

Breaking away: The secrets to scaling analytics

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A handful of the world's companies have cracked the code on embedding analytics into every layer of their organizations.

The time for simple experimentation with analytics is over—and most companies know it. Across industries, we see organizations investing heavily to integrate analytics throughout their entire business in an effort to capture a portion of the \$9.5 trillion to \$15.4 trillion of value that the McKinsey Global Institute estimates advanced analytics can enable across industries globally.¹

Despite this investment, senior executives tell us that their companies are struggling to

capture real value. The reason: while they're eking out small gains from a few use cases, they're failing to embed analytics into all areas of the organization.

However, in a recent McKinsey Analytics survey of 1,000 companies with more than \$1 billion in revenue and spanning 13 sectors and 12 geographies, we identified an elite group of companies that is achieving the elusive goal of analytics at scale.

¹ See "Notes from the AI frontier: Applications and value of deep learning," McKinsey Global Institute, April 2018, on McKinsey.com.

What does analytics at scale look like? One major US retailer responded to fast-changing consumer behaviors and fierce online competition by reshaping its entire business around analytics. A state-of-the-art analytics capability would span all eight of its business units, all six of its major operational functions, and all 60 million of its customers.

The results have been impressive. The new capability aggregates all customer interactions and extensive customer information across brands and channels, enabling the company’s analytics teams to target offers to customers at a microsegment level. And the impact truly spans the organization. In marketing, for example, the company can deliver personalized content through its website, emails, and digital ads. In strategic planning, the capability pinpoints neighborhoods where

people make the most online and catalog purchases in order to identify the most promising future store locations.

However, getting to that point wasn’t easy. The company had to overcome many challenges, including the toughest of all—bridging the “last mile,” or delivering the right insights to the right people at the right time in a way that informs their decision making to drive better business outcomes.

How the best break away from the rest

To achieve similar success in scaling analytics, organizations can look to the practices of the 8 percent of companies in our survey that are breaking away from the pack. Based on our research, there are nine critical drivers of these breakaway companies’ relative success at scaling analytics (Exhibit 1). (See sidebar,

EXHIBIT 1

Breakaway companies scale analytics by significantly outperforming in nine critical areas across three categories.



Aligning on strategy

1. Obtaining a strong, unified commitment from all levels of management
2. Increasing analytics investments, with a focus on the last mile



Building the right foundations of data, technologies, and people

3. Developing a clear data strategy with strong data governance
4. Using sophisticated analytics methodologies
5. Possessing deep analytics expertise enabled by a tailored talent strategy
6. Creating cross-functional, collaborative agile teams



Conquering the last mile by embedding analytics into decision making and processes

7. Prioritizing top decision-making processes
8. Establishing clear decision-making rights and accountability
9. Empowering the front lines to make analytics-driven decisions

About the research

For this primary research, we conducted 1,000 phone-based survey interviews with C-suite executives from companies with more than \$1 billion in revenues across geographies and sectors. Companies were sampled globally, including from Australia, Brazil, China, France, Germany, India, Japan, New Zealand, the Nordic countries, Singapore and Southeast Asia, Spain, the United Kingdom, and the United States.

Organizations covered all major sectors, including automotive, banking, consumer, energy (including oil and gas), healthcare, high tech, insurance, pharmaceuticals, resources (including mining and utilities), retail, telecommunications, and transportation and travel.

The survey included 36 questions focused on analytics strategy, organization, data, models and tools, and value assurance, with an emphasis on diagnosing the challenge of last-mile delivery of analytics at scale. The questions were adapted from McKinsey's Analytics Quotient, which is an objective and comprehensive assessment of a company's analytics maturity along key dimensions that drive financial performance.

To analyze the data, we identified five indicators as proxies for successful analytics programs at scale. These included analytics spend as a percentage of IT spending; satisfaction with return on investment (ROI) on analytics; level of impact aspired to; length of analytics journey; and spend on embedding as a percentage of analytics spend. We supplemented this with financial data—for example, three-year and five-year averages of total returns to shareholders (TRS)—from a third of the companies. We created a composite score for each company from these metrics, which showed a positive correlation with average TRS, adjusted for industry effects. We then performed a k-means clustering across the full data set for all questions. These analyses revealed a breakaway “best-performing” cluster of companies, which demonstrated superior performance in the majority of the remaining variables.

“About the research,” for more on the study methodology.) These drivers fall into three main categories: strategy, foundational capabilities, and activities geared toward the last mile of embedding analytics into the fabric of the organization.

What surprised us was not necessarily the small size of this breakaway group or even their practices but how wide the divide was between them and the rest of the pack.

Aligning on strategy

To get the most from their analytics investments, organizations need to plug analytics into the critical strategic areas of the

company, which are typically those that cut across business functions, such as customer experience.

One large US company did not learn this lesson until three years into its analytics journey. It had hired large numbers of data scientists and launched more than 50 pilot projects to test new capabilities. While the company had success in some areas, not one of those pilots was successfully scaled across the company. Its analytics team was working on an island, with no connection to cross-functional business strategy, and, as a result, produced limited impact.

Adopting analytics across all lines of business and functions requires a clear, coordinated strategy and focused investment.

Driver #1: Obtaining a strong, unified commitment from all levels of management

Companies in the breakaway group are twice as likely as their peers to report that their leadership team is completely aligned on an analytics vision and strategy (Exhibit 2). Within these companies, senior leadership has set the clear goal of integrating analytics not just into certain business units and functions but across all operations. As a result, breakaway companies are 3.5 times more likely than their

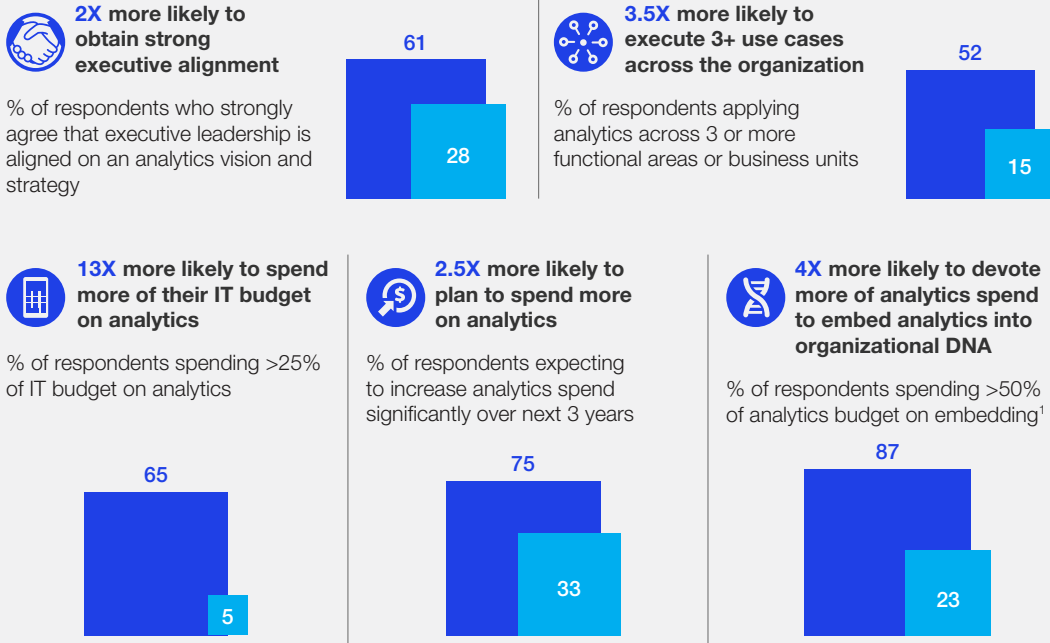
peers to be applying analytics to three or more functional areas.

This level of commitment starts at the top, but it must also reach deep into the organizational structure. One major US bank cultivates this type of focus by making analytics expertise a requirement for business leadership positions—not just the C-suite but the entire management team, a group that includes hundreds of executives.

Breakaway companies also understand the importance of securing buy-in even further down the corporate ladder. Fifty-seven percent

EXHIBIT 2 Breakaway companies set a sound strategy for scaling analytics.

■ Breakaway companies, as compared to ■ remainder:



¹For example, integrating analytics into workflows.

Source: McKinsey analysis

of the breakaway group report that their middle management fully believes becoming an analytics-driven organization is imperative to staying relevant and competitive, a figure nearly twice that of other respondents.

Driver #2: Increasing analytics investments, with a focus on the last mile

Breakaway companies spend more than other organizations on analytics, and they plan to increase these investments further. Two-thirds of breakaway companies (versus only 5 percent of other respondents) already spend more than 25 percent of their IT budgets on analytics, a category that can include a long list of analytics-related expenditures such as data, technology, analytics talent, and embedding analytics into business-process workflows. And the breakaway group intends to double down by increasing that funding significantly in the future, with 75 percent reporting plans to boost their analytics spending, compared with only 33 percent of other respondents planning to do so.

Most important, breakaway companies target much of this spending toward the biggest challenge companies face in extracting value from analytics—the last mile, or embedding analytics into the core of all workflows and decision-making processes (more on this later). Nearly 90 percent of breakaway organizations devote more than half of their analytics budgets to this effort, versus only 23 percent of all other organizations that do so.

Building the right foundations

Breakaway companies outperform other respondents in establishing the building blocks of effective analytics, including data, processes, technologies, and people.

Driver #3: Developing a clear data strategy with strong data governance

Breakaway organizations are 2.5 times more likely than their peers to report having a clear data strategy and twice as likely to report strong data-governance practices that allow them to identify and prioritize data (Exhibit 3).

We find that the most successful data strategies include four key elements:

- A clear data ontology based on both current and projected use cases.
- A corresponding master data model across key domains (for example, customer, product, location, employees), with established business ownership for how they are addressed.
- Governance plans that clearly establish who is accountable for the quality and maintenance of each data set and that segment the data sets into hierarchical categories, understanding that not all data receive “first-class” treatment. For example, the mission-critical data, such as personal health records for healthcare payors and providers, are stored in the highest-quality and most easily accessible system. The next level of data (for example, those highly applicable to specific functions such as marketing) includes highly curated data sets for analytics and does not have the same level of rigorous governance. Everything else is stored in the cheapest possible manner to minimize overall costs.
- A complete understanding of and plan for the technical requirements of the data environments (for example, use cases might require a dynamic environment in which data

EXHIBIT 3

Strong foundational capabilities in data, analytics practices, and people enable breakaway companies to scale.

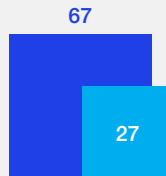
■ Breakaway companies, as compared to ■ remainder:



Data

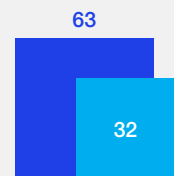
2.5X more likely to have sound data strategy

% of respondents who strongly agree that they have a clear data strategy to support their analytics strategy



2X more likely to have strong data governance

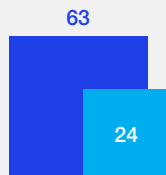
% of respondents who strongly agree that their data-governance practices allow them to identify and prioritize their most important data



Analytics methodologies

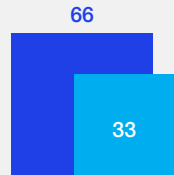
2.5X more likely to have clear methodology

% of respondents who strongly agree that they have a clear methodology for development of models, interpretation of insights, and deployment of new capabilities



2X more likely to use challenge and test system

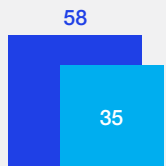
% of respondents who strongly agree that they have a system to continually challenge and test quality and performance of analytics models



Talent and organization

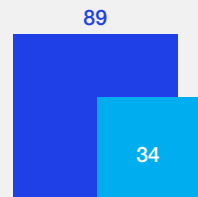
1.5X more likely to have deep data and analytics expertise

% of respondents who strongly agree that their company has deep functional data and analytics expertise



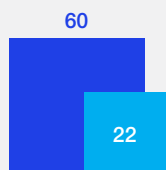
2.5X more likely to employ more data and analytics talent

% of respondents with more than 25 data and analytics professionals per 1,000 FTEs¹



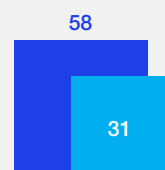
3X more likely to have well-defined analytics roles and career paths

% of respondents who strongly agree that they have a clear center of gravity for analytics talent, with well-defined roles and career-development paths



2X more likely to use cross-functional, agile teams

% of respondents who strongly agree that their analytics operating model revolves around cross-functional teams



¹Full-time equivalents.

Source: McKinsey analysis

are automatically and continually updated), including systems capable of moving data from one classification to another as their relative importance fluctuates over time. For example, for an insurer, data on catastrophe modeling might not always be mission critical but would likely rise to that level in the face of an oncoming storm or wildfire.

Driver #4: Using sophisticated analytics methodologies

Breakaway companies are 2.5 times more likely than other respondents to have a clear methodology for developing analytics models, interpreting insights, and deploying the new capabilities that they build.

We find that companies with leading analytics programs not only focus on model development through their methodologies but also work to continuously maintain and upgrade models as part of a sophisticated model-management function. Many breakaway companies constantly test and upgrade the quality and performance of analytics models using a challenge and test approach that pits existing data sources and algorithms against new and potentially better alternatives. Breakaway companies are twice as likely as others to employ this approach.

Breakaway companies are also more likely to use sophisticated analytics techniques, such as reinforcement learning and deep learning, which can provide a substantial lift in value over using more traditional analytics approaches. McKinsey Global Institute research shows, for example, that using more sophisticated deep-learning techniques for next-product-to-buy recommendations can potentially double the value they provide.²

Driver #5: Possessing deep analytics expertise enabled by a tailored talent strategy

Breakaway companies are 1.5 times more likely than their peers to have deep functional expertise in the areas of data science, data engineering, data architecture, and analytics transformation. In purely numeric terms, they are 2.5 times more likely than other companies to employ more than 25 analytics professionals per 1,000 full-time equivalents (FTEs). This difference is even more dramatic among respondents in certain industries. For example, breakaway retail companies are seven times more likely to have 50 or more analytics professionals per 1,000 FTEs (the industry average is closer to 20 per 1,000 FTEs) than the rest of retail respondents.

Breakaway companies obtain this expertise with strategies to attract and retain the best analytics professionals that go far beyond compensation. Companies in the breakaway group, for example, are three times more likely than their peers to establish a clear core center of gravity of analytics talent in their organizations. With a leader who has a seat at the executive table, such as a chief analytics officer, and a surrounding group of like-minded peers, analytics professionals are more likely to feel that they are integral to the company's organizational goals—and they will also be best positioned to help the organization achieve them.

Breakaway companies also source and keep scarce talent by creating well-defined roles and career paths that are specifically designed for analytics professionals, as opposed to being retrofitted from other roles in the organization. Some companies have created

² See “Visualizing the uses and potential impact of AI and other analytics,” McKinsey Global Institute, April 2018, on McKinsey.com.

dual career tracks (for example, technical and managerial) and rotational programs that cycle analytics talent through both business and technical roles.

Many companies successfully scaling analytics have focused on developing integrated analytics talent strategies that span their businesses. They have created analytics innovation centers near research and entrepreneurship talent markets, recruited tech and analytics executives in key management roles, developed analytics career paths, and assigned analytics talent to projects that excite them most. Senior executives have enlisted managers from across their companies to integrate analytics and analytics professionals into key areas of their businesses.

Driver #6: Creating cross-functional, collaborative agile teams

Breakaway companies create collaborative cultures that foster innovation and propel analytics initiatives throughout the organization.

Nearly 60 percent of breakaway organizations use cross-functional teams, versus less than a third of the remaining respondents that do so. These teams are made up of highly committed business representatives, analytics translators, user-experience design experts, data engineers, and data scientists who are often encouraged to work together in agile teams. And the diversity of their membership helps mitigate the risk of creating another isolated silo (such as design, digital) as the company builds its analytics capabilities. The result: high-impact, end-to-end analytics use cases.

Conquering the last mile by embedding analytics into decision-making processes

The biggest challenge in any organization's analytics journey is turning insights into

outcomes—what we call the last mile, which is where the value of analytics is ultimately extracted.

Embedding is the key to conquering the last mile. It's a two-step process: first, organizations must make analytics extremely user-friendly and customized for each group making priority decisions (for example, store managers, clinical laboratory specialists). This requires a combination of the right technical tools (for example, API-enabled middleware) and support tools such as intuitive dashboards, recommendation engines, and mobile apps. It also often requires obtaining design talent and capabilities not typically found in analytics departments or elsewhere in the company. Second, and often more challenging, companies must embed analytics-based decision making into the corporate culture, creating an environment in which workers embrace analytics as an essential tool that challenges established thinking and augments their judgment.

Without completing the last mile, analytics investments can go to waste. For example, a large US financial-services company made a significant commitment to analytics for fraud detection. It had been working on its analytics capability for several years, made sizable investments, and deployed some 1,500 analytics professionals in a center of excellence. The analytics were performing well, picking up several telltale signs of fraud in online forms, including the speed at which product applications were filled out, the time of day the applications were submitted, and even the lack of capitalization of names. However, the company was not seeing significant changes in outcomes initially. The reason: even though it had world-class fraud-detection algorithms, it had not created the processes to integrate these insights into the day-to-

day work and decisions of its employees on the front line (for example, customer-service representatives or credit underwriters) in order to prevent fraud.

Although breakaway companies have not entirely mastered embedding, they are well ahead of the field due to their success in the following areas.

Driver #7: Prioritizing top decision-making processes

In every organization, thousands of decisions affect business outcomes every day. Any and all of these could be informed by data insights. To achieve meaningful impact with analytics, breakaway companies prioritize and then map the decisions that will drive the most value by being addressed with “right-time” data insights. This endeavor is not unlike the business-process-reengineering wave that swept the

corporate world in the 1980s and 1990s. We’re essentially seeing an evolution of the science of decision making.

To some extent, it’s not the process these companies use to prioritize decisions that’s important—it’s the fact that they are prioritizing decisions at all. While prioritization might seem like job one, breakaway companies are almost twice as likely to have identified and prioritized the top ten to 15 decision-making processes in which to embed analytics (Exhibit 4).

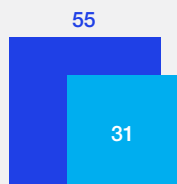
One global cruise company provided precisely this type of strategic direction by deciding that its analytics initiative would be anchored in the customer experience. By prioritizing and embedding analytics into critical decisions affecting the customer experience across its multiple brands, the company could deliver data-informed travel packages to customers,

EXHIBIT 4 Breakaway organizations are closer to completing the last mile.

■ Breakaway companies, as compared to ■ remainder:

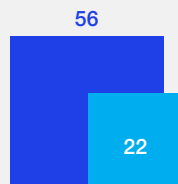
2X more likely to prioritize top decision-making processes

% of respondents who strongly agree that they have clearly prioritized the top 10–15 key decision-making processes in which to embed analytics insights



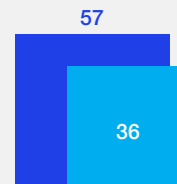
2.5X more likely to establish decision-making rights and accountability

% of respondents who agree that their organization has established clear accountability and decision rights by role and a clear process for escalation in the organization



1.5X more likely to achieve quick, continually refined decision making

% of respondents who strongly agree that their organization makes decisions quickly and continually refines its approach as it learns more



Source: McKinsey analysis

personalize guest experiences based on documented customer preferences, optimize pricing across its fleet of ships, and even enhance the scheduling of its routes based on consumer buying patterns.

Driver #8: Establishing clear decision-making rights and accountability

Another part of completing the last mile is making clear who in the organization is empowered to make particular analytics-based decisions on a day-to-day basis—as well as holding business-unit leaders accountable for making sure that their team members have the tools they need to do so. Breakaway organizations are more than twice as likely as other companies to agree with the statement, “Our organization has clear accountability and decision rights by role, with most decisions made at the working-team level, and a clear process for escalation in the organization.”

One consumer-goods company provides a good example of how a lack of accountability can sabotage success with analytics. Its regional business heads derailed an expensive and well-designed analytics program funded by corporate by simply ignoring it.

We find that the analytics vision set out by the C-suite, and the CEO in particular, must be not only clear but also motivational in order to spur buy-in from business heads and others further down the corporate ladder—particularly the ever-critical middle management.

One visionary leader motivated management at an oil and gas company by providing a level of autonomy to members of the group. A new technology and analytics team of 30 people was established and tasked with simply using analytics to improve business performance—the team could select the first use cases. The

managers chose two oil-platform quality and safety use cases. In just one year, the team built a data platform and machine-learning capability that helped decrease accidents. Excited by the improvements, dozens of additional employees became part of the team that would enable the next set of analytics use cases.

Driver #9: Empowering the front lines to make analytics-driven decisions

Getting management on board is only part of the battle—to turn analytics insights into outcomes, organizations must ultimately enable frontline employees to easily leverage analytics to make decisions. Breakaway companies are about 1.5 times more likely than other respondents to report that their organizations have achieved quick, continually refined decision making through analytics, one of the keys to the last mile.

Here is one example of what this allows companies to achieve: a major retailer saw a significant increase in sales by delivering demographic data on customers to store managers on a daily basis and empowering them to act on the insights the data provided (for example, penetration and shopping frequency by demographic segment in the trade area of the store).



Companies of all industries and sizes can upgrade the scope and impact of their analytics by applying the lessons from our breakaway companies in each of these nine areas. However, the most important takeaway from this research might be found in the one area in which even some breakaway companies are still falling short: bridging the last mile.

Most companies start their analytics journey with data; they determine what they have and figure out where it can be applied. Almost by definition, that approach will limit analytics' impact. To achieve analytics at scale, companies should work in the opposite direction. They should start by identifying the decision-making processes they could improve

to generate additional value in the context of the company's business strategy and then work backward to determine what type of data insights are required to influence these decisions and how the company can supply them. In other words, the last mile should be the starting point of the analytics journey. ♦

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The authors wish to thank Nila Bhattacharyya, Laura DeLallo, Clarice Lee, and John Saunders for their contributions to this article.

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