From data deluge to intelligent insights

Adopting cognitive computing to unlock value for marketing and sales

How IBM iX can help

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How Watson Customer Engagement can help

Watson Customer Engagement provides the end-to-end cognitive engagement platform necessary to help marketing, commerce and supply chain professionals unify their business around customers and deliver one journey, one experience and complete engagement across all channels and touchpoints. Differentiated by the unrivaled power of Watson, we illuminate opportunities across the entire value chain and provide professionals with embedded cognitive features that fit seamlessly into the way they work. Professionals now have a trusted advisor helping them make better decisions and improve productivity. For more information, visit **ibm.com**/Watson/customer-engagement.

Making the leap to cognitive computing

Cognitive computing is the game-changing technology that could be the answer to marketers' and sellers' prayers. It could also be one of the most disruptive forces their functions face. Armed with insights about customers at every touchpoint, professionals using cognitive computing are able to create and deliver the personalized, intuitive experiences customers expect. But are Chief Marketing Officers (CMOs) and heads of sales ready to make the cognitive leap? Our study explores the extent to which these executives are embracing cognitive technologies today, the challenges they face and the lessons they can learn from outperforming companies that are already applying cognitive solutions and driving a cognitive-enabled vision for their business.

The next generation for marketing and sales

Like thirsty sailors in a sea of salt water, many marketing and sales professionals find themselves drowning in data that fails to deliver the value or the insights they need to serve their customers well. A wide variety of data analytics methods and tools exist today to help, but few offer as much promise as cognitive technologies.

Cognitive systems understand unstructured information the same way humans do. They ingest vast amounts of data far faster than traditional platforms, and can reason, grasp underlying concepts and form hypotheses. With each data point and interaction, cognitive systems continuously learn, deepening their expertise and refining nuances. They can predict outcomes and offer recommendations. And with the ability to see, talk and hear, cognitive systems can interact with humans in a natural way. This isn't a view of the future — this is happening today.

Given cognitive computing's enormous potential to reshape how marketing and sales teams function, the IBM Institute for Business Value wanted to explore the extent to which Chief Marketing Officers (CMOs) and heads of sales are prepared to embrace cognitive. To find out, we surveyed 525 CMOs and 389 heads of sales across 18 industries as part of a comprehensive cognitive computing survey of more than 6,000 C-suite and heads of functions worldwide.[1]

In theory, at least, marketing and sales executives see cognitive/AI as a revolutionary technology that they can't afford to ignore. Nearly two-thirds (64 percent) of CMOs and sales leaders assert their industries are ready to adopt cognitive solutions within the next three years. But practically speaking, many say they aren't sure their organizations are set up to make a successful transition.

The majority of CMOs and heads of sales in our survey report that their companies are still in the early stages of consideration and evaluation. But the longer they linger there, the greater their risk of falling further behind those companies that are already implementing and operating cognitive today. Notably, 61 percent of all marketing and sales respondents say cognitive computing will be a disruptive force in their industries. For some, that spells trouble; for others, it's an opportunity.

61% of surveyed marketing and sales executives say **cognitive computing will be a disruptive force** in their industries

91% of surveyed outperforming companies agree that **cognitive computing is important** for their organizations' futures

And yet only 24% of survey respondents say they **have a cognitive strategy** today

Marketing and sales executives' aspirations for cognitive computing

Much of what is fueling this push toward cognitive computing is the clear line marketers and sellers can draw between the pain points they have historically grappled with and the potential benefits cognitive technologies can deliver. There are a host of challenges marketing and sales executives expect cognitive to address. For CMOs, cognitive's real advantage lies in two key areas: Improved customer experience and financial results (increased yields, as well as the ability to confidently identify marketing ROI). For sales leaders, it's about finally achieving a 360-degree understanding of customers that can help predict customer needs and improve prospecting, lead strategy and customer service and experience (see Figure 1).

Figure 1
Wish lists for marketing and sales executives: The top five challenges cognitive computing will best address

Marketing challenges	Sales challenges
1. Inability to provide leading digital experiences for target audience	1. Inability to fully understand/know the customer
2. Inability to determine ROI of marketing efforts	2. Inability to successfully prospect new markets and targets
3. Poor marketing program yields	3. Inability to effectively manage customer/lead contact strategy
4. Inability to deliver an integrated, personalized customer experience	4. Inability to anticipate individual customer needs
5. Inability to provide real-time support for customers	5. Inability to deliver an integrated, seamless customer experience across all channels

Source: IBM Institute for Business Value, Marketing n = 525, Sales n = 387.

The results are similar for the other side of the coin — the value drivers for cognitive solutions. From a list of ten possible value drivers, CMOs and heads of sales agreed on the top five. Both selected "customer satisfaction" as number one. The remaining four top picks jockey for priority between marketing and sales (see Figure 2).

Interestingly, despite the buzz about companies implementing cognitive solutions to reduce headcounts, we found survey respondents to be far less interested in that objective. This supports our assertion that the real value of cognitive isn't to replace staff, but rather to extend employees' knowledge and capabilities so they can make informed business decisions and execute with speed and accuracy — far beyond anything they could achieve with traditional methods (see sidebar, "Using cognitive computing to accelerate problem resolution").

Using cognitive computing to accelerate problem resolution[2]

A large global digital technology company wanted to better understand how people relate to digital visualizations. It also wanted to look at other customer communications to gain a comprehensive view of what its customer base was thinking, including their feelings, opinions and sensibilities. The company launched a content analytics solution to analyze customer sentiment on social media and voice of the customer data captured by the company's call center. This complex analysis has enabled the company to quickly identify problems and devise solutions. As a result, the company expects to see a major increase in its operating profits.

Figure 2

The top five value drivers for cognitive solutions: What CMOs and heads of sales expect cognitive computing to deliver

Value drivers for marketing	Value drivers for sales
1 **Customer satisfaction**	1 **Customer satisfaction**
2 Revenue growth from larger orders (tie)	2 Customer acquisition cost reduction
2 Customer retention improvement (tie)	3 Customer retention improvement
4 Revenue growth from shorter sales cycle	4 Revenue growth from larger orders
5 Customer acquisition cost reduction	5 Revenue growth from shorter sales cycle

Source: IBM Institute for Business Value, Marketing n = 482, Sales n = 348.
Note: Multiple instances of the same ranking number represent a tie.
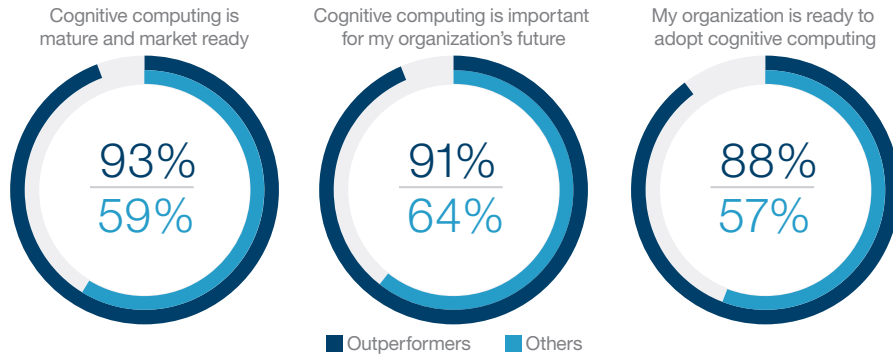
Outperformers: Ready to rock and roll

Marketing and sales leaders recognize cognitive as a path that leads to a new era for their businesses. Yet, despite this understanding, and a strong dose of optimism, our data indicate the majority of respondents feel their organizations lack a number of the foundational capabilities needed to successfully implement a cognitive solution.

We did, however, uncover a small subset of marketing and sales executives — just 13 percent of our sample — who responded quite differently to the readiness indicators in our survey. We refer to this group as the *Outperformers*, as they reported their companies significantly outperformed their competition for the past three years in revenue growth, profitability, or efficiency and effectiveness in achieving objectives.

Outperformers are eager cognitive proponents, and they come from companies that are far more likely to be early cognitive adopters. Outperformers believe cognitive computing is market-ready now, and they are fully bought in to the idea that cognitive will play an important role in their organizations' futures. Indeed, the vast majority of Outperformers claim their companies are prepared to adopt cognitive computing today (see Figure 3).

Figure 3

Confidence in cognitive solutions: Outperformers want in, while others are more skeptical
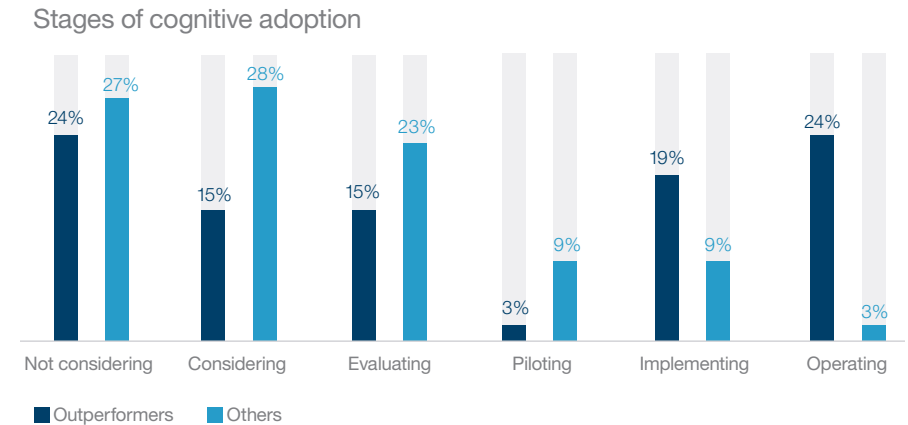

Cognitive computing is
mature and market ready

93%
59%

Cognitive computing is important
for my organization's future

91%
64%

My organization is ready to
adopt cognitive computing

88%
57%

■ Outperformers ■ Others

Source: IBM Institute for Business Value, n = 914.

Unquestionably, most Outperformers are further along in their cognitive journeys than other companies. About a quarter of Outperformers report cognitive is already operational at their organizations. Only a tiny fraction of other respondents, a mere 3 percent, claim the same. Most other respondents are in the earlier stages of consideration and evaluation or aren't considering cognitive at this time. There is also a contingent of Outperformers who have no plans for cognitive today, but only 10 percent of Outperformers report that their companies are unlikely to implement cognitive solutions in the future (see Figure 4).

Figure 4

Stages of cognitive adoption: Outperformers are outpacing other companies

Stages of cognitive adoption

	Not considering	Considering	Evaluating	Piloting	Implementing	Operating
Outperformers	24%	15%	15%	3%	19%	24%
Others	27%	28%	23%	9%	9%	3%

■ Outperformers ■ Others

Source: IBM Institute for Business Value, n = 914.

The business case for cognitive computing

Many marketing and sales executives expect their organizations' cognitive spend to increase within the next three years. Today, 63 percent estimate that cognitive accounts for 5 percent or less of their organizations' IT budgets, including 18 percent who say it is zero. Only 5 percent say their cognitive budget will still be zero in three years. By then, 21 percent expect it to grow to 5 – 10 percent. And almost a quarter of Outperformers say it could account for more than 20 percent of IT spend.

Respondents have high expectations that this technology will pay off. Nearly a third say their organizations would need a 10 – 15 percent return to justify their investment, and 26 percent say it could be as much as 15 – 20 percent. More than half expect their organizations to recover their cognitive investment within two to four years.

While these may seem like ambitious goals, it's important that organizations not simply focus on their expectations for better marketing and sales results. Instead, they also need to take into account the efficiencies and cost savings they could potentially gain with cognitive solutions, particularly for sales prospecting and management, as well as media and marketing spend. Additionally, cognitive computing's ability to help companies improve their customer experience should be included in companies' ROI calculations (see sidebar, "Using cognitive technologies to enhance masterful storytelling").

Using cognitive technologies to enhance masterful storytelling[3]

HSN is an interactive multichannel retailer in the United States offering a curated assortment of exclusive products and top brand names. HSN reaches millions of homes on television and features thousands of product videos on its website. The company needs to inspire customers through every channel. With cognitive solutions, it can identify individual customer preferences and retail journeys and provide tailored, timely, compelling messages at every touchpoint. Now its stories reach the right audience, encouraging more viewers to become customers — which is helping to drive business growth.

Using cognitive solutions to improve sales and customer satisfaction[4]

A large U.S. insurer wanted to improve its customers' ability to purchase insurance online. The insurer built a cognitive virtual agent that can engage consumers in a natural language conversation to help them select the coverage that's right for them. This cognitive agent can answer a wide variety of questions while completing a quote and adapt the user experience based on key context variables. As a result, the company has improved quote completion by customers, increased online conversion rates and now offers an overall improved customer experience.

Inhibitors on the horizon

Despite respondents' cognitive aspirations, they report that they are hampered by a number of challenges. CMOs and heads of sales say they lack the technology needed to implement cognitive solutions. Additionally, they don't believe they have enough of the required skills and expertise. Respondents say data governance and data sharing policies could be a barrier, and CMOs, especially, also worry about security and privacy implications.

But sales leaders cite a more elemental concern. They aren't sure they have the executive support for cognitive computing and fear their organizational culture may not be a good fit for a cognitive solution. At first glance, this seems surprising, given that so many have faith in cognitive benefits and anticipate their industries will be adopting cognitive as the new normal.

These findings reveal executives' mixed emotions about the change cognitive represents for their companies. Many say they are feeling overwhelmed by the challenge of adopting yet another new technology and the processes required. However, their concerns may be exaggerated due, in part, to their lack of understanding of what is needed to employ cognitive. Many marketing and sales teams are already in the midst of their own digital transformations. The adoption of cognitive computing can be integrated into their current digital strategy and the marketing and sales tools they are using today, if they have some key capabilities in place (see sidebar, "Using cognitive solutions to improve sales and customer satisfaction").
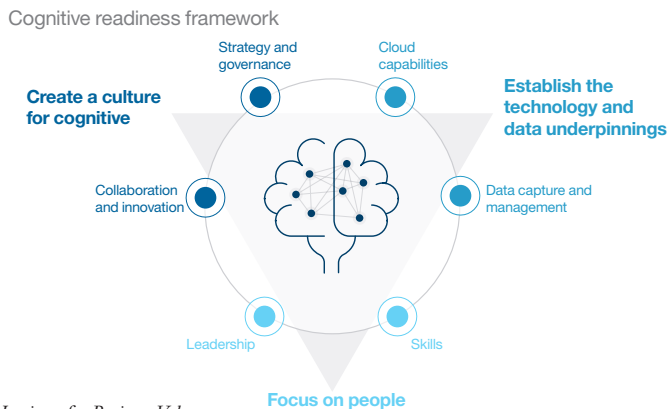
Cognitive readiness

Executives from legacy organizations are right to take the implementation of cognitive solutions seriously; however, they may be surprised to learn that today's cognitive solutions for marketing and sales won't require them to overhaul their businesses if they have already started their digital journeys. In a recent IBM Institute for Business Value study, *Digital Reinvention in action: What to do and how to make it happen*, we explore the digital evolution companies are experiencing as they move from digitization to digital transformation to Digital Reinvention.™ [5] Organizations that are on this path could incorporate the adoption of cognitive as part of their digital vision.

To realize cognitive's full potential for marketing and sales, we have developed a Cognitive Readiness Framework that highlights three foundational areas: technology, people and culture (see Figure 5).

Figure 5

Cognitive Readiness Framework: Moving your cognitive agenda forward

Cognitive readiness framework

Strategy and governance

Cloud capabilities

Create a culture for cognitive

Establish the technology and data underpinnings

Collaboration and innovation

Data capture and management

Leadership

Skills

Focus on people

Source: IBM Institute for Business Value.

Establish the technology and data underpinnings

To integrate cognitive computing, companies will need a cloud solution and an approach for data capture and management.

Figure 6
Cloud-based storage investment: Outperformers are way ahead

Investment in cloud-based storage

72%

76%

52%

32%

Today   Three years

■ Outperformers   ■ Others
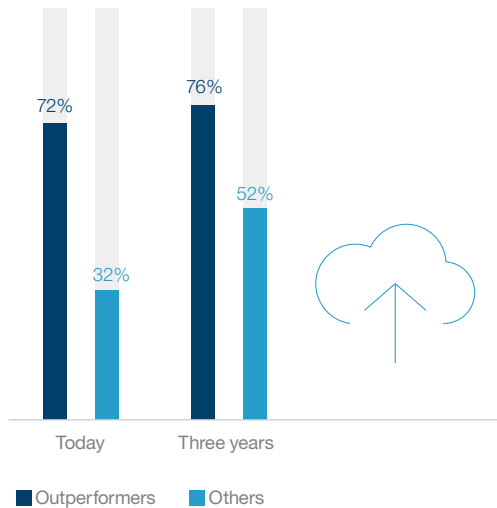
Source: IBM Institute for Business Value, Today n = 914, 3 years n = 864.

Cloud capabilities
Cognitive computing is a cloud-based technology, and having sufficient cloud capabilities will be needed for a cognitive implementation. Outperformers are already investing heavily in cloud-based storage — far more so than others. Other companies expect to increase their investments within the next three years, but Outperformers will continue to outpace their competition (see Figure 6).

Cloud-based solutions allow data storage to be much more modular and scalable to address data access and processing. These attributes are increasingly critical for organizations as they develop their digital ecosystems and adopt digital practices that generate vast quantities of data.

Data capture and management
A cognitive solution will only be as good as the data that feeds it. Since the insights marketers and sellers crave are often hidden in data outside their organizations, it is essential that their cognitive systems have access to multiple types of meaningful data sources, both structured and unstructured (see sidebar, "Using cognitive technologies to reinvent customer experience"). Once again, Outperformers are ahead of the game. They are already more likely than others to capture and analyze a wide variety of external data types (see Figure 7).
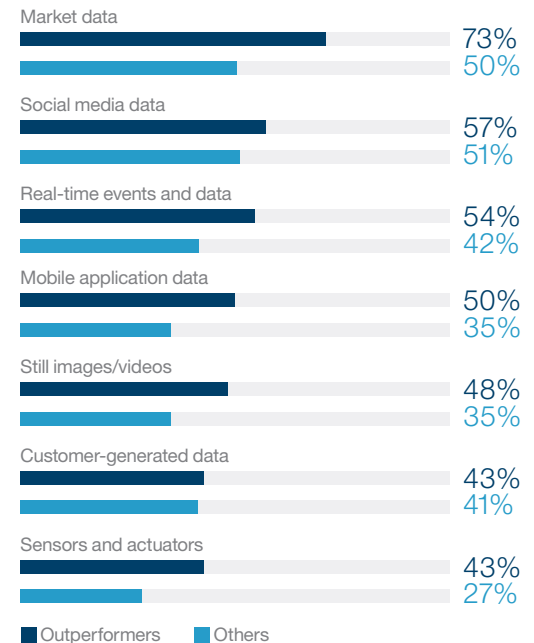
Using cognitive technologies to reinvent customer experience[6]
A global airline is testing a conversational commerce system so that travelers can say goodbye to traditional search engines and travel distribution aggregators. By collecting traveler preferences, trip plans and profile details using natural language interactions, the system generates personalized travel recommendations that are refined through on-going dialogue with the traveler. The system will also leverage insights derived from the analysis of thousands of other traveler interactions, improving the odds that it will make spot-on recommendations.

Managing data — not in silos, but across the enterprise — is also an important factor. Data is an organization's connective tissue. Linking front-office data to back-office production and processes is key to realizing data's full value. Today, 71 percent of Outperformers say their organizations have enterprise-wide data management, compared to only 52 percent of other respondents. Having a consistent approach to data management across the business will make it far easier for companies to apply the power of cognitive systems to reveal relevant insights from disparate data types residing in pockets of their business.

Figure 7
External data collected and analyzed – Outperformers are ahead of the game

Market data
73%
50%

Social media data
57%
51%

Real-time events and data
54%
42%

Mobile application data
50%
35%

Still images/videos
48%
35%

Customer-generated data
43%
41%

Sensors and actuators
43%
27%

■ Outperformers ■ Others

Focus on people

It is important not to underestimate the impact that a new technology can have on employees — from those using these new solutions to the leaders driving the strategy.
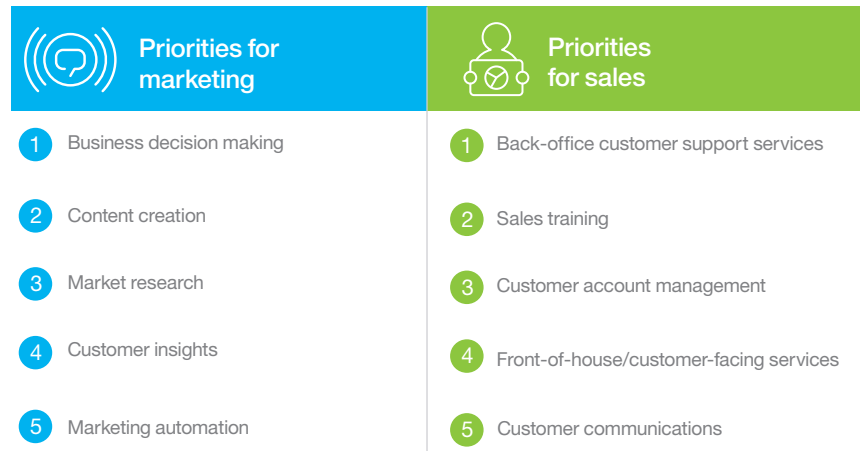
Skills
Almost all Outperformers (93 percent) expect the implementation of cognitive computing to affect their employees' roles and skillsets, and about two-thirds of other respondents agree. One key opportunity is cognitive's ability to expand and deepen employees' expertise across a wide range of capabilities (see Figure 8).

Figure 8
Scaling employees' expertise: Top priorities for CMOs and heads of sales

Top five types of expertise marketing and sales hope to scale with cognitive computing

Priorities for marketing	Priorities for sales
1 Business decision making	1 Back-office customer support services
2 Content creation	2 Sales training
3 Market research	3 Customer account management
4 Customer insights	4 Front-of-house/customer-facing services
5 Marketing automation	5 Customer communications

Source: IBM Institute for Business Value, Marketing n = 241, Sales n = 280.

However, marketing and sales executives see their lack of advanced analytical talent among their teams as a significant barrier for cognitive implementation. This may not pose quite the problem executives fear, since cognitive solutions perform the analytical heavy lifting, enabling marketers and sellers to access insights without needing to have deep analytical skills themselves. What teams do need is the ability to interpret cognitive insights to make actionable decisions.
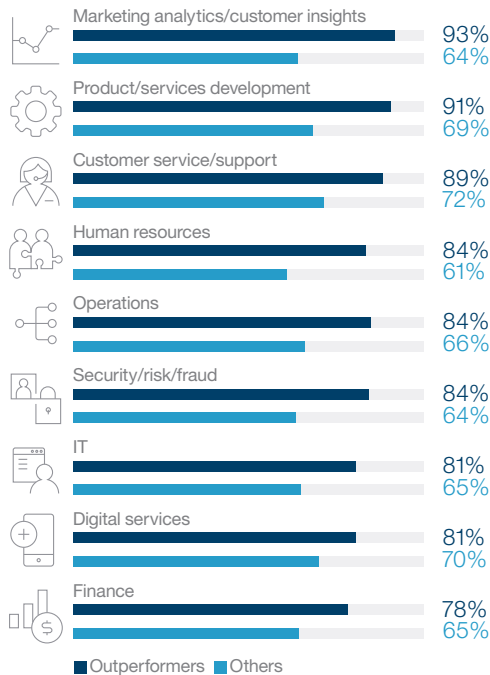
Leadership

As sales respondents highlight, without executive support, cognitive initiatives won't go very far. As an incentive, both CMOs and heads of sales — especially those from Outperforming companies (a whopping 93 percent) — believe cognitive will make their jobs easier. But not all organizations have a member of their C-suite dedicated specifically to data and digital innovation. For example, a little more than half of Outperformers — 53 percent — have a Chief Data Officer. That drops to 43 percent for other respondents. To derive meaning from the complexity of data that is housed across the enterprise, companies need C-level ownership of this vision and the strategies and empowerment to implement the necessary changes for their businesses.

Figure 9

Sharing sales data: Outperformers are far more likely to share their data widely

Percentage of heads of sales who report sharing sales data with these groups

Marketing analytics/customer insights
93%
64%

Product/services development
91%
69%

Customer service/support
89%
72%

Human resources
84%
61%

Operations
84%
66%

Security/risk/fraud
84%
64%

IT
81%
65%

Digital services
81%
70%

Finance
78%
65%

■ Outperformers ■ Others

Source: IBM Institute for Business Value, Sales n = 369 to 380.

Create a culture for cognitive solutions

A cognitive solution will bring the most value to companies that prize a collaborative, innovative work environment, informed by a cognitive strategy and the governance to deliver that vision.

Collaboration and innovation

The power of cognitive computing lies in its ability to analyze multiple types of data, draw out insights and continually learn from feedback and new data. If a company's data connections are limited due to a siloed work culture, the full potential of its cognitive effort won't be realized.

For example, numerous functions in an organization covet detailed sales data that they can leverage for insights. The extent to which the sales team is comfortable with and capable of sharing its data internally is one indication of a company's commitment to maintaining a collaborative culture. Sales leaders from outperforming companies have clearly made this a priority (see Figure 9).

Hand-in-hand with collaboration is innovation. New ideas are often sparked with the cross-pollination of information and expertise. This is one area that clearly distinguishes the Outperformers and may, in fact, be one of the key contributors to their success. As many as 80 percent say they are market leaders in innovation. Compare this to only 13 percent of other respondents who claim the same.

A corporate culture that promotes innovation is often comfortable using an agile "learn fast, fail fast" approach that encourages a degree of risk and provides safe environments for the testing of new practices, tools and processes. Companies that embrace continual reinvention as a necessary component of growth will be better positioned to take advantage of the broad opportunities cognitive solutions can offer across their businesses.

Strategy and governance

Given executives' predictions for cognitive's disruptive potential, their estimated cognitive investment and ROI aspirations, we would expect organizations to have a cognitive strategy in place. Yet, only 24 percent say they do. It appears many companies are treating cognitive technology as a tactical adoption rather than a strategic one. And for those still considering cognitive, formulating a strategy may seem premature.

We believe this approach to be shortsighted. By building a cognitive strategy at the onset — one that takes into account implications for business models, processes and customer and employee experiences — companies will be better positioned to maximize the value of their cognitive solution across their businesses.

Additionally, having common standards for data management and company-wide governance based on business needs is an important readiness indicator. Today, only 51 percent of Outperformers and 45 percent of other companies have such standards in place. Even fewer have a governance committee that considers data through the lens of business strategies and results. This will be a challenge when companies move more aggressively to implement cognitive technologies. Governance groups comprising stakeholders across the organization are needed to drive holistic views — systems-thinking approaches — that can facilitate the adoption and operation of new cognitive tools and processes.

Recommendations for a course of action

Make room for cognitive solutions in your Digital Reinvention strategy
Companies across multiple industries are in the midst of reinventing their customer experience with a variety of digital technologies, from mobile apps to Internet of Things (IoT) to virtual reality.[7] These digital customer touchpoints are producing new sources of structured and unstructured data that can be used in a continuous feedback loop to inform companies about customers' individual preferences, behaviors and attitudes.

The complex analysis needed to fully exploit this opportunity is well-suited to a cognitive approach. In fact, marketing executives listed "customer insights" as the primary way they could use cognitive to enhance their customer experience. Instead of seeing cognitive as a wholly separate initiative, CMOs and heads of sales should consider it a component of their Digital Reinvention strategy.

Enhance employees' business skills, not just their data analytics skills
Since the rise of Big Data, companies have been competing fiercely for people with analytics skills. So, it is no surprise that marketing and sales executives would think a lack of analytics talent could inhibit their implementation of a cognitive solution today. Yet, with cognitive technology, what marketing and sales may need the most are people who can discern business implications from cognitive insights. These practitioners will need a broad perspective of both company strategy and the nuts and bolts of the business. They'll need decision-making skills. And they'll need an empathetic understanding of their customers and what's required to consistently deliver their companies' brand promise.

Implement a change management plan that includes education and communication. Identify cognitive evangelists who are eager to learn and empower them to help launch your cognitive initiative and mentor others.

Make cognitive your golden opportunity for collaboration and innovation

The implementation of cognitive solutions for marketing and sales calls for tight alignment among the CMO, head of sales, Chief Information Officer (CIO), Chief Technology Officer (CTO), Chief Data Officer or Chief Digital Officer to ensure that the technical requirements for a cognitive solution are fully understood and maximized, and the aspirations and implications for cognitive map to the business's strategic goals. But it doesn't stop there. Cognitive for marketing and sales also could align to customer service, supply chain, product development, human resources and training, as well as operations and finance.

Leaders at legacy companies with a history of siloed business units may need to design new processes for data sharing and ideation among their teams. Cognitive will help usher in new thinking. Encourage pilots that can deliver small wins as a way to test drive new concepts. And reward innovators who are open to challenging "business as usual."

Start small, if necessary — but do start

Many marketing and sales executives fear the shift to cognitive will require them to "rip and replace" the tools and processes they use to analyze customer data and create customer experiences. Understandably, it would be daunting to build a business case for change on that scale. Instead, there are numerous types of cognitive solutions — from improved capabilities for personalization to content tagging — that marketers and sellers can implement in stages to target specific challenges. Often these solutions can be integrated into companies' existing cloud platforms and data management systems. By starting small, companies can begin to enjoy the benefits of a cognitive solution and determine how best to expand over time. More than half of Outperformers have already started their shift to cognitive. The real risk would be to wait too long on the sidelines while the competition forges ahead.

Ready or not? Ask yourself these questions

- How are you currently harnessing the power of structured and unstructured data to improve your customer experience?

- Can you access relevant insights to make real-time marketing and sales decisions, or are you unable to respond quickly because you have to analyze multiple information sources?

- To what extent are you relying on data scientists to surface actionable insights from your marketing and sales data, and how are you scaling their skills to meet your needs?

- What steps are needed to build a cognitive coalition across your C-suite and line-of-business (LOB) executives so that your cognitive solution can be a catalyst for creativity and innovation?

- If you could enhance just one marketing or sales capability with cognitive/AI, what would it be?

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For more information

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IBM Institute for Business Value

The IBM Institute for Business Value, part of IBM Global Business Services, develops fact-based strategic insights for senior business executives around critical public and private sector issues.

Notes and sources

1   In cooperation with Oxford Economics, the IBM Institute for Business Value surveyed 6,050 global executives representing 18 industries, including leaders of government departments and educational institutions. Roles of responding executives included major C-suite members — CEOs, CMOs, CFOs, CIOs, COOs and CHROs — as well as heads of customer service, information security, innovation, manufacturing, risk, procurement, product development and sales. There were 525 CMOs and 389 heads of sales who participated in this study, totaling 914 individuals whose responses are highlighted in this report. They come from companies located in Africa, Asia Pacific, Europe, the Middle East, North America and South America.

2. Based on IBM Institute for Business Value analysis and interviews.

3. Ibid.

4. Ibid.

5   Berman, Saul J, Peter J. Korsten and Anthony Marshall. "Digital Reinvention in action: What to do and how to make it happen." Institute for Business Value. 2016. https://www-935.ibm.com/services/us/gbs/thoughtleadership/draction/

6   Based on IBM Institute for Business Value analysis and interviews.

7   Payne, Philip and Carolyn Heller Baird. "The experience revolution: The game is on." IBM Institute for Business Value. 2016. https://www-935.ibm.com/services/us/gbs/thoughtleadership/custexperience/cx-trends/