Becoming a “living” media partner for your consumers

A cognitive future for media and entertainment

IBM Institute for Business Value

How IBM can help

IBM helps media and entertainment companies across the globe transform themselves into agile enterprises that serve the connected customer. From production workflow and audience analytics to mobile platforms and cloud solutions, IBM helps clients with content production, content distribution, sales and services, marketing and business systems. The new solutions increasingly rely on cognitive computing for audience insight, advertising intelligence, cognitive customer care and personalized content recommendations. IBM continues to invest significantly in research and key acquisitions to add expertise and capabilities that enable clients in this industry. For more about IBM media and entertainment solutions, see **ibm.com**/communications.

The end of broadcasting as we know it

The digital world has turned the broadcasting paradigm upside down. Media companies need to deliver the best individual experience to every consumer in context, in the moment and all the time. And yet, customer expectations are now far ahead of delivery — so far ahead, in fact, that broadcasters need to completely reinvent themselves. This Digital Reinvention™ requires a much deeper understanding of content and customers, as well as scalable solutions that support the quality of delivery in every circumstance. It also requires processes that can fully monetize the opportunity, including better rights and royalties clearance and advertising yield optimization. Successful media companies of the digital future will need to have a broad cognitive strategy and investment priorities that align to the goals of maximizing return on content investment while excelling at customer services.

Executive summary

Previous reports in this series established the urgent need for media companies to personalize content and to begin to undergo a Digital Reinvention.[1] In the two years since these reports were published, the landscape has changed dramatically. Broadcasters both new and established are facing disruption as never before as the demand for video continues to boom.

More and more consumers are turning to smartphones, tablets and other mobile and Internet-connected devices and services to watch video. Our recent survey of nearly 21,000 people across 42 countries confirms that not only are consumers increasingly watching video over the Internet, but they are clearly going mobile, with people using mobile broadband where WiFi is not widely available. As a result, the Internet is morphing into a video distribution network for digital entertainment that competes with traditional broadcasting for consumers' attention.

Digital disruptors such as Netflix, Amazon, Facebook, Google and Snapchat are now competing directly with traditional media and entertainment companies for the time, advocacy and money of consumers. In this highly competitive and fast-changing landscape, broadcasters need to deliver the best individual experience to every consumer in context, in the moment and all the time. To accomplish this, they need to embrace a comprehensive cognitive strategy. By using the latest capabilities to interpret and predict mass, niche and individual sentiment toward characters, shows and storylines, media companies can more effectively measure the Zeitgeist. By automatically indexing entire archives or hundreds of simultaneous live video feeds, companies can match content to demand, cut production costs and optimize content spend — resulting, potentially, in improved business models and restructured industry hegemonies.

72%

of surveyed consumers agree that it is important to have a good quality video streaming experience on their mobile devices

65%

of surveyed consumers say they often or regularly experience buffering problems while watching video on their mobile devices

57%

of surveyed consumers agree that receiving high-quality, exclusive video content is a key incentive to remaining loyal to their providers

The serving of tens of millions of individuals, individually, scales broadcasters’ delivery challenge significantly. Packaging, delivering, marketing and monetizing content assets at hyperscale cannot be done with existing processes and infrastructure. Broadcasters need to move aggressively to cloud-enabled production, cognitive rights and royalties clearance and automated advertising yield optimization.

The landscape has changed. Audiences are fragmented, the competition from disruptors is relentless, the accelerating shift toward mobile continues unabated and a content renaissance has left consumers feeling lost in a sea of available programming. The time to act is now. Media and entertainment companies that want to stay in the game may need to embark upon a holistic, orchestrated and integrated program of Digitial Reinvention to focus their resources, investments and capabilities on the things that truly matter.

Media companies need to do everything they can to focus on maximizing content investment and return while excelling at customer experience. These objectives may require developing new areas of expertise, new ways of working and a renewed focus on competitively differentiating capabilities.

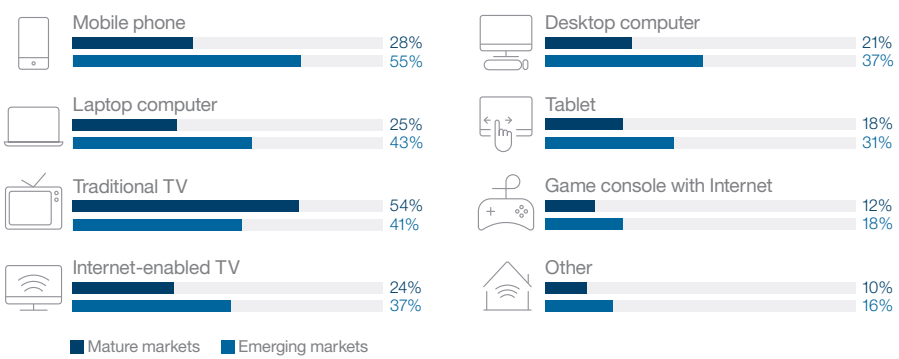
A growing appetite for video

With the proliferation of smartphones, tablets, Internet-connected TVs, game consoles and other Internet Protocol-enabled devices, consumers are spreading their viewing habits across multiple screens (see sidebar, "The explosive growth of online video"). While traditional TV is still the primary screen that many turn to in most mature markets, the mobile phone has become the key screen for watching video in emerging markets, where 55 percent of surveyed consumers use it daily for this purpose (see Figure 1). This is also true for the younger generations in mature markets, where 49 percent of surveyed consumers under 25 in the United States, for example, report that they watch video on their mobile phones daily (versus 37 percent who watch linear TV).

Figure 1

Consumers are spreading their viewing habits across multiple screens

The devices consumers use daily to watch video



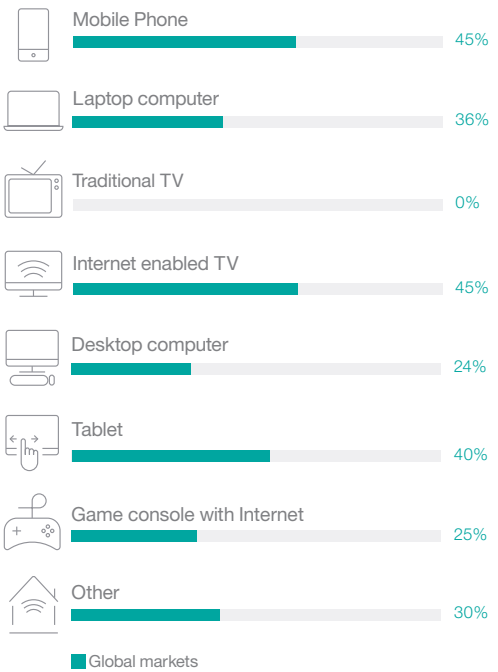
The explosive growth of online video

Video streaming — both on-demand and live — has become increasingly popular. Today people are watching a wide range of Internet video — from online TV or subscription services such as Netflix to free video from platforms like YouTube. And people see video virtually every day while scrolling through recent social feeds in communities such as Facebook, WeChat and LINE. User-generated video — including personal live streaming — introduces even more exciting possibilities for them. The appetite for video will further increase with new technologies such as virtual and augmented reality video. Indeed, video is the future of media on the Web and is competing with scheduled linear TV content for consumers' attention.

Figure 2

Video is not only increasingly consumed from the Internet, it is clearly going mobile

Expected increase in video consumption on devices over the next three years (across all 42 countries surveyed)



Over the next three years, consumers expect to increase the use of all types of mobile and Internet-connected devices for viewing video (see Figure 2). However, our survey suggests that we will see a decrease in the numbers who watch scheduled linear TV, and that this decrease will occur across many countries, including a decrease of 2 percent in Germany, 7 percent in Canada and 12 percent in China. Television’s popularity as an entertainment device is generally in decline.

Consumers are accessing video in multiple ways. Globally, 51 percent of surveyed consumers (67 percent in emerging markets) say they access free, over-the-Internet video from providers such as YouTube, Facebook and Snapchat, whereas 48 percent say they access video through regular subscription from traditional pay-TV providers. Not surprisingly, the gap is larger for the younger generations. Among respondents under 25, 62 percent say they access video online, and just 42 percent turn to pay-TV providers.

Globally, 28 percent say they watch paid video from providers such as Netflix and Amazon. Of course, this figure is higher in mature market countries such as the United States (42 percent). The global average of those watching paid video from paid Internet players is already greater than the 26 percent who access premium video services from traditional pay-TV providers.

Consumers say they select video from over-the-top (OTT) Internet providers because of convenience and ease-of-use (selected by half of the respondents) and the ability to watch whenever and wherever they want (44 percent). Other cited reasons include affordability (30 percent), greater content choice (29 percent) and better content discoverability (24 percent).

Video consumption on the go

As mobile broadband deployment, speed and capacity are expanding, people are spending more time watching video using a mobile subscription — in particular at places where WiFi is not widely available. Among respondents who watch video on mobile devices, about a quarter

say they spend 1 – 2 hours a day on average using mobile broadband. Most respondents say they are likely to increase this viewing time in the coming years; the highest numbers of such respondents are in Thailand, China, Indonesia and India, where there is a great dependence on mobile networks.

Despite their drive to go mobile, many respondents say the experience leaves much to be desired (see Figure 3). For example, they very often or regularly experience buffering problems (65 percent), long waiting times to start a video (62 percent) and video quality problems (57 percent). While there may be many reasons why these video problems occur, customers are more likely to blame the mobile network, with 29 percent in mature markets and 45 percent in emerging markets believing the network is at fault. More than half of the respondents (56 percent) say they would even switch providers if video quality becomes particularly bad.

Figure 3

Many respondents using mobile broadband have problems while watching video on their mobile devices

Problems when watching video on a mobile device using mobile broadbrand

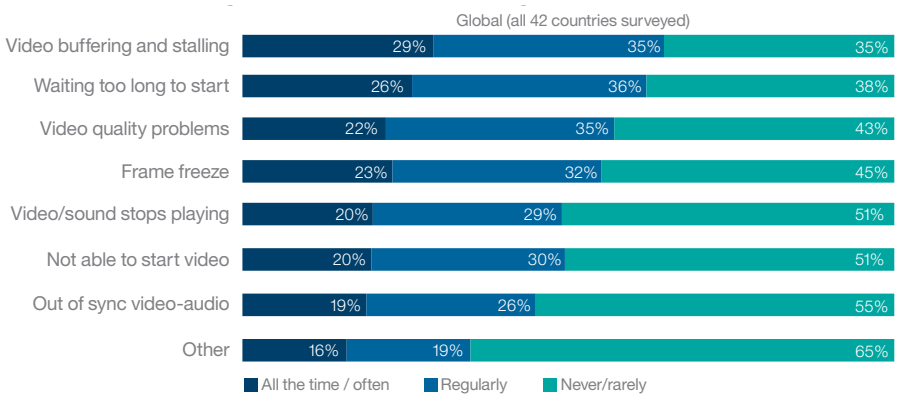
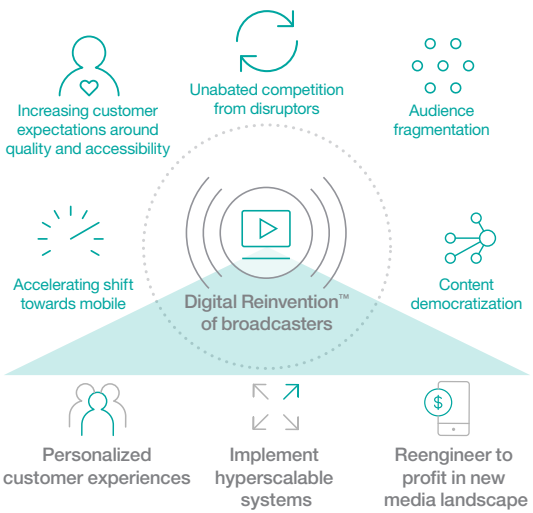


Figure 4

A number of trends are driving the need for a Digital Reinvention of broadcasters



The need for Digital Reinvention

In addition to growing customer expectations and the drive to go mobile, media companies face additional challenges (see Figure 4). Audiences are fragmented. The proliferation of video platforms and services makes it increasingly challenging for advertisers and content providers to reach target audiences with relevant offerings and messages.

The competition from OTT disruptors — providing greater consumer choice and fostering innovation in content, service and business models — is fierce. This is driving investment in new OTT offerings by traditional broadcasters and video providers.

Moreover, technology-driven growth in the content ecosystem is resulting in content democratization, enabling more dynamic social, short-form and immersive content formats and facilitating cross-platform competition for traditional licensed and original content.

A content renaissance is emerging. The proliferation of distribution channels has driven increased competition in the investment of high quality, original content. With so much great content available, consumers need help to find the programming that constantly delights them, and producers and distributors need help matching content with audiences.

With customer preferences and demands evolving so quickly, media companies are facing broad challenges. To succeed, they must enthusiastically embrace the opportunities that the marketplace is currently presenting:

- *Apply cognitive technology to achieve personalization.* Delighting and engaging each individual consumer by understanding the personalized, in-the-moment experiences each customer craves is critical. Cognitive solutions can be instrumental in obtaining these insights (see “I want my MTV,” page 8).
- *Revamp infrastructure to meet the coming demands.* Companies will need to implement hyperscalable systems to manage the exploding media processing throughput necessary to analyze, personalize, scale and distribute video content (see “Video killed the organization,” page 11).
- *Reengineer business models to profit from in the new media landscape.* Media companies will need to make backend systems and processes more intelligent to fully monetize the new opportunities while cutting costs and refocusing investment on content and customer experience (see “Money, money, money,” page 15).

92% of media and entertainment executives familiar with cognitive computing believe it will play an important role in the future of their business. [2]

I want my MTV

Today's digital services have redefined excellence in customer experience, across industries. Recent innovations, including the iPhone's elegant interface and rich app ecosystem, Uber's instantly accessible transport via an extensive "virtual fleet" and Amazon's personal recommendations that drive consumer engagement and spending, have fueled heightened expectations around simplicity, personalization and convenience in every aspect of consumers' digital lives.

Media companies must meet and look to exceed these elevated expectations to remain relevant. They must understand their audiences as individuals; recognize their sentiments toward shows, storylines and characters; interpret topicality, mood and resonance; and optimally align content with individual needs, whether that content is live, recorded, acquired or archived.

To deliver services personalized in the moment, broadcasters must gain insights from large amounts of data and act on it in real time, leveraging advanced data handling and cognitive systems. In fact, organizations like Netflix, Spotify, the Masters and Wimbledon are already using cognitive computing and artificial intelligence (AI) to create, acquire and program content, personalize services, manage advertising inventory management, streamline production and enhance staff productivity (see sidebar, "Wimbledon enriches the fan experience").

Cognitive insights on customers and content

Although media companies have advanced in recent years, most lag the digital disruptors in the application of data, machine learning and advanced automation to deliver next-generation experiences at scale. Organizations that rely on traditional analytics tools to unite their data across legacy systems can gain an understanding of their content, operations and audiences. These tools can begin to unlock the value of organizational data, but the true, transformative difference lies with cognitive technologies. Cognitive solutions go much further, supporting a deeper level of

Wimbledon enriches the fan experience[3]

Tournament organizers always want to engage fans with exciting video content. Building on cognitive successes during the 2017 Masters Golf Tournament, Wimbledon used leading AI technologies to bring to life the most exciting moments of the 2017 Championships. The video production team used a live, AI-powered system to auto-curate match highlights based on analysis of crowd noise, players' movements and match data. Additionally, the scalable solution was flexible enough to quickly accommodate requested production team system changes as well as fan feedback on posted videos. This technology not only helped simplify and accelerate the highlight video production process, but also created a richer fan experience. The editorial team was able to more easily and quickly curate and distribute an array of relevant, compelling highlights packages that reached fans on a variety of platforms, including Wimbledon Digital Platforms, YouTube and Apple TV.

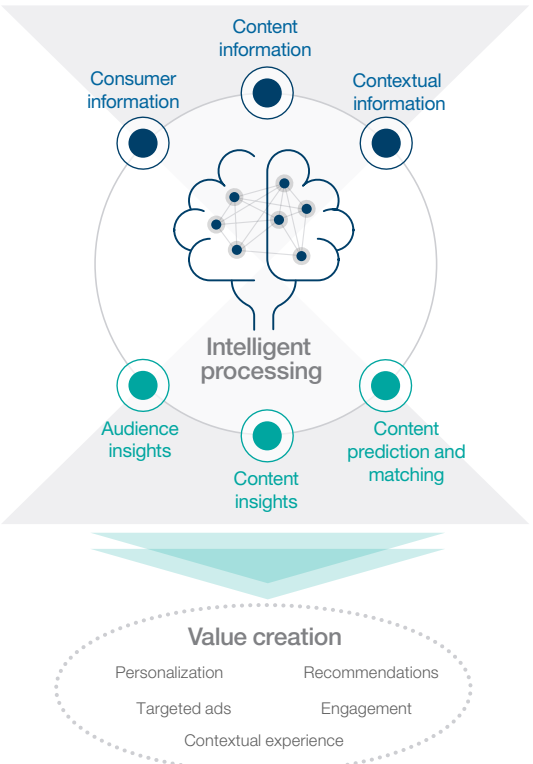
processing, understanding, reasoning and learning that can drive more accurate, valuable enterprise decisions and results (see sidebar, "Spotify uses AI to create individual experiences for 140 million users").

Ultimately, the goal is to match content to audience expectations. Cognitive applications in media and entertainment help to do just that, delivering a more compelling customer experience (see Figure 5). Specifically, these applications can provide:

- *Audience insights:* Deep, data-driven social portraits of individuals, generated automatically and reliably by AI capabilities such as natural language processing. Analysis of people's voice tones and tenor, the tendencies of their social conversations and their preferences can help provide a stable, practical and dependable methodology for predicting interest and matching individuals to content.
- *Content insights:* A deeper understanding of a company's archive and its live content. Sophisticated video and audio interpretation techniques along with natural language processing and machine learning of "video content" domains or types (typical genre plot lines and rhythms or significant sporting movements, for example) can automatically tag video content with rich metadata and context allowing faster, easier and cheaper indexing, packaging and retrieval.
- *Content prediction and matching:* Putting audience insights and content insights together heralds the possibility of matching audience interest to content relevance more accurately, more in the moment and with a much greater degree of personalization than would be possible without some level of automation. These capabilities can foster an enhanced customer experience and business model optimization through more highly informed content investment decision making.

Figure 5

Cognitive capabilities are required to match content to audience expectations, delivering a more compelling customer experience



Spotify uses AI to create individual experiences for 140 million users[4]

Spotify, the New York-based streaming service, faces a unique challenge: How to help 140 million individual users get the most from a growing catalog of more than 30 million tracks. Over its history, Spotify has progressed from editorial approaches to collaborative filtering and more advanced deep learning models for recommendations and personalization. Today, hybrid and artificial intelligence (AI)-based models are driving features that surface tracks, artists and playlists based on individuals’ unique preferences and context. Recently, Spotify began applying deep learning to address the “cold start” issue — how to develop recommendations for newly released tracks, with no history of user interaction. With raw audio spectrograms as input, Spotify’s audio analysis engine is able to classify and align new tracks with individual interests — even before the first users have listened.

By applying cognitive capabilities to segment and microsegment audiences, companies can derive a deeper and richer understanding of customers to better inform content creation and predict content success. These capabilities can also help to divide content into smaller segments to streamline development and simplify reuse. Cognitive technologies can automatically index visual content (by topic, for example) to enhance content discovery both for consumption and production. Finally, cognitive solutions create monetization opportunities that were not there before, optimizing ad targeting, content bundling and pricing. In the end, all of these objectives contribute to the delivery of more dynamic, highly personalized and contextual experience for consumers.

The power of cognitive computing can be further enhanced by integrating contextual data from third-party sources such as local news and events, weather and social media, including consumer conversations about content, storylines and characters. Media organizations can use the enhanced data, insights and learning from cognitive solutions to further enhance customer experiences, drive operational efficiencies and optimize monetization opportunities (see “Video killed the organization,” page 11 and “Money, money, money,” page 15).

Looking ahead

Facing rapidly escalating consumer expectations and quickly evolving industry trends and challenges, broadcasters and other media companies must seize the reins — and they should do so soon — if they hope to transform themselves into customer-focused, insight-driven organizations that are capable of matching content to audiences. Cognitive capabilities can play a critical role in this transformation. Surpassing traditional data and analytics tools, cognitive solutions can unlock and interpret previously inaccessible data, yielding audience, content and contextual insights that can help companies to deliver compelling personalized experiences.

Video killed the organization

Today, broadcasters typically support 1 – 5 channels, and cable and satellite providers may offer a few hundred. Satellite and cable providers serve tens of millions of subscribers, and some events and media properties have audiences of billions. Moving from several hundred channels to several million “cable channels for one” that predict and serve individual needs in real time will require much more flexible and scalable media processing systems.

Media processing throughput will increase dramatically as content needs to be repackaged for many more “channels.” The timing of peak loads on processing systems will be unpredictable. Media companies will need to ensure that their systems are flexible, scalable and interoperable, prompting them to move aggressively toward multi-tenanted or cloud-based platforms.

Only then will they be able to compete effectively against market disruptors — such as Amazon and Netflix — who have already adopted born-on-the-cloud agile platforms to attract audiences with high-value content. These disruptors are now playing in every space, including television production, cloud-based media supply chains and physical product distribution and learning.

NBC Olympics delivers unprecedented coverage of the 2016 Games[5]

For the 2016 Olympic Games in Rio de Janeiro, NBC Olympics served up an unprecedented 3.3 billion total streaming minutes (2.71 billion of which were live), TV simul-stream coverage of nine television networks and first-time streaming to connected TVs. One hundred million unique users tuned in to the broadcaster's digital coverage over the course of the 2016 Games.

Hyperscalable, cloud-based systems, advanced ingest capabilities and other online video technology helped set the stage for what was an unparalleled level of digital coverage from Rio. The Games featured live streaming to desktops, mobile devices, tablets and connected TV platforms, marking the evolution of streaming to support large-format living room displays along with record consumption by online audiences taking advantage of both primary and secondary screens.

The need for hyperscalability

Today's consumers want a unified media experience with platform-agnostic content, available on an assortment of devices using a growing variety of distribution channels. They also crave personalization, which means that media companies need to target an "audience of one" and align the distribution of content assets to individual preferences. Delivering these experiences rapidly increases the complexity of content distribution while exponentially growing the available data about content, customer interactions and transactions.

Dramatically changing output needs demand new production technologies and processes, as well as new approaches to content acquisition and origination. Media companies need to re-architect and migrate the whole value chain by creating a flexible and hyperscalable content creation environment. Companies will need to implement these hyperscalable systems to manage the exploding media processing throughput that will result from the personalization of video content (see sidebar, "NBC Olympics delivers unprecedented coverage of the 2016 Games").

A hyperscalable system needs to accommodate all types of content, manage increasingly complex and diverse workflows and automate content value chains. Such a platform has to be scalable to accommodate growth, resilient to support uninterrupted service and secure to manage identities and protect valuable assets. Leveraging a cloud or a hybrid-cloud infrastructure is key to delivering these system requirements (see sidebar, "Channel 4 moves content to the cloud," page 14). Fifty-two percent of media executives participating in a recent IBM survey said the hybrid cloud enhances operational efficiency when scaling up their business workloads.[6]

Integrating core systems and processes

Media companies will need to move to integrated platforms that orchestrate modular services to support evolving business needs (see Figure 6). Such a platform will need to support the intelligent use of both on-premise and cloud-based components, composed by agile development and continuous delivery.

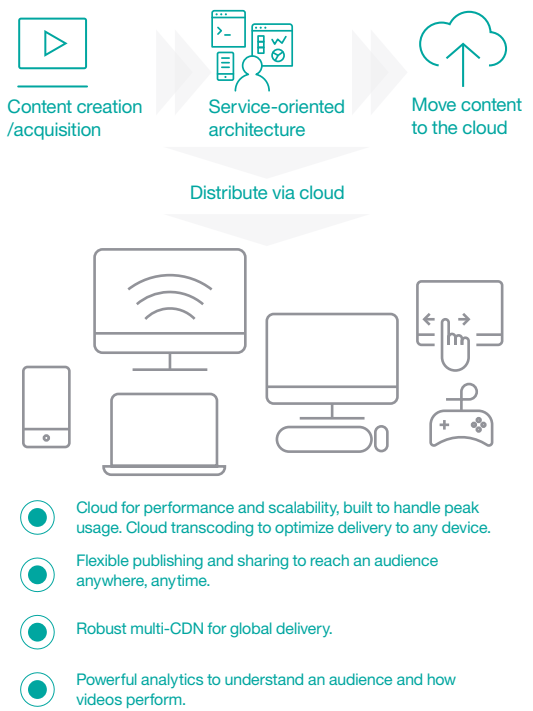
To adapt quickly to changes in the marketplace, content value chains — from acquisition through production to distribution — need to be unified. This requires workflow automation, which must take into account the media content, associated rights and technical and descriptive metadata. Media workflow systems must monitor system infrastructure, the location of content and distribution channel characteristics. In addition, related advertising, scheduling, billing, customer management and content management systems and processes may need to be reworked. As media companies move to a hybrid cloud infrastructure, they will need to consider the integration requirements of all of these related systems.

Enriching workflow automation with cognitive capabilities can help media companies monitor the system infrastructure or extend the metadata footprint of content and audiences. As a result, companies can reduce the cost of multiple storage environments and unnecessary transcoding or asset transfers. They can also extend the overall environment capabilities to content providers across distribution channels and foster new monetization models for existing content.

By applying cognitive methods to both audience insights and content distribution, media companies can create an architecture that scales automatically based on predictions of audience demands and peak loads, helping to match costs and resources dynamically to changing market conditions and business or operational needs.

Figure 6

To support the complex requirements of an increasingly multi-platform, multi-device delivery model, companies need to move to a cloud-based infrastructure



Channel 4 moves content to the cloud[7]

Channel 4, a British broadcaster, implemented a system to enable the rapid and secure transfer of thousands of hours of video content to the cloud for its popular video-on-demand service, 4 on Demand (4oD). The broadcaster now benefits from a modern, easy-to-manage cloud-based solution that is secure, reliable and fast. The process of transferring content to the cloud is fully automated, eliminating the need for manual intervention.

Transfer capacity can be scaled-out as needed to meet demand. Maximum speed end-to-end is ensured, and large collections of small files for “tiled” video formats are transferred just as fast as large video files. With this solution Channel 4 can predictably transfer a greater volume of content to the cloud, helping the broadcaster to satisfy growing viewer demand for cross-platform services.

Looking ahead

Media companies need to act now to begin to revamp their infrastructures to meet the coming demands. They will need to implement hyperscalable hybrid cloud systems to manage the exploding media processing throughput necessary to personalize and deliver the targeted video content their audiences want. These companies should establish a migration plan to cope with the increased scale and unpredictability of throughput and to investigate the integration needs of advertising, scheduling, billing, customer management, content management and content workflow systems. Cognitive capabilities can help media companies evaluate and deploy the appropriate infrastructure in the most deliberate and intelligent ways, predicting pre-provision scaling requirements and, potentially, reducing costs significantly.

Money, money, money

The effective use of data is becoming critical to optimizing revenue and costs in the media industry. With the proliferation of content, new channels and platforms, and new packaging and monetization models, executing data-driven optimization at scale will separate industry leaders from laggards over the next decade. The erosion of traditional content bundles and distribution hegemonies heightens the threat of industry disruption, and those companies that can capitalize on evolving trends, realign processes and people, and reinvest for growth will emerge as leaders for the next generation.

To be successful in this new environment, companies must better understand and leverage data about their content and how audiences are connecting with it. They must also synchronize their processes and systems for planning and scheduling content with those for managing content rights, distribution, ad inventory and ad copy.

Cognitive techniques are playing a growing role in both revenue and cost optimization. From content discovery, personalization, pricing, ad targeting and yield management, to content editing and captioning, cognitive tools are already driving significant business value for companies such as Netflix, BBC and the Masters Tournament.

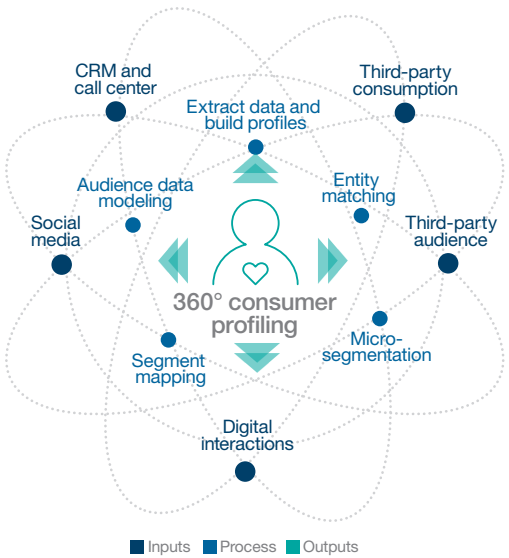
Cognitive strategies for optimizing revenue

Advertising revenue

In an always-connected world with unprecedented consumer choice, personalization and discovery will be critical to maximizing value for content producers, aggregators and distributors. As traditional network bundles give way to customized networks for one and expansive on-demand options, an important challenge is matching content and individuals, dynamically and efficiently, based on a deep understanding of the viewer's preferences, mood and context (see Figure 7).

Figure 7

360° consumer profiling: *Move beyond demographics to deep psychographics, interests and preferences*



Audiense embraces cognitive computing to discover personality traits[8]

Audiense offers a suite of marketing tools that help companies perform audience and social listening analysis, as well as end-to-end campaign management and ad optimization on Twitter. Seeking to help marketers further enrich their client profiles, the company turned to cognitive computing for a solution that enables segmentation at a psychological level.

Audiense integrated cognitive capabilities into its platform to enable the creation of detailed personality profiles of Twitter users based on the language they've used. Once the personality traits of a target group are identified, marketers can use the platform to find that audience on Twitter based on any of the traits. By analysing 47 potential traits, needs and values, the platform enables deep levels of insight – and competitive advantage.

Cognitive analytics plays a key role here by assessing patterns across vast structured and unstructured data, from individual behaviors (such as purchasing, viewing and clicking) and sentiment (such as content, storylines, characters, topicality, relevance, mood) to content attributes (such as genre, style, mood, cast reviews) and context (such as local weather, news, events, social media). The technology generates deep insights into consumers' interests and buying behaviors that can drive relevance in both content and advertising.

Companies such as the Weather Company and Audiense are using cognitive techniques to optimize ad targeting and yield (see sidebar, "Audiense embraces cognitive computing to discover personality traits").

Content revenue

In this new digital landscape, media companies must expand their capabilities around intellectual property (IP) management. Managing payment of royalties to artists, authors and rights holders is a core objective for most media enterprises. To remain relevant, every media company, no matter the size, will require a rights solution to efficiently and accurately track IP asset data across increasingly complex ecosystems.

In fact, without a radical reinvention of rights and royalties systems, it is unlikely that media companies will be able to effectively or fully monetize the "personalized media" opportunity. Without sophisticated and rapid rights and royalties clearing processes, producers as well as broadcasters will extract only suboptimal yields from any particular content asset, rather than maximizing the return on content creation investment.

Legacy IP systems were not designed to manage complex, personalized products and service bundles and new rights-selling models. Hindered by processing inefficiency, outdated data management and siloed operations, many organizations struggle to adapt, and find change costly

and error-prone. Technologies like blockchain can streamline rights clearance and provide greater transparency (see sidebar, "SACEM uses blockchain technology for digital rights tracking"). Blockchain supports more effective, flexible and secure monetization and helps to ensure that the right people get paid across the media ecosystem.

Cognitive strategies for reducing costs

Cognitive solutions can also help reduce costs as part of a broader Digital Reinvention. Some applications of enhanced content production, targeted real-time distribution or live feed selection may not be possible or economically feasible using human-based processes alone. But cognitive tools can help to enrich content assets to enhance discoverability and monetization. By automating content tagging, videos can be more easily searched, navigated and tailored at scale, supporting personalized content distribution and improving the efficiency of content production.

Cognitive tools can also help in creating highlight packages, interpreting video and audio content and automating the identification of key moments of interest. Applied at major events like the Masters, Wimbledon and the US Open, such tools help streamline the editing process and support customization at scale to better serve individual fan interests.

In the extreme, cognitive solutions coupled with advanced video and audio interpretation and natural language processing can not only save time and money, but can also create or package content that would be impossible to produce manually because of the sheer volume of content, the economics involved or the speed of processing required. At their best, these techniques and technologies also help producers create moments of significance that might not otherwise emerge from the raw footage.

SACEM uses blockchain technology for digital rights tracking[9]

The business of music must be able to keep pace with the changes in the consumption of music. In this context, enforcing digital rights has emerged as a top challenge. Charged with that mission in France, the Society of Authors, Composers and Publishers of Music (SACEM), recognized that effectively tracking rights data from a flood of digital transactions and new channels required a whole new approach. Together with the organizations the American Society of Composers, Authors and Publishers (ASCAP) and PRS for Music, SACEM is developing a prototype of a new shared system of managing authoritative music copyright information.

The blockchain-based digital rights system can tackle the long-standing problem of conflicts on ownership, digital rights and royalties issues, and ensure that creators of music are rewarded efficiently for their work. In addition, cognitive technology can be used to look deeper into the flood of digital music transactions to find and harvest untapped royalty opportunities.

60% of media and entertainment executives believe the key hindrance to implementing cognitive solutions is a lack of skilled resources and technological expertise.[10]

Business model reinvention

As media revenues shift further from traditional broadcast to digital platforms and models — with more advanced delivery, targeting and yield optimization capabilities — companies must develop the new tools, processes and skills necessary to fully leverage the vast quantities of data available to fully engage and monetize audiences and content.

Acquiring these new capabilities may require a substantial reorganization of existing processes structures and people. More profoundly, in order to maximize investment in content and customer experience, media companies need to reinvent business models, and some of them may need to radically transform or eradicate their non-core processes to improve both efficiency and effectiveness and to release capital for investment in content and competitively differentiating capabilities.

In an environment that is in a severe state of flux, the ultimate winners may be either new entrants that move and scale the fastest or traditional major incumbents that are willing to adapt and change. Successful companies will need to disrupt their own business models, implement the cognitive and personalized paradigm, change their own bundle for distribution, reinvent their production factory, offload non-core processes and use the released capital to secure new footholds in a changing strategic landscape and an altering industry hegemony.

Looking ahead

As media companies look to the future, those that apply data to optimize revenues and costs and strip out non-core activities will free up funds to reinvest in content and enabling technologies, driving further growth and success. Emerging technologies like cognitive solutions and blockchain will play a key role in that future. Industry leaders will be those who can institutionalize such capabilities as part of their Digital Reinvention efforts and focus their companies on investing in great content and delivering superior customer experience.

Ready or not?

Cognitive systems are one of several digital technologies that continue to alter how people and businesses interact. These forces create unprecedented levels of industry dislocation and can holistically change business economics — for the better. Media and entertainment organizations should embrace these changes and deploy cognitive solutions as part of their Digital Reinvention strategy. Those companies that can implement orchestrated and integrated change based on cognitive capabilities will operate with new focus, new expertise and new ways of working that will better position them for success.

The following questions can help media and entertainment companies prioritize the actions necessary to prepare for the future:

- What opportunities exist in your company to create more engaging and personalized experiences for your audiences and individual customers?
- How do you deliver the Zeitgeist in the moment, all the time while managing capacity and peak loads to fulfil customer expectations with respect to quality and reliable experiences?
- How do you enable your backend systems to support the rapid monetization of newly personalized content channels and automated production of content assets?
- What actions have you taken so that your people skills, organizational design and investment priorities and processes are aligned with the goals of maximizing content investment and return while excelling in customer experience?
- How long can you afford to wait to address these strategic issues? Will the competitive environment allow you to wait one, two or five years? And how do you plan to react as the market shifts and hegemonies realign?

For more information

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Contributors

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Study approach and methodology

For the consumer survey, we gained insights from nearly 21,000 consumers in the following 42 countries: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Czech Republic, Denmark, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Ireland, Italy, Japan, Kenya, Mexico, Netherlands, Nigeria, Norwy, Pakistan, Philippines, Poland, Portugal, Romania, Russia, Saudi Arabia, Slovakia, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, Turkey, the United Arab Emirates, the United Kingdom and the United States. For the executive survey, we gained insights from 500 media and entertainment executives from around, surveying them to explore the opportunities for cognitive computing.

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