

A new day in the world of content

Your cognitive future in the media and entertainment industry

Executive Report

Media and Entertainment and Watson

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A renaissance in media and entertainment

For media and entertainment (M&E) companies, cognitive computing has arrived, and its potential to revolutionize the industry is enormous. With the power to unleash a new era of innovation and growth, cognitive systems are already helping M&E companies better understand audiences, refine advertising activities and improve service for customers, all of which aid in further enhancing the customer experience. Our research indicates that M&E executives are poised to embrace this groundbreaking technology and invest in cognitive capabilities to spark a renaissance in media and entertainment.

Executive summary

In the world of media and entertainment (M&E), there is often talk of “the next big thing.” Today, many of these conversations are broadening, as cognitive computing is touted by some as revolutionary for media, entertainment and, indeed, society in general.

For M&E companies, the timing for an industry game changer couldn’t be better. The industry is coping with upheaval triggered by varied technological, economic and societal influences. Empowered consumers living in an increasingly digital world are expecting and demanding more from an industry that is facing rapid adoption of connected devices and increasing numbers of apps, which are influencing how users consume media. Consumers today have far more content from which to choose, and this content is available any time and in many forms – often for free – through many more delivery options and devices.

In this new world, social media and social viewing are becoming key influencers for consumer decisions. In addition, the M&E industry has to contend with the growing complexity associated with distributing content across multiple platforms, while also facing a world where ecosystems are replacing value chains. And video sits at the heart of all of this, as it increasingly becomes a preferred mode to communicate, collaborate and learn.

86%

of M&E executives familiar with cognitive computing believe it will play **a disruptive role** in the industry.

92%

of M&E executives familiar with cognitive computing believe it will play **an important role** in the **future of their business**.

82%

of M&E executives familiar with cognitive computing intend to **invest in cognitive** capabilities.

At the same time, M&E companies are coping with exponential growth in content and data about customers, interactions and transactions – data brimming with latent insights that could potentially reveal new avenues for revenue. Unfortunately, most companies still struggle to unlock the full value of the data at their disposal.

To thrive amid the chaos of change, M&E industry leaders must be smarter in how they approach data. Advances in cognitive computing can help bridge the gap between data quantity and data insights. Cognitive-based systems can build knowledge, understand natural language and provide confidence-weighted responses. And these machine learning systems can quickly locate the proverbial needle in a haystack, identifying new patterns and insights.

Seeking answers on how the industry can benefit from cognitive solutions, we conducted extensive research, including a survey of 500 M&E executives across the globe. (For more information on the research, see the “Study approach and methodology” section.) Our research reveals that cognitive solutions are already helping some M&E companies blaze new territory.

In this report, we examine current and future applications for the M&E industry and provide recommendations for those seeking a cognitive journey. We also offer insights from M&E executives who understand how cognitive capabilities can help push the current boundaries of innovation and growth. These leaders recognize the potential to transform media and entertainment – and are set to exploit cognitive capabilities to do so.

Conquering industry forces

The M&E industry is experiencing unprecedented disruption. From heightened customer expectations and rapid adoption of connected devices to continued competition from social media and Internet video streaming providers, a number of powerful forces are shaping – and shifting – the M&E landscape.

Heightening customer expectations: The combination of growth in smarter devices and content available via the Internet has created more demanding consumers. Consumers expect an entertainment experience on the device they choose, at the time they choose, wherever they happen to be – in a world where most content is free and customer intimacy is a must. However, many M&E companies are struggling to accommodate their audiences. To better serve and delight subscribers, M&E companies need to uncover deeper insights from a variety of structured and unstructured data.

Influence of social media and social viewing: The reach of social platforms is too big to ignore today, as audiences increasingly spend time on social media. Consumers now have unprecedented power to swing public opinion and undermine investments as they comment via social media. M&E companies increasingly use social media to listen and engage with them. But monitoring social media, categorizing it and drawing logical conclusions is unlike any quantitative analysis previously encountered. M&E companies are challenged to cope with the sheer volume and immense diversity of sources.

What is cognitive computing?

Cognitive computing solutions offer various capabilities, including...

- Learning and building knowledge from various structured and unstructured sources of information
- Understanding natural language and interacting more naturally with humans
- Capturing the expertise of top performers and accelerating the development of expertise in others
- Enhancing the cognitive processes of professionals to help improve decision making
- Elevating the quality and consistency of decision making across an organization.

Rapid adoption of connected devices and new distribution platforms: We are living in a multi-screen and multi-channel world. It is no surprise that mobile screens, with their always-on access and portability, are rapidly becoming the first choice for digital content viewing.¹ Multiscreen could be viewed as the ultimate form of media convergence since content is no longer attached to a device or platform. Marketers, developers and M&E executives need to shift their understanding of how people interact with all these screens and how those interactions relate to their use of apps.

Exponential growth in content and data: More devices, channels, content, personalization, and customer interactions and transactions have resulted in exponential growth in data. Data is the fundamental component of the industry, and M&E organizations need to fully understand how audiences engage with their content and ads – across devices, dayparts, markets, etc. They must be able to analyze all this data to understand audience segments and markets. But the sheer volume and immense diversity of sources are intimidating. Advanced technologies are required to achieve a real-time, holistic view of what is actually happening within the business and determine how to respond to consumer behavior and preferences.

Increasing impact of video: Video is rapidly becoming one of the most dominant forms of content on the Internet.² That is why content service providers are using video as a key differentiator for their triple and quad-play offers. Many media companies are moving to over-the-top (OTT) and “TV Everywhere” offerings. They see opportunities to generate new revenues, for instance by integrating live streaming/video-on-demand platforms with analytics, building content video-image tagging or creating the capability for video ad insertion. M&E companies understand the rising value of video. However, they have difficulty

building delivery mechanisms through multiple channels for cloud-based video services, which they could monetize and leverage to stand out in a sea of offerings from Internet video streaming providers and the like.

Value chain migration: Many M&E companies see competitors multiplying while their own growth hits a ceiling, as start-ups and Internet behemoths alike invade and disrupt the value chain. As a consequence, value chain functions have begun to re-form in new ways, resulting in ecosystems replacing traditional value chains. M&E companies are searching for new avenues for revenue, such as through data-driven video, providing more personalized offerings and experiences to their audiences, and making their content and audiences valuable to brands for ad-supported business models. The ability to extract deep insights from their enormous amount of data is crucial to the success of these new business models.

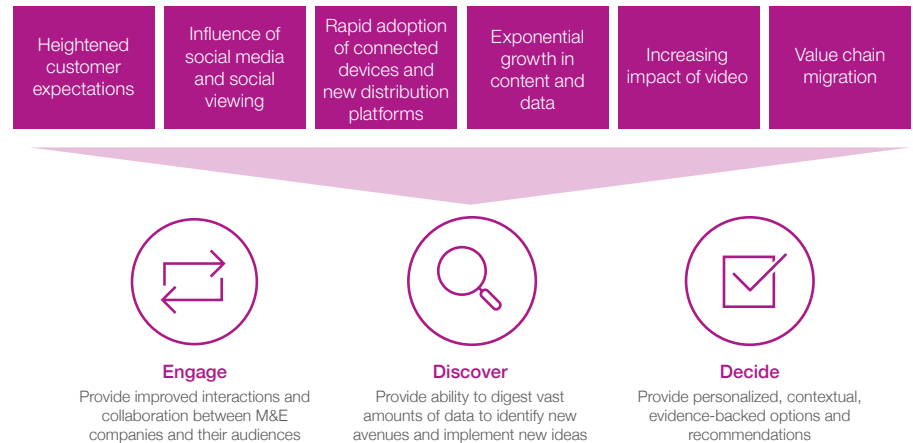
From disruption to focus

It is clear that M&E companies are operating amid turmoil. Although the forces challenging the industry appear varied in nature, we identified key themes among them relating to customer communication and engagement, insights and discovery, and recommendations and decision making.

To rise above the disruption, we suggest M&E industry leaders focus on improving their capabilities to *engage*, *discover* and *decide* (see Figure 1). Increased engagement between M&E companies and their audiences can improve communication and collaboration, which in turn can aid development of more tailored and effective services and better customer experiences. And new discovery capabilities that unearth insights buried in data can facilitate the creation of new products and services, as well as innovations in content delivery and identification of new audience microsegments. Finally, more accurate and timely decision capabilities can lead to more personalized and contextual customer recommendations, more targeted advertising and better decision making in general.

Figure 1

To combat forces challenging the industry, M&E companies need to improve their capabilities to engage, discover and decide



Source: IBM Institute for Business Value.

Engage: Today's empowered consumers seek personalized, convenient and consistent experiences across multiple channels and devices. However, only around 30 percent of M&E industry executives surveyed said they are effective in leveraging customer profile data to contextualize customer experiences or provide personalized service and proactive recommendations. And only 20 percent believe they are effective in creating a consistent customer experience across all channels and touch points.

Discover: New disruptive media players are forcing established M&E companies to pursue innovative products, services and business models. However, only 30 percent of M&E executives surveyed prioritize the creation of new hit products and services, and only 29 percent strive to anticipate and understand sudden shifts in moods and markets. These low percentages could be because many M&E organizations' innovation pursuits and discovery activities are limited by rigid or inadequate analytics platforms or insufficient skills.

Decide: Only around a third (31 percent) of the M&E executives surveyed are effective in making strategic decisions in areas such as acquisitions and divestitures. They expressed even less confidence in their organizations' decisions relating to new production, spending on content rights/royalties and advertising options. A potential reason could be that many M&E organizations are forced to make decisions based on incomplete insights because they lack the tools necessary to optimize the data available to them.



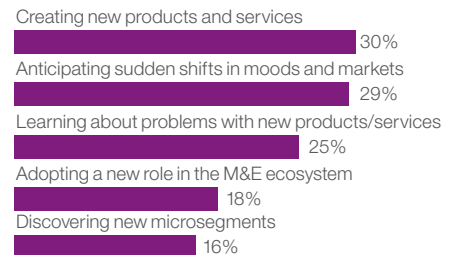
Engage

Percentage of M&E executives that indicate their organizations are effective in delivering customer service (by area of service)



Discover

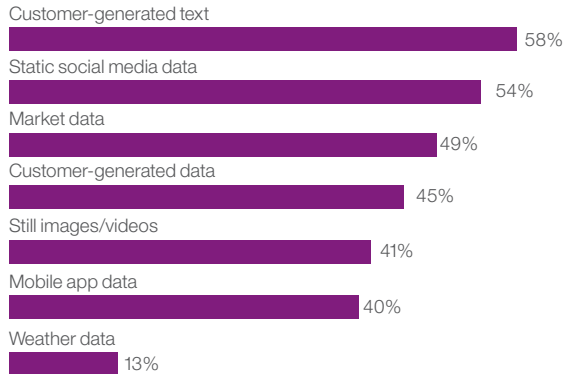
Percentage of M&E executives pursuing activities for new opportunities in specific areas



Decide

Only one third of M&E executives are confident in their organizations' abilities to make effective strategic business decisions



Figure 2*M&E organizations collect a variety of external data**Source: IBM Institute for Business Value.*

Cognitive opportunity in media and entertainment

As both the number of devices that can support digital media and Internet access speeds have increased, so too has consumers' ability to access their chosen media content at virtually anytime, anywhere. As a result, data from media consumption is rapidly growing in volume, variety and complexity. This digital data may be the most valuable asset the industry has.

M&E companies need to take advantage of all the data they can access, both inside and outside the organization (see Figure 2). However, traditional analytics solutions cannot fully exploit the value of big data. They are unable to adapt to new problem domains or handle ambiguity and are only suitable for structured and unstructured data with known, defined semantics. Without new capabilities, the data paradox of having too much data and too little insight will continue.

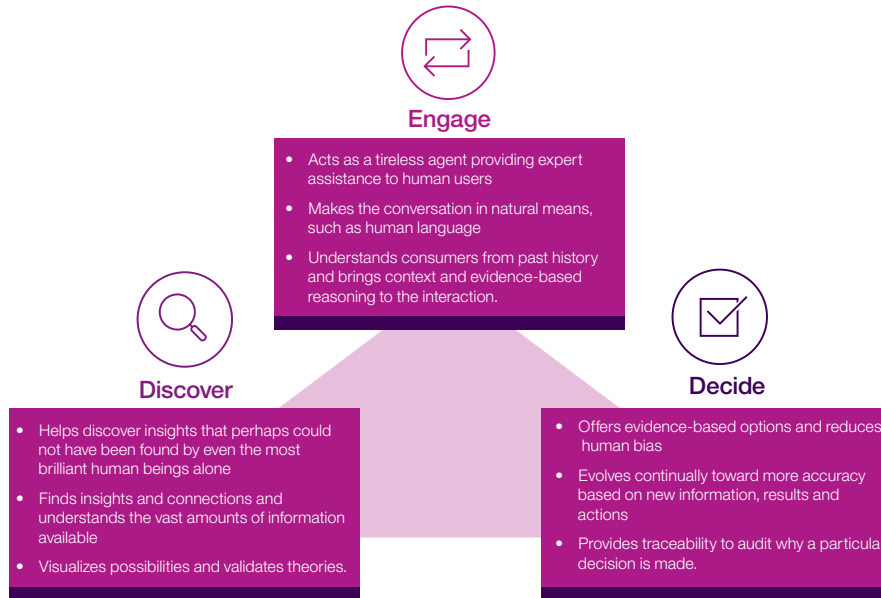
How can hidden insights that reside in all this data be fully harnessed for discovery, insight, decision support and dialogue? The answer is cognitive computing. Cognitive systems take analytics to the next level by applying machine learning algorithms and natural language processing to make sense of vast quantities of data, over 80 percent of which is unstructured.³ They can help organizations leverage building blocks such as tone analysis, visual recognition, dialog capabilities, personality insights and sentiment analysis to help drive competitive advantage.

Among industry executives familiar with cognitive computing, 86 percent indicate it will play a disruptive role in the industry, 92 percent believe it will be important for the future of their business and 82 percent intend to invest in cognitive capabilities. Key areas in which they see potential include audience measurement and customer insight, content management and audience engagement (see Figure 3).

How specifically can M&E companies leverage cognitive computing to address issues plaguing the industry? This new computing paradigm has three capability areas that specifically address the industry's need to improve engagement, discovery and decision making (see Figure 4).⁴

Figure 4

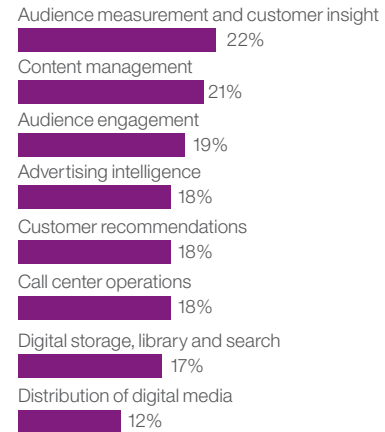
There are three emerging capability areas for cognitive computing



Source: IBM Institute for Business Value.

Figure 3

M&E executives identified a number of potential uses for cognitive computing



Source: IBM Institute for Business Value.



Engage

Cognitive capabilities help enhance call center interactions

Cognitive systems can help improve call center customer engagement for M&E services organizations and communication service providers (CSPs) – such as cable companies – in a number of ways. For example, a Tokyo-based CSP wanted to help call center agents previously respond more rapidly and reliably to customer inquiries. The agents had to search a database of more than 5,000 responses to frequently asked questions and approximately 100 customer service cases, making it difficult to quickly provide accurate responses.

The company implemented a cognitive solution to automatically provide suitable responses to questions posed in natural language. The solution offers relevant and accurate automated responses to unstructured user inquiries. Call center employees now can retrieve the right responses to customer inquiries quickly, improving both call center productivity and customer satisfaction. In addition, the employee turnover rate has decreased, resulting in cost savings.

Engagement capabilities

Cognitive systems can fundamentally change the way humans and systems interact and significantly extend the capabilities of humans by leveraging their ability to provide expert assistance. These systems provide advice by developing deep domain insights and bringing this information to people in a timely, natural and usable way. Here, cognitive systems play the role of an assistant – albeit one who does not require sleep, can consume vast amounts of structured and unstructured information, can reconcile ambiguous and even self-contradictory data, and can learn.

Because they are able to engage in dialogue with humans, these systems can help M&E organizations, as well as cable companies, improve customer service by providing relevant and accurate automated responses to questions posed in natural language (see sidebar, *Cognitive capabilities help enhance call center interactions*). They also can assess customers based on their history, audience profile, content trafficking and social listening patterns, as well as bring context- and evidence-based reasoning to the interaction, enabling more customized and self-service options.

Future cognitive systems likely will have free-form dialogue capabilities, which could power transformative service initiatives.⁵ For example, customers could engage in dialogue with a virtual customer service representative that could answer questions in natural language. Cognitive capabilities could also include linguistic analysis to detect and interpret emotional, social and language cues from text, which could help identify the right actions to address customer issues. Or cognitive TV could provide an intelligent next-generation viewing experience using voice controlled TV commands enabled by a personalized content recommendation engine.



Discovery capabilities

Cognitive systems can help users discover insights that might otherwise not be found by even the most brilliant human beings. Discovery involves finding insights, patterns and connections and understanding the vast amounts of information available around the world.

Cognitive capabilities can help generate deep aggregated personality profiles of individuals, audiences, prospects and leads by analyzing social media activity, automatically and reliably. This can be used to personalize campaign offers, find look-alike prospects and generate microsegments based on psycholinguistic profiles, online trend data, fan insights, web browsing habits, online streaming habits and more (see sidebar, *Audiense embraces cognitive computing to discover personality traits*). In addition, cognitive systems can reveal detailed information relating to customer preferences that can help improve products, services and business models.

In the future, cognitive solutions could help marketing organizations better target campaigns by identifying new microsegmented customer profiles based on attitudinal and behavioral insights derived from unstructured customer data. Future cognitive solutions could also enable more effective and timely matching of customers to offerings by rapidly analyzing historical customer data across all relevant areas.

Discover

Audiense embraces cognitive computing to discover personality traits⁶

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. For example, they could identify audiences based on whether they are "more likely to propagate information," "more likely to redeem a coupon" or "more likely to respond to unsolicited advertising." With 47 potentially analyzed traits, needs and values, the platform enables deep levels of insight – and competitive advantage.



Decide

Leveraging the power of cognitive capabilities in precision-based marketing⁷

Earshot is a Chicago-based social media marketing company specializing in real-time marketing. As part of its precision-based platform, the company offers a tool called Decibel Level, which assigns a relevancy score to any social media post it screens. The score is derived based on a number of different factors, from posting location and time to keyword and logo usage.

Earshot is now leveraging cognitive capabilities to further increase Decibel Level's real-time relevancy metrics through variables such as personality traits, complex image recognition and advanced sentiment analysis. Clients using the Earshot platform can now control the weighting of Decibel Level by adjusting the levels of importance of these variables and others, including location, keywords or even weather. By leveraging the power of cognitive, Earshot offers clients the power to identify, prioritize and properly message the right customers at the right time.

Decision capabilities

Cognitive systems aid in decision making and reduce human bias by offering evidence-based options. They continually evolve based on new information, results and actions. Current cognitive systems perform more as advisors by suggesting a set of options to human users, who ultimately make the final decisions.

Cognitive systems can help M&E industry professionals make more informed and timely decisions. For instance, cognitive capabilities could be useful when evaluating spending options (with regard to content, rights, royalties, etc.) or making strategic decisions in areas like acquisitions and divestitures. Applying cognitive capabilities to empower consumer personalization and content recommendation enables positioning and the ability to provide differentiated content-centric offerings. In advertising placement, cognitive analytics can generate deeper insights into buying behaviors of customers and recommend actions for precision-based marketing and better commercial offerings (see sidebar, *Leveraging the power of cognitive capabilities in precision-based marketing*). Advertising intelligence also enables companies to understand the unique buying journey of their corporate customers and to better personalize B2B marketing operations.

In the future, cognitive systems could take a more customer-centric approach to marketing. By employing cognitive capabilities to truly consider consumers' emotional and physical states – which is now largely possible thanks to Internet of Things, beacons and mobility – M&E companies could potentially identify how consumers emotionally connect to products, services and content and then adapt messaging to fulfill specific needs.

The way forward

Despite the enthusiasm for cognitive, organizations should realize there is often a steep learning curve. In terms of system implementation and user interaction, cognitive systems are fundamentally different than traditional programmatic systems.⁸ M&E companies can learn from other pioneering organizations that have already implemented cognitive by following three key sets of recommendations (see Figure 5).

Figure 5
Organizations with cognitive computing experience have identified three critical action areas for success



Source: IBM Institute for Business Value.

1. Define the value

Early planning helps ensure the greatest return on investment of resources. Defining the value of cognitive to your organization is critical and includes several steps:

Find the right opportunity – Cognitive solutions are well suited to a defined set of challenges. M&E companies need to analyze the specific problem to determine if cognitive capabilities are appropriate:

- Does the challenge involve a process or function that today takes humans, such as call center agents, an inordinate amount of time to seek timely answers and insights from various information sources using potentially various techniques in making a decision or thinking through a problem?
- Is there a need for users to interact with the system in natural language (such as customer inquiries relating to product or service issues)?
- Does it involve a process or function that requires providing transparency and supporting evidence for ranked responses to questions and queries (such as content recommendations)?

Define the value proposition and chart a course for cognitive – Identify both the differentiated value provided by cognitive computing and the business value up front, from potential customer service improvements to cost savings. In addition, establish a cognitive computing vision and roadmap with executive-level support. Continuously communicate roadmap progress with appropriate executives and stakeholders, such as marketing directors and media buyers.

Be realistic about value realization – Proven cognitive applications can many times lead to prompt value realization; however, an evolutionary approach should be taken when applying cognitive computing in innovative areas. The reality that these systems improve and can lead to increasing value over time must be understood, communicated to key stakeholders and accounted for in benefits realization plans, where applicable. In addition, specify benefits for both the M&E company and its customers. Also, consider using a phased rollout or deploying the solution to a subset of trusted users who understand the technology's evolutionary nature.

2. Prepare the foundation

Prepare the foundation for a successful cognitive computing solution implementation by focusing on the following:

Invest in human talent – Cognitive solutions are “trained,” not programmed, as they “learn” with interactions, results and new pieces of information and help organizations scale expertise. Often referred to as supervised learning, this labor-intensive training process requires the commitment of human subject matter experts. A cognitive implementation also requires expertise in natural language processing, machine learning, database administration, systems implementation and integration, interface design and change management.

Build and help ensure a quality corpus – Cognitive systems are only as good as their data. Invest adequate time in selecting data to be included in the corpus, which might include structured (customer account information, for example) and unstructured data (such as video) from multiple databases and other data sources like social media – and even real-time data feeds. Data will likely emanate from new and untapped sources as well, such as blogs and call center recordings. In addition, invest in records digitization to secure the future of your organization’s corpus, focusing on both historical and new documentation.

Consider policy, process requirements and impacts – Assess any potential impact on processes and how people work. Because users interact with cognitive systems in entirely different ways than traditional input/output systems, processes and job roles could be impacted. In addition, consider if any data policy changes are necessary. Obtaining necessary data could test the boundaries of existing data-sharing policies and might require new or modifications to existing policies, regulations and agreements.

3. Manage the change

Compared to traditional programmable systems, cognitive systems are a whole new ball game. As such, change management is more critical than ever.

Ensure executive involvement in the cognitive journey – Executive involvement should begin with active participation in defining the cognitive vision and roadmap and continue throughout the journey. This includes executive participation in regular reviews of incremental progress and value realization.

Communicate the cognitive vision at all levels – Because cognitive computing is new and not completely understood by most, regular communication at all levels (including business managers, IT staff and call center agents) is critical. Address any fears, uncertainties and doubts head on, and leverage executive sponsors to reinforce the value of cognitive to your organization's mission.

Continue to raise the cognitive IQ of the organization – Education is critical in assuring cognitive is understood and adopted. Of particular importance is managing expectations related to system-generated recommendations. Cognitive systems are probabilistic and not deterministic. While accuracy rates will improve as a system learns over time, the rate will never reach 100 percent. Educate stakeholders about accuracy rates, and conduct regular reviews on incremental improvements.

Ready or not? Ask yourself these questions

- What opportunities exist to create more engaging and personalized experiences for your audiences, individual customers and the wider media and entertainment ecosystem?
- What media and entertainment data aren't you leveraging that if converted to knowledge would allow you to meet key objectives and business requirements?
- What is the cost to your organization and the wider media and entertainment ecosystem associated with making non-evidence-based decisions or not having the full array of possible options to consider when actions are being taken?
- What benefit would you gain in being able to detect hidden patterns locked away in your data? How would this accelerate business model innovation, product development, advertising effectiveness, customer services and the like?
- What is your organizational expertise skill gap in cognitive computing? What would change if you could equip every employee to be as effective as the leading expert in that position or field?

For more information

To learn more about this IBM Institute for Business Value study, please contact us at iibv@us.ibm.com. Follow @IBMIBV on Twitter, and for a full catalog of our research or to subscribe to our monthly newsletter, visit: ibm.com/iibv.

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Study approach and methodology

In the second half of 2016, we conducted extensive research to dive deeper into select industries and explore opportunities for cognitive computing. Through a survey conducted by Oxford Economics, IBM gained insights from more than 6,000 executives from around the world representing a variety of industries, including 500 media and entertainment respondents. The study also included interviews with subject matter experts across IBM divisions, as well as supplemental desk research.

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