & roles		Coordinated, specialized market research & performance reporting team	Traditional market analysts & (big) data scientists for specific tasks are key talent but in separate teams
Skills	Few skills in traditional reporting functions	Local & unmanaged expertise in specialized teams	Analysts are recognized as key talent, business understanding is required from analyst side and interpreting insights competencies from business side
Culture	Little awareness & interest	Increasing interest in available reports from management, marketing & content teams	Importance recognized, have developed a customer-centric approach
Data sourcing & structuring	External sources only (eg. Nielsen)	Start actively collecting user data & producing internal reporting to compare to Nielsen Good metadata library enabling basic recommendations	Clean & structured own data with rich metadata library Move from audience data (traffic, views) to user-centric analytics (behaviour, segmentation...)
Data usage	Standard financial reports with lot of Excel-based manipulations Some ad hoc analysis	Standardized reporting Used by some teams to support decisions	Standardized daily reporting + deep analysis for specific business needs or situations Used by most teams to drive decisions First machine-learning use cases
Technology & structure	Data is difficult to access, fragmented, of low quality and traceability	Islands of data, tech & expertise Data lake efforts	Tools for analysis and democratic access Clean & structured data

	Data-augmented	Data-powered
	Core business strategy accelerated & augmented by data Leadership focus on seeking & pushing for industrialization of additional use cases	Data and algorithm-powered automation are the strategic key asset & leadership's core focus
	Different analyst teams form coordinated unit New role of 'insights-to-business' translator established Clear organizational structure to enable data mandate	Data and AI are pervasive in the organization, with a Chief Algorithmic Officer to lead the vision
	Insights-centered data interpretation standard throughout all profiles	World-class specialized analysts and excellent level of insight-reading across all profiles
	Data as key lever recognized in all teams & steps of the value chain	Passion for analytics & data across organization
	Rich fully owned data lake, third party data used to validate Ability to retrieve relevant insights by matching big data with thick data and contextual metadata	Rich fully owned data lake, third party data used to validate & strategic data sharing partnerships in place
ysis	Standardized daily reporting + deep analysis for specific business needs or situations Used by all teams for all types of decision taking First machine-learning industrialization <ul style="list-style-type: none"> Automated testing (eg. A/B testing) Data-models to optimize acquisition & retention efforts Data-augmented content provision & B2B products 	Phase 4 + Full machine-learning industrialization Data as strategic asset <ul style="list-style-type: none"> in negotiation, part of all contracts to enable larger business to create a real differentiated B2C & B2B product to define strategic investments (eg. expansion) Data as operations & scale accelerator
	Data quality, high-performance technology & tools and infrastructure are top-management priority Instauration of ML/AIops processes	Major focus is to keep the flow running with high-quality, timely data to feed algorithmic-based processes and business & activity monitoring dashboards

Despite Data Being Business Critical, Two Out of Three Media and Entertainment Companies Reach Only a Basic Level of Data-maturity.

Figure No: 4 Data maturity levels of interviewed OTT players¹⁶

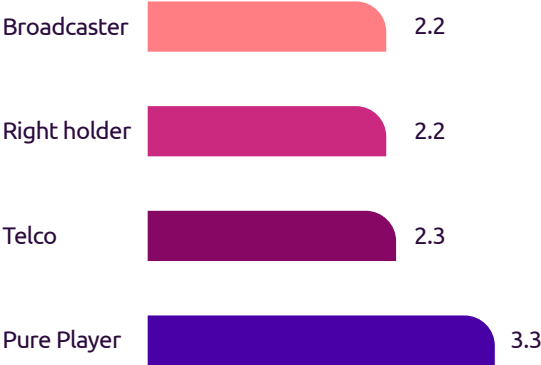


Even today's best in class OTT players, usually cited to be Netflix, Hulu or Spotify, are on a data-augmented, rather than a data-powered system. The true data-powered companies, like Facebook, Google, and Amazon are the leaders that today's strongest OTT players regard as the main success examples -- as well as competitors -- in the battle for customer and advertiser attention.

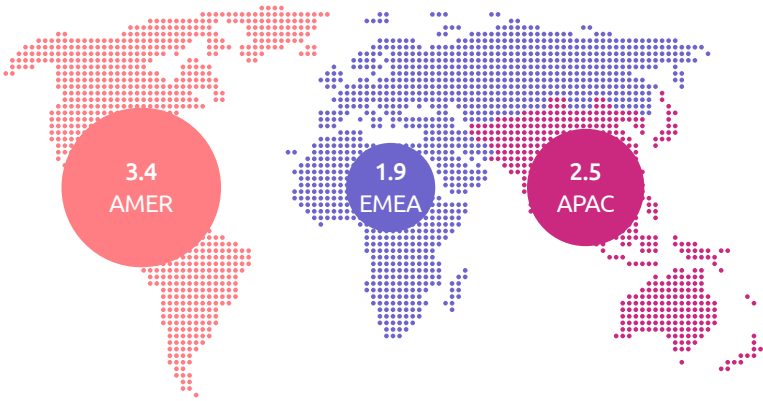
European and traditional players lag

We see a very significant difference in the level of data maturity between the American and European players interviewed. On the maturity scale from nascent (1) to data-powered (5), European players, on average, do not even reach the maturity of a reporting-informed (2) level – a maturity level far from being able to compete with the data-powered giants like Google & Facebook.

Maturity by business*



Maturity by origin*

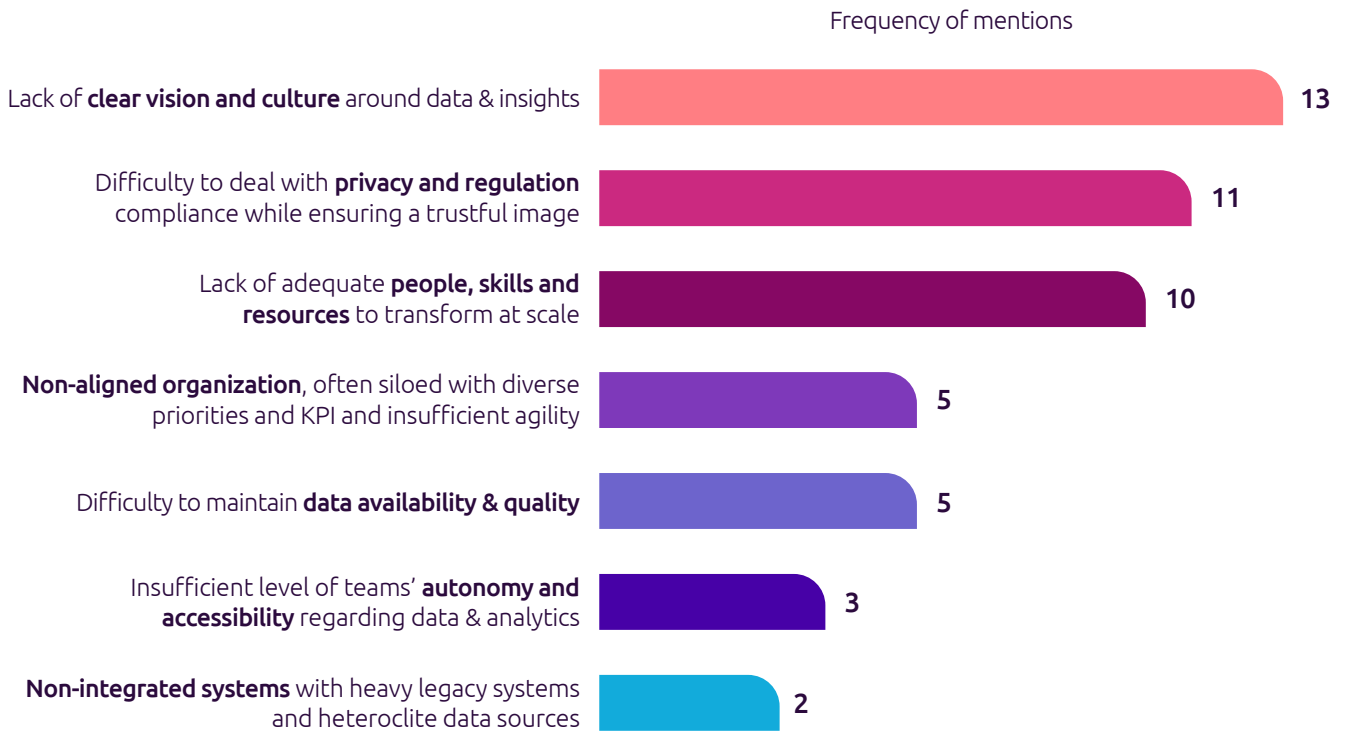


*Excluding experts and vendors

The Main Challenges to Accelerate Data Usage are the Lack of Vision and Culture Followed by Privacy and Skills.

Contrary to what one would expect, technology is perceived as the smaller challenge

Figure No: 3 Main challenges mentioned to achieve higher data maturity levels¹⁸



A good app, available on all platforms, asks for a big team size if you want to keep innovating"
European public broadcaster

Centralizing the team was essential to ensure common interpretation"
Major US OTT pure player

*Democratizing access to data requires clear alignment on KPIs"*¹⁹
Major US broadcaster

05 Best Practices of Leaders Help Overcome Maturity Challenges

By following best practices established by market leaders, OTT can tackle maturity challenges

1. Decide to set data at the core of the strategy across the full CxO suite

Usage, use case detection and data generation must be central KPIs for all business owners across the company. This new strategic focus must be clearly decided upon, committed to and communicated by management.

Judgment through data-based decision

Netflix defines its working culture by stating as its very first point that all employees must base their judgment data to 'inform their intuition'. The specialized insights team arms decision-makers around the company with useful metrics, insights, predictions, and analytic tools so that everyone can be stellar in their function.²⁰



2. Build an environment of trust and integrate it in the brand promise

Build an image by focusing on customer value proposition, providing higher level of transparency and giving the control to end-users over their data. Leverage data as a competitive advantage and to solve the privacy versus personalization dilemma, create B2B reliability and build trust and confidence of partners and advertisers.

Customer trust in goodwill of platforms

The visibility of customer trust issues around Facebook have raised awareness that especially ad-based platforms do not focus on customer experience/advantage that put the customer first.



People want hyper personalized experiences but don't want to give away any personal data – this is a new paradigm for the industry”

Rui Costa

Senior Vice President Innovation & Customer Value Propositions at Comcast NBCUniversal



The Privacy challenge

OTT platforms face a major challenge sharing data with their programming partners to allow data-driven advertising in a privacy-compliant manner. Trust is a key component when developing brand loyalty as a scalable offering and the best way to win trust is to make sure consumer privacy protections are in place between OTT platforms, content companies and advertisers.

OTT platforms need a cloud data platform that can let them easily turn the dial up on privacy, but still allow for the transparent data access and sharing necessary to build audiences and measure campaigns. Snowflake has built in all the controls and capabilities that deliver orchestrated privacy and security, without impacting performance or scale”

Bill Stratton

VP of Media Strategy at Snowflake



3. Address Users, not Audiences

To reach the required level of personalization and targetability, that OTT players must understand their customers on a user level, instead of an aggregated audience level. This requires that the OTT include as much data as possible, from internal and external cross channel information, and through optimization about user levels. The data should go beyond segmentation and delve into individual levels that build holistic views about users.

Segments are too abstract & simplified



Segments are too abstract and simplified. It requires truly understanding the customer and his profile instead of an abstract segment or stereotype to enrich algorithm and editorialization for hyper relevancy”²¹

Christian Kurz

SVP Global Insights, ViacomCBS

VIACOMCBS

Act global but think local

Understanding the local user's behavior and interests is key to offer a differentiating local customer value proposition

sky

4. Work on culture and skill sets to close the gap between business and data

Create business-centered insights and an insights-centered business. To ensure data-driven decision making is enabled throughout the organization, business owners need to access the data and have the right mindset and competency to read insights. Clear guidance must be provided through the organization and data users must have a shared understanding of data interpretation. Meanwhile, data teams need to foster synergies between data-science and market research to translate into actionable insights.

Data literacy is crucial



*It is important to not only make data available to the right teams internally, but also to ensure everybody knows what the data actually mean, what decisions they are good for and what not. Plus of course, with holes in data collection and inaccuracies all around, it is important to always first ask the questions of data quality, completeness and validity. All these are not new problems, it's just that the volume and speed of data have accelerated so much that they are easy to forget. At ViacomCBS, we have teams working very closely with data streams and ensuring that they are complete and valid, or alternatively make it very clear to users where the flaws in the data are, so that we can avoid any wrong decisions being taken based on wrong data"*²²

Christian Kurz

SVP Global Insights, ViacomCBS

VIACOMCBS

5. Build data-in-motion cloud-based architecture

Build an event-based architecture for real-time processing of data and trigger immediate business actions throughout the engagement and operational systems. This enables timely action, flexibility, ease of access and advanced capabilities provided by cloud platform vendors.

Growth enabled by cloud flexibility

Netflix got rid of physical data centers early on in their transformation when those data centers were not efficiently handling the high fluctuation in demand throughout the day. This allowed them to grow without investing in faster data centers²³

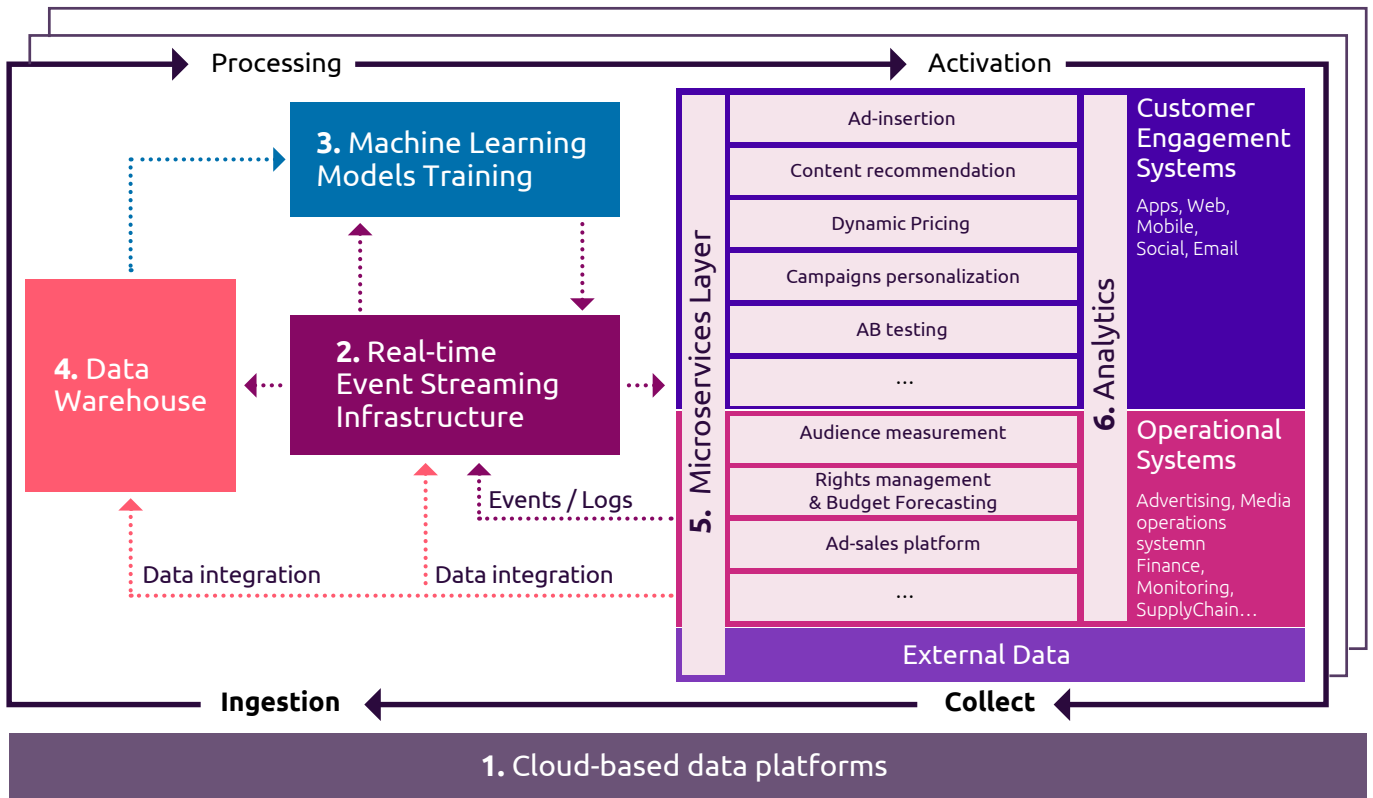
Managing massive flows of data

Netflix has invested heavily on building a top-class, mutualized Kafka infrastructure, enabling an even-based, distributed, microservice architecture. This allows data to deliver the best customer experience, update budgets and financials, support operations...²⁴

N

Data-in-motion architecture

Federated architecture per region



Mapping of market solutions

1. Cloud-based data platforms:

Google Cloud Platform, Amazon Web Services, Microsoft Azure

2. Real Time Messaging Infrastructure:

Confluent, Apache Kafka, Amazon Kinesis, Azure Streaming, Google Cloud Dataflow

3. ML models training:

Amazon SageMaker, Azure Machine Learning, H2O

4. Data Warehouse:

Snowflake, BigQuery

5. Engagement and Operational systems:

Salesforce, Pega, Oracle Bluekai, Gracenote, AB Tasty, Adobe, Freewheel

6. Analytics & Reporting:

Power BI, Tableau, Nielsen, Kantar media, Cflight

6. Become algorithms-centered

Set algorithmic decisions at the core of your company to stay ahead of the game in every business area. Gather information from many sources of interaction and data, transform them into insights, and decide to act upon them, any time, any place, and in real-time, while delegating to human beings only when necessary.

Netflix machine learning throughout company

Netflix is well known for using AI for more than personalization but also for optimizing video and audio encoding, production and much more. Using different algorithmic approaches including causal modeling, reinforcement learning, neural networks, etc.²⁵



Hulu AI powered experience with Watson

Augmented advertisement for Hulu, includes personalized content recommender and using natural language dialog to engage with potential subscribers. Furthermore, contextual (weather) information was used to predict and steer success of advertisement activity.²⁶



Youtube delivering fresh & relevant content

Every successful tech product, by the very definition, is a result of some technological marvels working with impeccable user experience to solve a key problem for the users. One such marvel is the recommendation engine by YouTube.²⁷



7. Balance and control algorithms by humans and foster creativity

Enhance algorithmic output with human curation by seeking the sweet spot between editorialization and algorithms. Inject a unique editorial spirit within a service by leveraging data and AI, performing it at scale and combining human opinion.

Collaborative & curated playlist

Discovery on Spotify works in multiple forms and is personalized for the individual. With fully curated playlists, by mood, genre, country etc. that are equally important and popular.²⁵



Don't neglect added value of creativity

The UX and recommendations of Peacock users is always a mix of curation and algorithm which adds important value vs Netflix to overcome the users' algorithm fatigue.²⁶



«Collections», new human-driven curation

Netflix is testing a new collections section that rounds up content into themed lists like "watch in one weekend" and "stream & scream," put together by creative teams instead of algorithms.³⁰



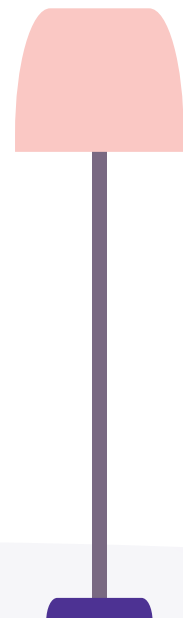
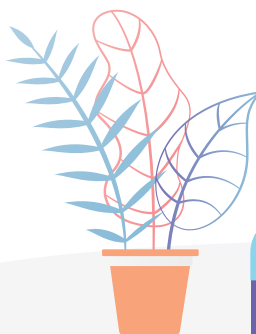
8. Align data governance to enable democratization and agility

Insights and algorithms can contribute to value creation only if data can be trusted and accessed. This requires strong governance such as DataOps to ensure data stays accurate, reliable and protected. And, equip all teams with the technology, resources and tools they need to help hasten access, processing, analyzing, insights and decisions making.

Dataops approach performed at scale

Netflix adopted a dataops approach designed to provide secured and automatic self-service access to data scientists to rapidly develop and deploy data-intensive applications for its recommendation engine.³¹

N



CONCLUSION: RAISE THE STAKE OR FOLD

The Direction Is Set Towards a Data-Powered Media & Entertainment Industry.

With OTT and streaming services, the media and entertainment industry has truly entered the age of data. The growth of digital media consumption, the launch of direct-to-consumer services and the advancement of advertising-based business models have made data strategically vital.

The development of these models is increasingly making companies data dependent, with the realization that customer and operational data can bring business value at every step of the creative and distribution processes.

The direction of being data dependent is set by the social media and technology giants who have put data, analytics and AI at the core of their business and operational models. Facebook and Google are the main players today, equally competitive in end-user attention and advertising dollars attractiveness.

Acceleration Is Required To Stay Relevant and Attractive For Subscribers, Content Providers Or Advertisers.

In an algorithm-driven competition, failing to extend reach and to deeply personalize the entertainment experience, will threaten long-term survival. Media & Entertainment companies need consequently to assess their competitive positions, revisit strategic capabilities and protect content and client assets. It is equally true as companies are more and more vertically integrated (ownership of production and distribution).The direction is set.

Becoming “data-powered” requires the understanding of leaders’ best practices and to address 3 dimensions simultaneously:

1. Put data at the heart of the media company strategy together with Content, UX and Branding
2. Enhance Value Propositions and Experiences for both customers and advertisers leveraging data
3. Adopt ‘data-in-motion’ operating models, capabilities and architectures

Becoming Data-Powered Ultimately Reinforces The Local And Societal Mission And Role Of Media Companies.

The age of data creates challenges for the Media & Entertainment industry as they need to learn and balance creativity, tech and data from production to distribution or monetization.

At the same time, it creates unique opportunities to differentiate the role of medias in contrast to the global algorithm “dictate” of social media. Media & Entertainment companies must become more intelligent, trustable and relevant by leveraging both data and people to safeguard media creativity, independence and diversity.

The future is now.

References

1. <https://www.statista.com/statistics/1095030/svod-pay-tv-subscriptions-countries-worldwide/>
<https://www.statista.com/statistics/1100925/svod-pay-tv-subscriptions-worldwide-by-country/>
2. <https://www.theguardian.com/media/2018/dec/23/netflix-to-overtake-sky-satelite-tv-subscriptions-by-end-of-year>
3. <https://www.businessinsider.nl/netflix-subscribers-international-vs-us-earnings-chart-2017-7?international=true&r=US>
4. Research done in June 2019 on:
<http://www.digitaltvnews.net/?p=33054>
<https://www.ozap.com/actu/le-marche-de-la-svod-a-double-en-france-en-2018/578336>
https://www.streamingmedia.com/Articles/News/Online-Video-News/U.S.-SVOD-Subscriptions-on-Pace-to-Pass-300-Million-by-2025-139606.aspx?utm_source=related_articles&utm_medium=gutenberg&utm_campaign=editors_selection
<https://www.digitaltveurope.com/2020/05/18/uk-to-double-number-of-svod-subscribers-by-2024/>
<https://www.tvbeurope.com/tvbeverywhere/uk-svod-subscriptions-increased-20-per-cent-in-2018>
<https://www.digitaltveurope.com/2020/07/22/pay-tv-and-svod-revenues-rise-and-rise-in-germany/>
<https://www.emarketer.com/content/cheap-data-in-india-led-to-enormous-growth-in-svod-users>
https://www.ofcom.org.uk/__data/assets/pdf_file/0019/160714/media-nations-2019-uk-report.pdf
5. Media consumption by age: Grabyo 2019 Report (US & some European countries) <https://about.grabyo.com/wp-content/uploads/2019/07/Grabyo-Global-Video-Trends-Report-2019.pdf>
6. <https://corporate.comcast.com/covid-19/network/may-20-2020>
7. <https://unesdoc.unesco.org/ark:/48223/pf0000124058>
8. Ampere analysis
9. <https://www.forbes.com/sites/forbesagencycouncil/2020/04/21/the-state-of-ott-advertising-in-2020-strong-and-gaining-momentum/#:~:text=In%20a%20report%2C%20Pixilate%20found,CTV%20ad%20transactions%20in%202019.>
10. Capgemini research, interviews conducted July-October 2020
11. Capgemini research, interviews conducted July-October 2020
12. Capgemini research, interviews conducted July-October 2020
13. <https://www.rohitbhargava.com/2018/08/communities-instead-demographics.html>
14. <https://techcrunch.com/2020/01/15/hulu-to-debut-new-ad-formats-in-2020-focused-on-letting-users-make-choices-transact-with->
15. Capgemini research, interviews conducted July-October 2020
16. Capgemini research, interviews conducted July-October 2020
17. Capgemini research, interviews conducted July-October 2020
18. Capgemini research, interviews conducted July-October 2020
19. Capgemini research, interviews conducted July-October 2020
20. <https://jobs.netflix.com/culture> ; <https://research.netflix.com/research-area/analytics>
21. Capgemini research, interviews conducted July-October 2020
22. Capgemini research, interviews conducted July-October 2020
23. <https://www.cio.com/article/2397486/cloud-computing-done-the-netflix-way.html>
24. <https://www.confluent.io/blog/how-kafka-is-used-by-netflix/>
25. <https://research.netflix.com/research-area/machine-learning>
26. <https://www.ibm.com/case-studies/hulu-watson-advertising>
27. <https://hackernoon.com/youtubes-recommendation-engine-explained-40j83183>
28. <https://www.complex.com/pigeons-and-planes/2020/07/youtube-spotify-editorial-playlists-algorithm-human-connection>
29. <https://www.hollywoodreporter.com/news/nbcuniversal-exec-warns-algorithm-fatigue-streaming-wars-1271632>
30. <https://techcrunch.com/2019/08/23/netflix-tests-human-driven-curation-with-launch-of-collections/>
31. <https://www.youtube.com/watch?v=mM3t5f1X8Og> + webinar : <https://datainnovationsummit.com/join-the-tech-giants-at-the-dis-2020-netflix-airbnb-uber-spotify/>

Glossary

- **OTT** : Over-the-top media distribution across the internet, directly to end consumers
- **Linear TV** : real-time television service that delivers scheduled programs, conventionally over the air or through satellite/cable
- **VOD** : Video-On-Demand. Refers to any video that can be accessed at the user's convenience and isn't restricted by program schedule.
- **Streaming On-Demand** : Enables you to view on-demand videos without downloading them. Requires internet access.
- **Pay TV** : television broadcasting in which viewers pay by subscription to watch a particular channel.
- **SVOD** : Subscription video-on-demand
- **AVOD** : Advertising video-on-demand
- **TVOD** : Transactional video-on-demand
- **Machine Learning** : The process in which a computer distills regularities from training data. An algorithm "learns" to identify patterns, like occurrence of certain elements (e.g. words, images) or combinations of elements, that determine or inform operational decisions
- **4K** : 4K resolution displays 3,840 x 2,160 pixels which are used to create the image on the screen. This is four times the number of pixels displayed on a Full HD TV, which displays 1,920 x 1,080
- **8K** : 8K resolution displays 7,680x4,320 pixels which are used to create the image on the screen. This is over 33 million pixels and four times the number of pixels in a 4K TV (16X compared to Full HD) providing the highest resolution available on a TV today.

Authors

Frédéric Vander Sande

Vice President
Head of Media & Entertainment
Europe Capgemini Invent

Manel Belarbi

Manager
Capgemini Invent

Ann-Kathrin Falkenberg

Senior Consultant
Capgemini Invent

Contributors

Nicolas Clinckx

Vice President
Head of Telecom Media
and Technology
Capgemini Invent France

Jodouin Mitrani

Directeur of Strategy
& Growth for Media &
Entertainment
Capgemini France TMT Unit

Kenza Terrab

Senior Consultant
Capgemini Invent

The authors would like to thank all the interviewees participating to this report for giving their time and valuable input.

The authors would like also to thank Jacques Assaraf, David Giles, Sanjay Dhar, Madan Sundararaju, Annette Klimczak, Neelakantiah, Gireesh Kumar, Yannick Martel, Johannes Aasheim, Jérôme Bourgeois, Jean Pierre Villaret, Valérie Perhirin, Kiri Trier Kristin, Camille Juguet, Linda Asplund, Francesco Lacoboni, Sean Rhodes, Chiara Diana for their contribution to this research.

Also, a last minute tribute to Julia von Both, Zakir Sayed, Manas Kar, John Casey and the rest of the marketing team for the work accomplished!

For more information, please contact

GLOBAL

Jacques Assaraf
Jacques.assaraf@capgemini.com

Frédéric Vander Sande
Frederic.vandersande@capgemini.com

Sanjay Dhar
Sanjay.dhar@capgemini.com

NORTHERN AMERICA

Christof Mees
christof.mees@capgemini.com

Madan Sundararaju
madan.sundararaju@capgemini.com

ASIA PACIFIC

Mike Welch
mike.welch@capgemini.com

Gaurav Modi
gaurav.modi@capgemini.com

FRANCE

Nicolas Clinckx
nicolas.clinckx@capgemini.com

Jodouin Mitrani
jodouin.mitrani@capgemini.com

UK

Amanda Gosling
amanda.gosling@capgemini.com

Matthew Whitson
matthew.whitson@capgemini.com

GERMANY

Kiri Trier
kiri.trier@capgemini.com

Birgit Dziallas
birgit.dziallas@capgemini.com

BENELUX

Frédéric Vander Sande
frederic.vandersande@capgemini.com

Diederik VIELEERS
diederik.vieleers@capgemini.com

ITALY

Alessandro Puglia
alessandro.puglia@capgemini.com

Gea Smith
gea.smith@capgemini.com

SWEDEN & FINLAND

Fredrik Gunnarsson
fredrik.gunnarsson@capgemini.com

Sanjay Beloshe
sanjay.beloshe@capgemini.com

NORWAY

Johannes Aasheim
johannes.aasheim@capgemini.com

SPAIN

Rolando Ober
rolando.ober@capgemini.com



About Capgemini

Capgemini is a global leader in consulting, digital transformation, technology, and engineering services. The Group is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. A responsible and multicultural company of 265,000 people in nearly 50 countries, Capgemini's purpose is to unleash human energy through technology for an inclusive and sustainable future. With Altran, the Group reported 2019 combined global revenues of €17 billion.

Visit us at

www.capgemini.com