

# THE BIG POTENTIAL OF BIG DATA

A FIELD GUIDE FOR CMOS



IN ASSOCIATION WITH:

**rocketfuel**  
Artificial intelligence. Real results.

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# FOREWORD



The fundamentals of marketing are unchanged: Understand your customers, meet their needs better than anyone else.

But the unprecedented tsunami of data available has dramatically changed the way marketers and ad agencies do their job.

A short time ago, a few mutually exclusive audience segments were enough to optimize a marketing campaign. Gender, age and household income segmentation could break the adult U.S. population into 84 segments, a fairly manageable number for humans to process. But for any national advertiser today, the addition of new segments, such as those defined by interests and online activity, creates an explosion of possibilities. All the new data from these segments provide tantalizing clues to consumer attitudes and emotions that CMOs never had access to before. With non-exclusive segments in the mix, the number of combinations to consider when performing analysis becomes larger than the number of grains of sand on earth!

This is literally an inhuman problem, which is why a combination of Big Data and Artificial Intelligence has become indispensable. CMOs can now learn not just what is working but also what data matters: AI-powered solutions can quickly identify which data points are significant to performance and eliminate those which are not.

Getting smarter faster is the key to success in this new marketing era.

Whether your company is a leader or a laggard in Big Data, this survey contains insights that can help you do exactly that.

Let's get to it.

**ERIC L. PORRES**  
**Chief Marketing Officer**  
**Rocket Fuel**

# INTRODUCTION

Everyone in business likes data these days.

Numerical patterns offer the most surefire way to ensure that companies make the right decisions about how to operate more efficiently and where to target their resources. Data has become the bulwark of strategy.

Many executives say the bigger the big data, the better. And perhaps no area has benefited from this big data more than marketing.

A Forbes Insights survey conducted in association with the big data AI company Rocket Fuel has found that marketers (advertisers and corporate executives) who use big data generate more benefits from their initiatives than those who do not use it. They are more likely to generate helpful insights about consumers than organizations that are behind the data usage curve, and they are more likely to see gains in sales, the holy grail of marketing initiatives.

As the flow of online interaction increases and accelerates, companies will need their information faster. The survey showed increased usage of machine learning or artificial intelligence that can spew out insights in lockstep with consumer behavior.

The Forbes Insights survey of 211 senior marketers gauged perceptions about the success of their marketing initiatives, as well as their use of and the benefits of big data. The survey also considered the challenges to using big data and the growing importance of artificial intelligence for staying in front of consumers. The companies had revenues of at least \$500 million and marketing budgets of \$10 million or more. The agencies served brands of similar size. Both the non-agencies and agencies cover a number of different industries, with the largest segments in banking and finance. Due to their size, resources and the industries they encompass, these organizations tend to be leaders in the use of technology and data.

Rocket Fuel delivers a leading programmatic media-buying platform at Big Data scale. It is designed to use the power of artificial intelligence to improve marketing ROI in digital media across web, mobile, video, and social channels. Customers in North America, Europe, and Japan use Rocket Fuel to run digital advertising campaigns globally. Rocket Fuel's Advertising That Learns™ platform is used to achieve measurable business goals for a diverse array of campaigns. Rocket Fuel currently operates in 19 offices worldwide including New York, London, Paris, and Hamburg.



## KEY FINDINGS

**Big data works.** Adopters have reaped benefits in ROI, customer interactions and insights into customer behavior. Of the organizations that used big data at least 50% of the time, three in five (60%) said that they had exceeded their goals. At the same time, of the companies that used big data less than 50% of the time, just 33% said that they had exceeded their goals.

**The more frequently that companies felt that they were making sufficient use of data, the more likely they exceeded their goals.** More than nine in 10 companies (92%) who had always or frequently made sufficient use of data said that they had met or exceeded their goals, while just 5% who said that they were making sufficient use of data said that they were falling short of their goals.

At the same time, **marketers seem to be suffering from a personality split.** The overwhelming majority of executives say they are satisfied with their marketing. When pressed for more detail, however, the participants' rosy view contradicts other, more detailed findings.

**Executives believe that they are using big data enough when they aren't.** A majority of agencies and non-agencies said that they were frequently or always making sufficient use of data in marketing decisions. However, only about one in 10 non-agencies managed more than half their advertising/marketing with big data, and a third of agencies used big data in more than half their initiatives.

**Many executives may be struggling to define big data and its potential benefits.** Just over half of senior executives (both at agencies and other companies) said that they agreed or strongly agreed that they had a good understanding of big data and its benefits.

**Systems that generate data quickly and can account for changing consumer behavior—those that utilize machine learning—will be increasingly important.** Roughly a quarter of respondents called them critical to the success of their marketing, while another 43% of agency executives and 44% of senior executives at non-agency organizations said they would be increasingly important for most initiatives.

# NEW POSSIBILITIES, BETTER RESULTS: THE CASE FOR BIG DATA

With big data's rise, these organizations possess unprecedented tools to reach and engage audiences. They can pinpoint consumer behavior in more ways than ever with more precision.

"Our usage and understanding of data has changed dramatically," says Paul Gunning, president of the Chicago office of advertising agency DDB Worldwide. "We are getting much better ideas of where we are having an effect on our clients' brand metrics and sales, and where we're not."

"If you told me a couple years ago that you would have to build a tech stack that could process millions of records every single night to do daily optimization across multimedia campaigns, I would never have believed you," says Theresa LaMontagne, managing partner, senior practice lead Analytics and Insights for MEC North America, a New York-based media agency.

In its short history, big data has proved itself hugely successful. Adopters have been able to reap benefits in ROI, improved monetization and insights into consumer

behavior that translate to new business. Of the organizations that used big data at least 50% of the time, three in five (60%) said that they had exceeded their goals. Just 5% of the surveyed companies in this 50%-or-more-category said that they had fallen short of their goals. At the same time, of the companies that used big data less than 50% of the time, just 33% said that they had exceeded their goals.

MEC's LaMontagne says that since her agency began employing its proprietary digital attribution platform, its clients have achieved an 8% to 23% sales lift over similar initiatives that did not use this resource. "The payback on the analytics is quite high," LaMontagne says, adding: "The range of lift varies depending on the client and sector."

Companies that used big data more than 50% of the time were also far more likely to see other benefits than the under-50% group. Nearly three in four companies in the former group could measure the effects of multichannel campaigns versus about one in two companies in the less than 50% category. They were far more likely to be able to integrate initiatives smoothly across channels, optimize customer response and deliver options to consumers than the group that used big data less than 50% of the time. These capabilities translate generally to improved sales.

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"The payback on the analytics is quite high."

— **THERESA LAMONTAGNE**  
Managing Partner,  
MEC North America

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## IN DETAIL: WHERE BIG DATA FLEXES ITS MUSCLES

Companies that use big data tend to shine in identifying, reaching and engaging the right audience. Big data connects to improved financial performance. Eight in 10 (79%) marketers and advertisers who use big data more than 50% of the time were able to pick out the right audience in all or almost all of their media, compared with just 35% of those who used it less than 50% of the time. And seven in 10 agency executives (71%) agreed or strongly agreed that they understand who was engaging with their product; 64% of marketers said the same.

Moreover, big data shines with its numerous ways of looking at consumers—when and where they are likely to access an impression and by what means. And that leads to efficiency that bolsters financial performance.

Of those who use big data to drive more than half their marketing strategies, 75% said that they were able to monetize their audience. Likewise, 75% believe their company is making the right media buys, compared with just 50% of those who use big data in less than half of their programs. Even more interesting, they were better able to pinpoint areas where their marketing initiatives are a waste of money.

There is a powerful connection between companies' ability to identify customers and their preferences and successful monetization. These areas also tie into sales performance. It is with this in mind that many larger agencies have adopted wider-reaching, more sophisticated models for collecting and analyzing data. Nigel Morris, CEO of Aegis Media Americas and EMEA, says that among the agency's main focuses has been identifying a consumer's geographic location at particular times.

For example, in serving one major car manufacturer, Aegis, a division of the UK-based Aegis Group, turned data that it collected from interested buyers visiting the automaker's website into insights that helped pinpoint when potential buyers might be visiting a dealership. Aegis Americas could then help ensure that these consumers received exactly the type of content they needed to make a more informed buying decision on site. Morris says that this new degree of on-the-go specificity addresses a massive change in purchasing dynamics: The buyers of goods—with so many online resources at their disposal—may know as much about products as the sales staff. He says that it is up to agencies and marketers to deliver exactly the information consumers may need, at the right time and in the right format.

"We're in a situation of near perfect competition: Buyers and sellers are equal in power," Morris says. "Our ability to connect and engage is based on our ability to give buyers exactly the information they need at the right time and place."

But Morris also says that this new capability can be a double-edged sword. If agencies (and marketers) overuse big data—provide too much information—they risk annoying the buyer. Pace and tone can be critical to the success of an initiative.

"We have to respond [to the consumer] in the most appropriate way," Morris says. "We can't be intrusive. If we're bombarding them, we're not giving them the information that they need, then the performance of the brand will go down."

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—NIGEL MORRIS  
CEO, Aegis Media Americas and EMEA

It is not surprising then that the executives who reported their initiatives falling short were also the least likely to understand their customer, how to engage her, or how to turn an audience into sales.

**Figure 1. My company... (Strongly agree, Agree)**

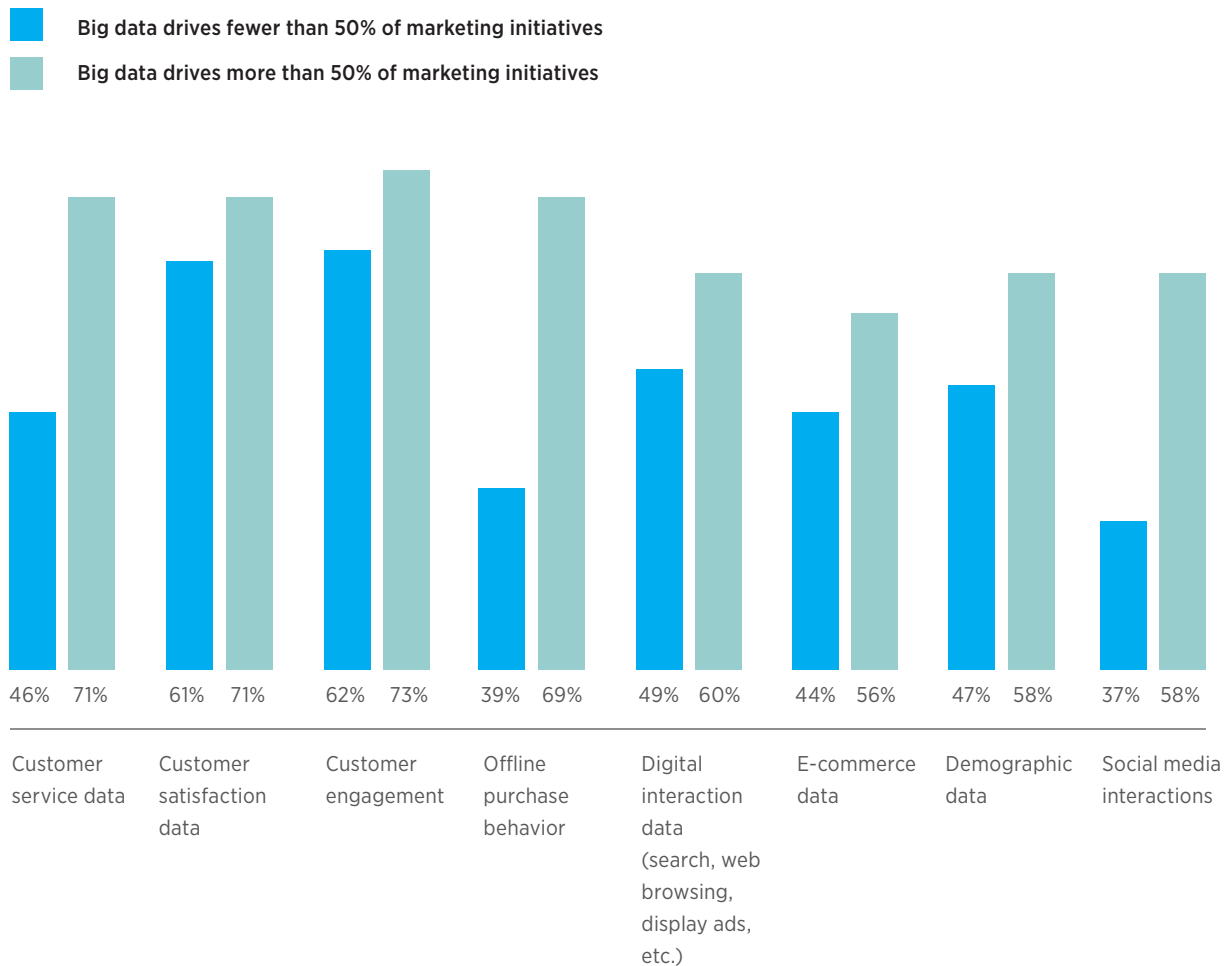
	<b>Marketing initiatives are exceeding goals</b>	<b>Marketing initiatives are meeting goals</b>	<b>Marketing initiatives are falling short</b>	<b>Big data drives fewer than 50% of marketing initiatives</b>	<b>Big data drives more than 50% of marketing initiatives</b>
...understands who is engaging with its products	73%	73%	42%	63%	84%
...understands who likes or dislikes our products	63%	60%	44%	52%	79%
...understands why individuals like or dislike our products	65%	53%	27%	48%	79%
...is making the right media buys	64%	58%	41%	50%	75%
...has a good understanding of big data and its benefits	61%	54%	31%	44%	77%
...is able to monetize its audience sufficiently	59%	56%	27%	45%	75%
...is wasting money in executing its marketing initiatives	49%	46%	44%	42%	63%

Heavy users of big data also take a more comprehensive view of customer behavior when developing marketing efforts. Those executives who use big data to drive more than half their marketing initiatives use offline behavior,

customer service and satisfaction data, engagement metrics and digital behavior in significantly greater measure than do those who employ big data in their marketing initiatives to a lesser extent.



**Figure 2. What types of data do you use in your marketing efforts?**



This type of information that companies assemble may even include areas that were not on the radar until recently but may affect initiatives profoundly. DDB’s Paul Gunning spoke of working with one retailer who informed him one day that no matter how well they executed weekly advertising, the stores would not have a big weekend—their peak time for sales—if it rained on Friday. Now Gunning’s agency knows that it must sometimes incorporate data on weather patterns in analyzing potential consumer reactions. This added variable has simultaneously required it to compartmentalize and to localize its initiatives to a new degree.

“We might start to feel comfortable now that we have a good media place and great messaging and we’re affecting

sales, and we think we have that dialed in,” Gunning says. “Lo and behold, that might not be the case when it’s really rainy. We need to affect our messaging around where it could be raining, and that gets to be very hyper local in its environment.”

Gunning adds that this new consideration has prompted the realization that there are more variables to come. That is, marketers don’t know fully what data they will be able to generate and which streams will be most important. “There are a whole bunch of new sets of data that could provide a massive opportunity for us to affect our client sales positively, but will again add a huge amount of complexity to the data,” Gunning says.

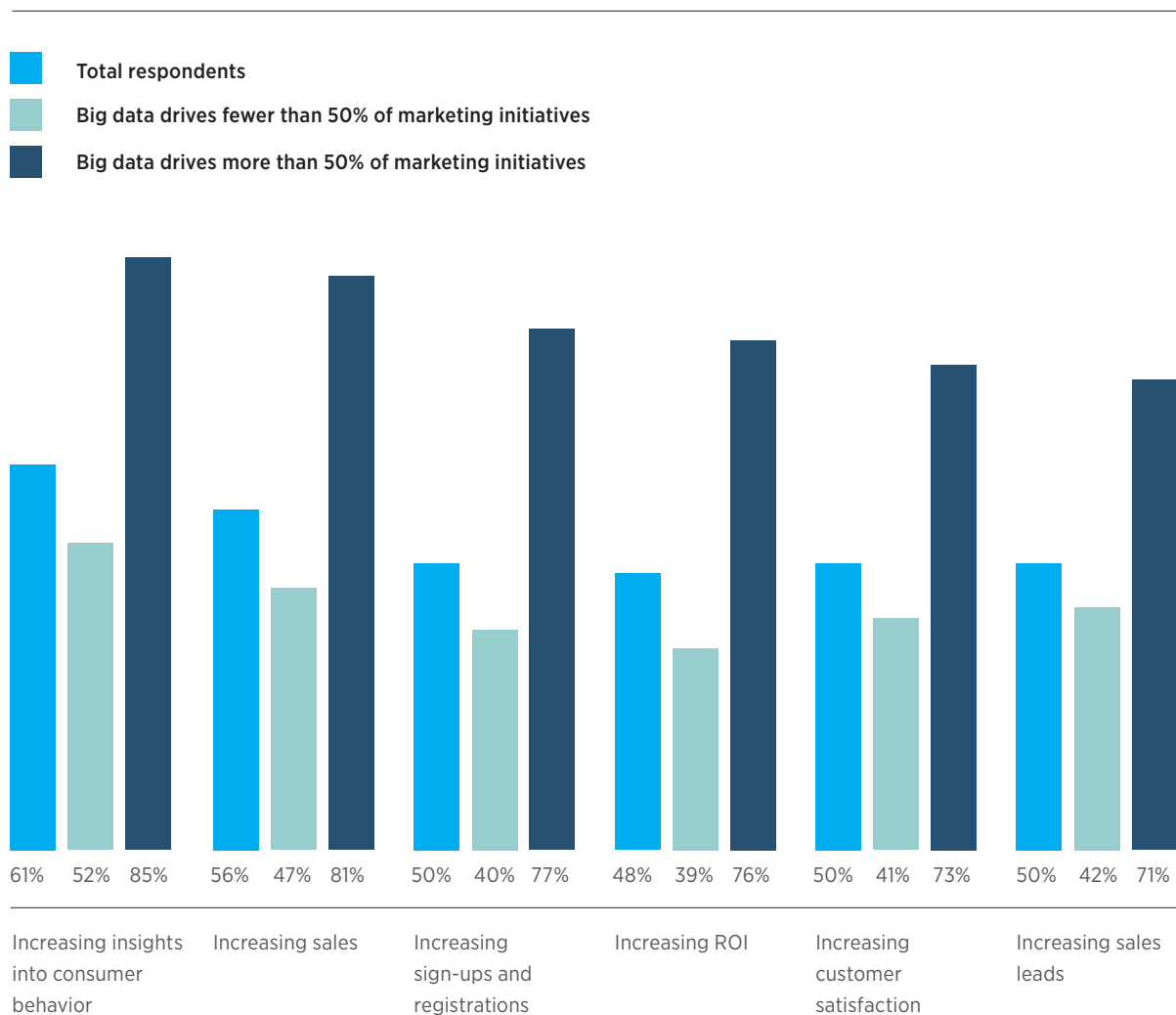
Consider also RB, the \$13.5 billion UK-based consumer goods giant and parent of such major brands as Mucinex, Woolite, French's, Calgon, Clearasil and Lysol. The company's CMO for North America, Laurent Faracci, calls data "the key discriminator of our culture."

For example, Faracci says that RB tailors the marketing of its flagship brand Lysol by region and season. Faracci

says that in the North, the company may emphasize Lysol's effectiveness in stopping the spread of germs during the winter flu season, but in the Southeast during wet seasons, RB may focus on how Lysol combats mold.

Faracci says that this specificity enables RB to be more efficient. "We make sure that we follow the consumers," he says. "We look at data holistically."

**Figure 3. In what areas have your initiatives benefited from the use of big data? (Always or Often)**

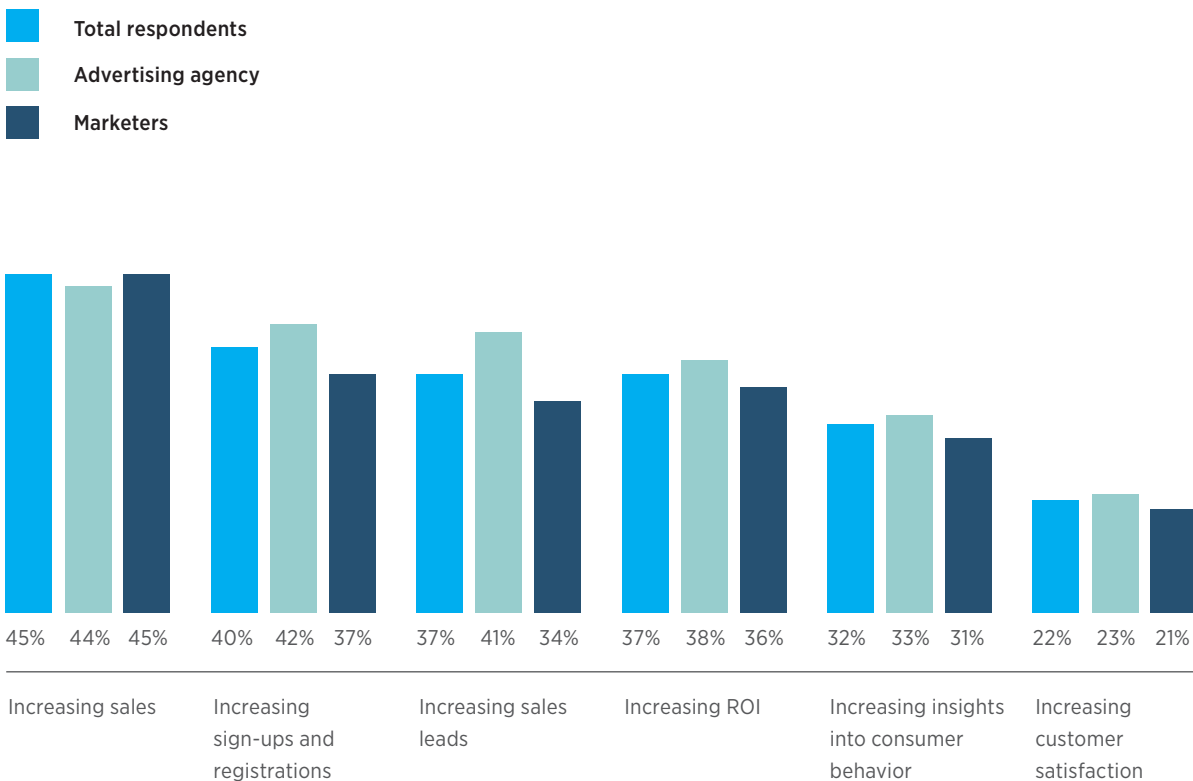


# THE SPLIT PERSONALITY

Yet the survey also found a strange dichotomy. The overwhelming majority of executives are satisfied with their marketing. Approximately eight in 10 agencies (84%) and marketers (79%) say that their initiatives are meeting or exceeding their goals.

When pressed for more detail, the participants' rosy view contradicts other, more detailed findings. In half a dozen fundamental measures of marketing success, they are not reporting the types of results that lead to competitive advantage.

**Figure 4. In which areas, if any, do you feel the effects of your initiatives are falling short?**



To be sure, most companies (67%) seem to have a good idea of who is engaging with their products. Still, the survey suggests fundamental shortcomings in how companies are using big data—they are tapping only part of its potential.

Less than half the respondents (45%) think that their companies are able to pinpoint the right audience most of the time. In other words, they may know who is engaging, but can't necessarily find them in the first place. In addition:

Just slightly over half (51%) agreed or agreed strongly that they were able to monetize their audience sufficiently.

An only slightly higher percentage held the same views regarding their company's ability to understand who likes its products (58%) and why (55%). This means that four in 10 executives do not have a handle on this important information about the consumers that they are trying to reach.

All of the above suggests that there are huge, unfulfilled opportunities for marketers who can diagnose and fix their data shortcomings. "I think we always want to get better data," says Jeff Karp, executive vice president of Social and Mobile Games for the Game Show Network (GSN).

The provider of online, interactive games and other entertainment faces stiff competition in its market. GSN must constantly monitor what's resonating with its

customers to tinker with its products or even replace them.

"We're constantly evolving the way we connect with consumers, and whether we're looking at things like demographics—we're looking at where they live in the world, we're looking at their players versus payers, we're looking at competitive landscape—we're looking at all different filters to basically find the immediacy and connect with those players," Karp says. "Included in that is, there is also different creative that we have to present to them, so we literally will have thousands of different ads on any specific game that potentially is localized, potentially connects more with one player or one demographic, more than another demographic. We're constantly evolving how we communicate to those players to ensure that we have an opportunity to let them play and try our games."

But Karp says that generating so much data about individuals' online behavior raises issues about privacy. "We create entertainment, and ideally we're trying to put a smile on people's faces," Karp says. "That said, there's that balance between connecting with them when they want to and—I hate to say the word, but—spamming them, I think is the challenge that everyone faces. At a macro level, we're trying to live within the parameters of privacy, but understanding that the more information and the more data we can get on an individual, the more relevant the communication can be to them."

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"We're constantly evolving how we communicate to those players to ensure that we have an opportunity to let them play and try our games."

— JEFF KARP  
Executive Vice President of Social and  
Mobile Games, Game  
Show Network

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**Figure 5. Across what proportion of media do you feel that your company is able to pinpoint the right audience?**

	Total respondents	Advertising agency	Marketers
Almost all media	9%	10%	8%
Most media (roughly 75% or more)	36%	38%	35%
Some media (roughly 25%-74%)	37%	38%	36%
Few media (less than 25%)	15%	11%	19%
No media	2%	3%	2%

**Figure 6. My company... (Strongly agree, Agree)**

	Total respondents	Advertising agency	Marketers
...is wasting money in executing its marketing initiatives	47%	49%	45%
...is able to monetize its audience sufficiently	51%	56%	47%
...is making the right media buys	56%	56%	55%

What's the reason for this personality split? It may be because only about 52% of the marketers and advertisers said that their organizations had a good understanding of the benefits of big data. This in itself may reflect uncertainty about how to embrace the phenomenon. "Our understanding of data is changing rapidly, we are using more than we ever have, and it is much more real-time," says DDB's Gunning.

Gunning says that in some instances, clients have even been resistant to change—reluctant to provide information that they have traditionally kept to themselves. Asked if he is satisfied with the quality of the data that he receives,

Gunning says: "Not at all. I think there are so many variables that we need to contend with, and a lot of those variables we still don't have our hands on. Some sets of data we can't get to. Some sets of data our clients won't share with us. Even what we have produces a lot of noise. We need expertise to derive information out of that noise. We're doing this while continually adding more streams of data into the mix."

Gunning adds, "I wonder if it is something that we will ever feel satisfied with."

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"We need expertise to derive information out of that noise. We're doing this while continually adding more streams of data into the mix. I wonder if it is something that we will ever feel satisfied with."

**—PAUL GUNNING**  
President Chicago Office,  
DDB Worldwide

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# DO COMPANIES USE BIG DATA ENOUGH?

At the root of the problem may be a misconception: Companies believe that they are using big data enough when they aren't. A majority of agencies and non-agencies said that they were frequently or always making sufficient use

of data in marketing decisions. However, only about one in 10 non-agencies manage more than half their advertising/marketing with big data, and a third of agencies used big data in more than half their initiatives.

**Figure 7. Do you believe that you are making sufficient use of data in your marketing decisions?**

	Total respondents	Advertising agency	Marketers	Marketing initiatives are exceeding goals	Marketing initiatives are meeting goals	Marketing initiatives are falling short	Big data drives fewer than 50% of marketing initiatives	Big data drives fewer than 50% of marketing initiatives
Always	14%	22%	7%	18%	13%	7%	6%	42%
Frequently	47%	43%	51%	59%	50%	14%	51%	35%
Sometimes	32%	25%	39%	21%	34%	55%	36%	21%
Rarely	4%	7%	2%	2%	1%	21%	6%	0%

## SUFFICIENT USE OF DATA = MORE USE OF DATA?

The more frequently that companies felt they were making sufficient use of data, the more likely they exceeded their goals and were using big data more than 50% of the time. More than nine in 10 companies (92%) who had always or frequently made sufficient use of data said that they had met or exceeded their goals, while just 5% of those who said that they were making sufficient use of data said that they were falling short of their goals.

Nearly one in four companies who felt that they were making sufficient use of data use big data more than 50% of the time (28%), and an additional 44% of these companies

who felt the same met their goals. That was more than 20 percentage points more than companies who used big data less than half the time and exceeded or met their goals.

Those who use big data in more than 50% of their initiatives are more than twice as likely as their less data-heavy counterparts to say that the ability to collect and analyze data in an increasing number of ways has become more important over the past two years (69% vs. 29%) and are twice as likely to predict that its importance will continue to increase in the ensuing two years (71% vs. 36%).

## DO EXECUTIVES KNOW WHAT THEY'RE MISSING?

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Many executives may be struggling to define big data and its potential benefits. Just over half of senior executives at agencies and companies said that they agreed or strongly agreed that they had a good understanding of big data and its benefits.

But given their companies' middling performances in key areas, this may also suggest that executives don't know what they don't know: They may not fully understand all the ways big data can be used, so they don't know which benefits they're currently missing out on. Over half of agency executives and senior executives in non-agencies (52%) agreed or strongly agreed that they had a good understanding of big data and its benefits. Surprisingly, few of them (24%) see this "lack of understanding as to what big data is and what it can do for us" as a main challenge to adoption.

A surprisingly low percentage of senior executives pinpointed any one particular challenge as holding them back; the number-one challenge—lack of technology resources to collect enough information—was selected by just 38% of executives.

LaMontagne says that the main obstacle isn't the "volume of data," but rather, "getting clean data." By clean data, she means relevant to the client, and organized in a way that makes detailed, meaningful analysis possible. "Clean data requires a tremendous amount of rigor," LaMontagne says. "I'm speaking about marketing performance or digital attribution data. It's standardization, operationalizing the data quality, normalizing it."

She adds: "It's about creating consistent naming conventions, ensuring the accuracy of the underlying data—because it doesn't matter how much data you have or how quickly you're getting it, if it's not aligned to the client's business or how it views the category. It's very easy to get apples to oranges if you are not careful."

At the same time, lack of skills doesn't seem to be an issue either. Companies seem to have the employees that they need to work with big data.

## THE SURVIVOR: A NEWSPAPER USES BIG DATA TO SHINE IN A STRUGGLING INDUSTRY

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Newspapers and magazines have been hard hit over the past decade, as competition for audiences has increased. *The Financial Times* of London has been one of the few bright spots, increasing circulation and revenues. The paper's head of data analytics, Tom Betts, says that the paper's use of big data to understand consumers has been an essential element in its growth.

The FT has made especially good use of a pay wall that it installed online in 2007 to collect information. To access an initial (free) eight stories per month, readers must submit an email address and some other information about themselves. This enabled the paper to learn about these individuals' online reading habits.

Betts says that it has been particularly helpful in determining not only what consumers are most inclined to read but how they are accessing FT content—by tablet, smartphone or computer. But equally important has been the company's ability to knit all this data together to draw a comprehensive picture of consumers. "From a marketers' perspective, having an appreciation and awareness of who you are talking to, knowing that I can reach a person in the morning on a smartphone, on a PC in the afternoon, on a tablet in the evening is enormously powerful, because we know those people are in different frames of mind," Betts says. "But if you don't have a joined-up view and all the data that underpins it, then you risk having to overcontact people because you have to ensure you reach the people that you have to reach."

In one initiative, the FT assigns scores based on the likelihood that a registered reader will become a subscriber. The company then focuses more of its marketing efforts on converting these types of consumers. "We can identify those readers across channels," Betts says. "Then we can be more focused in who we talk to because we can target individuals who would most benefit from a [marketing] communication but not talk to people who are unlikely to purchase a subscription."



Nearly two in three executives (64%) said that they were at least somewhat satisfied with their staff’s analytical/quantitative skills. Just 16% said that they were at most somewhat dissatisfied.

So the issue here may be that executives aren’t seeing big challenges simply because they don’t yet know enough about big data—or aren’t far enough along on the adoption curve—to have a firm handle on the difficulties they may face. Further bearing this out, many agency executives (27%) and senior marketers (24%) said that they were uncertain what metrics would be most helpful, suggesting they may not even know how to harness the data they already have.

The idea that executives don’t know what they don’t know is further borne out by agency executives. Despite the fact that they’re further along on the adoption curve than senior marketing executives at non-agencies, they march in lockstep regarding the main benefits of big data.

Even those who are exceeding their marketing goals don’t differ substantially from those who are falling short, when it comes to understanding the benefits of what big data can do for them. “For me, it’s a misnomer to call it big data because we’re not simply aggregating,” says Monik Sanghvi, the chief strategy officer for Organic, a division of Omnicom. “It’s big insights.”

Yet Betts also believes that there is significant room for improvement, although he can’t say precisely what that will be. “Two years ago, we were probably about half the size we are today as far as data analytics experts,” Betts says. “There was a tremendous amount of untapped potential. Today we’ve mined a great deal of that potential, and we are in a very good place and are getting a great deal of value from data. But I don’t think that we will ever be in a place where we can say, ‘That’s it, we’re getting everything that we can get.’”

He adds: “You don’t know what you don’t know. There is a world of opportunity, but I couldn’t tell you what it is today. The more we scale data today, the more everyday business users use it in their jobs, the more they will help us identify more challenges and opportunities.”

**Figure 8. What do you see as the main benefits of big data?**

	Advertising agency	Marketers	Big data drives fewer than 50% of marketing initiatives	Big data drives more than 50% of marketing initiatives
Understanding customer opinion about products and services	48%	42%	41%	58%
Using customer feedback to pinpoint the types of products that consumers want and then acting on them	52%	50%	48%	60%
Developing greater insight into the customer experience across all types of media and then crafting a strategy that turns this understanding into positive results	64%	63%	63%	65%
Dissecting customer behavior to understand when, where and under what circumstances consumers engage with brands and make purchases	46%	44%	43%	52%
Fine-tuning marketing initiatives in real-time	35%	31%	31%	40%
Don’t see any benefits to big data	7%	3%	4%	6%

# THE PROGRESSIVE AGENCIES

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While executives at agencies and non-agencies more or less agreed on most points related to big data, there were a few notable differences. Agency executives were likelier than their marketing executive counterparts to note greater increases in sales leads, signups and registrations, insights into consumer behavior and increased ROI through the use of big data. This is likely due to two reasons: They're more likely to be using big data to drive initiatives, and they've been working with big data for longer.

This finding also underlines the role of the advertiser as a contractor who executes the nitty-gritty of initiatives and insulates the company from dirtying its hands. To that end, agencies are also likelier to spread the responsibility for accessing and controlling customer data in equal measure between marketing and IT—similar to those who use big data most frequently to drive marketing initiatives—while senior marketers at non-agency companies are likelier to report that marketing holds the reins.

Aegis's Nigel Morris says that companies in some sectors such as retail are “unbelievably sophisticated” in how they are using data. But Morris notes that some larger companies have not yet fully integrated IT and marketing in ways that would likely improve their use of data. “For some of the bigger or global companies, the way that data is managed is divorced from the marketing function,” Morris says. “For a 60,000-person organization with 4,000 people who are managing data, they are not ingrained [in the management of data]. Agencies are much smaller, and operations and (even) executives are very close to the data.”

Morris adds: “If you look at the areas that they are investing in, data is very close to the business. By nature, they have to be much closer to business decisions [based on data use] than marketers. They are spending an enormous amount of investment and effort in handling data. It's much more core to agencies' operation.”

Advertisers were likelier to believe that their marketing initiatives are exceeding their goals than are general marketers, with more than half saying their initiatives are exceeding goals, compared with 33% of general companies.

Agencies also appear to have been the early adopters of big data, largely because they recognize the importance of this tool: 48% say that data collection and analysis became “much” more important over the last two years, while 53% anticipate it continuing to become “much” more important in the coming two. On the other hand, a full 28% and 35%, respectively, of non-agency marketers say the same. In other words, marketing executives' understanding of the importance of big data will continue to grow, but it has not yet reached the same level as that of agencies—nor is it expected to anytime soon.

For MEC's Theresa LaMontagne, this may simply reflect the differing priorities of marketers and agencies. Companies hire agencies because they are more likely to be leading trends. “Our job is to ensure that we get companies' message to their audiences as efficiently and effectively as possible, and we are challenged with the privilege of planning and optimizing their media spend,” she says. “We're doing this day in and day out across multiple channels and clients.”

# THE IMPORTANCE OF MACHINE LEARNING

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This may change in the future, as marketers and agency executives automate many of their systems to better collect and analyze customer data and manage data quality, measurement, workflow and optimization. Systems that generate data quickly and can account for changing consumer behavior will be increasingly important. Roughly a quarter of respondents called them critical to the success of their marketing, while another 43% of agency executives and 44% of senior executives at non-agency organizations said they would be increasingly important for most initiatives.

The survey offered ample evidence of the importance of adjustability—the ability to alter initiatives based on rapid, ongoing feedback about audiences. Machine learning makes this possible.

Companies that use big data more than 50% of the time were far more likely to hold this view than companies who use data less than 50% of the time. This finding underscores the view that companies that are making more use of data already have a keener understanding of its importance.

Where is machine learning particularly important? Those who said that machine learning was critical or increasingly important to their success were three times more likely to say that their impressions were excellent as those who said it was important in a few cases.

Those who said that machine learning was critical or increasingly important were about twice as likely to rate their ability to adjust initiatives quickly based on audience feedback as excellent as were the group who took a lesser view of machine learning's importance. And they were notably more inclined to say that they were “good” or “excellent” at drawing meaningful insights about consumers (56% vs. 42%), harnessing data (54% vs. 33%) and reaching the right audiences (63% vs. 44%) as the group that didn't consider machine learning so important.

Organic's Monik Sanghvi says that the agency's ability to monitor and respond to parents' interactions on social media has been key to helping one client, a consumer goods company, maintain product loyalty and boost sales. Organic helped the client portray itself not only as a source of products but also of advice for families. This subtle and successful shift in marketing would not have been possible without the ability to track consumers' concerns as they unfolded.

“It's not too preposterous to say you will be behind the curve if you are not leveraging machine-based optimization,” says Sanghvi. “We will have to be able to serve up relevant search engine results and deliver them in real time. It is critical.”

DDB's Paul Gunning has a more measured appraisal that underscores an age-old tension in marketing. Is marketing more science than art? Gunning appreciates the value of machine learning in pinpointing messaging and understands that it will play an increasing role in his company's work. But he does not see as much value for it in some areas of media. Nor does he foresee it trumping the creative spirit that drives content and inspires audiences. I think in parts of our business machine learning is going to have a staggering effect, and I think in other parts it is not going to be as noticeable,” Gunning says. “I think the big factor here with our business is exchanges and automation of real-time buying of media placement, and dynamically generated messages that are all algorithmically driven, as well. When you start thinking about television advertisements, having such pinpoint access on the individual homes, that's a very, very different-looking world. That being said, I don't think an algorithm is ever going to assemble our television commercial. You still need good, creative people to put together impactful experiences.”

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“It's not too preposterous to say you will be behind the curve if you are not leveraging machine-based optimization.”

— **MONIK SANGHVI**  
Chief Strategy Officer, Organic

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# CONCLUSION

The benefits of big data are clear: Those who use it more often say that their marketing initiatives are more efficient and effective. They are able to reach the right audience more frequently, and recognize a greater return on their investment. More than half of executives (52%) see benefits to using big data. And 84% believe the ability to collect data and analyze it rapidly in an increasing number of ways will become more important in the next two years. This is because agencies—and, to a lesser extent, senior marketers—are already seeing tangible benefits.

“The holy grail for marketers and advertisers is that you want to get to consumers when they are most receptive to messaging,” says Organic’s Sanghvi. “Leveraging data and having machines figure it, and sending messaging when consumers are most receptive to it—you don’t get more targeted than that.”

But the challenge is a lack of full understanding of the benefits of big data and how to harness them. Even those who use big data most strongly still aren’t fully aware of its benefits. And the more sophisticated uses of big data—real-time adjustment of promotions and offerings, developing a truly holistic view of the customer across all touchpoints—are still not fully realized by even the heaviest of big data users.

Companies must look more honestly at their initiatives and use of data. Do the results really support a sense of satisfaction? Are they achieving or exceeding their goals? We suggest the following steps to make more effective use of big data:

- Secure the buy-in of senior management. Change can take time, particularly at large companies with obligations to investors. But if top executives are supportive, it will make the acquisition or building of a better system for collecting and managing data less complicated.
- Identify what types of data will be most beneficial. All the data in the world won’t help unless it is on point and easy to draw comparisons from. Ensure data hygiene.
- Test the frameworks. Is the system that a company employs generating and managing information in a satisfactory way?
- Use machine learning to keep abreast of changing consumer behavior. Initiatives have shorter cycles. Online opinion can shift rapidly.
- Consider working with a partner that can help optimize the use of data.



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