

UNCOVERING THE KEYS TO BECOMING TRULY ANALYTICS-DRIVEN

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What is keeping organizations from effectively using analytics?

Now more than ever, organizations across industries are leveraging analytics to make more informed strategic decisions and reduce the uncertainty that accompanies innovation. A robust analytical approach is quickly becoming table stakes for companies to remain competitive. Yet simply having analytics capabilities is not the same as using them successfully—in other words, driving business value.

According to research by Harvard Business Review Analytic Services, only 18% of business leaders across industries said their organizations are getting a sufficient return on their investment in analytics. This report digs further into the reasons why, as well as the best practices of companies already excelling in this area.

This report also uncovers the common roadblocks to using analytics effectively, including:

Communication of results and integration into decision making. One common obstacle to driving business value through analytics stems from a failure to establish a standardized analytics process. If analytics are not institutionalized as a part of decision-making processes, results will not reach the right stakeholders, making it impossible to influence strategy. Further, a key component of any standardized analytics workflow should be effectively communicating results to the leaders who will be shaping strategy, and leveraging the tools and platforms that produce business-focused results to facilitate this.

Skills to interpret and apply analytics in business contexts. Depending on the organization, there may be no shortage of technical skills—among technical staff. But what about the business side? If business staff fall short in the skills to interpret analytics results, their ability to apply valuable analytic insights to critical business decisions will be limited. One approach many organizations are adopting is implementing business user-friendly analytical tools that don't require a Ph.D. in statistics to use.

Siloed analytics and competing results. Challenges also arise when analytics are conducted in departmental silos. Without a standardized analytics process across the organization, different teams use different methodologies to answer their business questions. This fragmented approach can produce conflicting results, making it difficult for decision makers to understand which answer is the “right” one, and restricting their ability to take action.

Time lag. If data-driven insights are not available at the speed of decision making, they will not be taken into account. Democratizing data access to provide teams with the insights they need to conduct analyses and inform decision making in real time is one critical step to solving this problem. Organizations must strategically align their analyses with key business questions and priorities, to ensure they are applying their analytics capabilities where they will drive the greatest impact.

Based on global client engagements across industries, we at Mastercard have seen that business-focused, easy-to-interpret analytics outputs are critical to inform decision making. Our real-time, anonymized, and aggregated transaction data, combined with our sophisticated analytics capabilities, empowers organizations to distill timely, actionable insights to shape strategy. For leading organizations, adopting a platform approach is increasingly common. Leveraging a software platform that is both analytically robust and simple to use allows companies to increase speed to insights. This ensures that organizations do not just arrive at the right answers, but uncover insights in time to communicate them with the right stakeholders and truly drive impact.

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EXECUTIVE SUMMARY

Enterprises of all kinds have invested in analytics to improve decision making and outcomes across the business—from product research and innovation to supply chain, customer experience, and risk management.

But many executives believe that their analytics initiatives and investments aren't yet paying off as they should—and the roadblocks to success often lie within their own organization's processes and practices.

In a new survey of 744 business executives around the world and across a variety of industries, conducted by Harvard Business Review Analytic Services, less than one-fifth (18%) of the respondents said their organizations are getting a sufficient return on their investment in analytics.

This dissatisfaction with the performance of analytics initiatives tied back to a number of challenges: 1) ineffective deployment and distribution of analytics outputs across the organization; 2) analytics that are not integrated into workflows, and decision processes that do not reach decision makers; 3) inadequate skills for interpreting and using analytics among business staff; and 4) siloed analytics that produce competing results.

And despite their access to huge amounts of data, few described their companies as “data-driven.” Only 27% of respondents agreed or strongly agreed that their executives consistently used analytics in strategic decision making. And even fewer (15%) agreed or strongly agreed that people in the organization relied on analytics insight when it contradicted “gut feel.”

But there was one group in the survey—18 percent—who described themselves as highly successful in gaining return on analytics investments. These leaders reported they were getting real business value by using analytics to reduce costs and risks; increase productivity, revenue, and innovation; and execute strategy.

Respondents from these companies, when compared with those from other organizations in the survey who said they are very dissatisfied with the performance of their investments, could outline how they established the conditions for analytics success. More than two-thirds of these leaders rated themselves as highly successful in generating analytics, putting them to business use, and driving business value. They deploy analytics more pervasively in the organization. **FIGURE 1** And their business users and their analytics experts work more collaboratively. They also use analytics more consistently in decision making: Sixty-three percent of them said that analytic insights overrule “gut feeling” in making a strategic call.

WHAT SETS APART ANALYTICS LEADERS FROM LAGGARDS

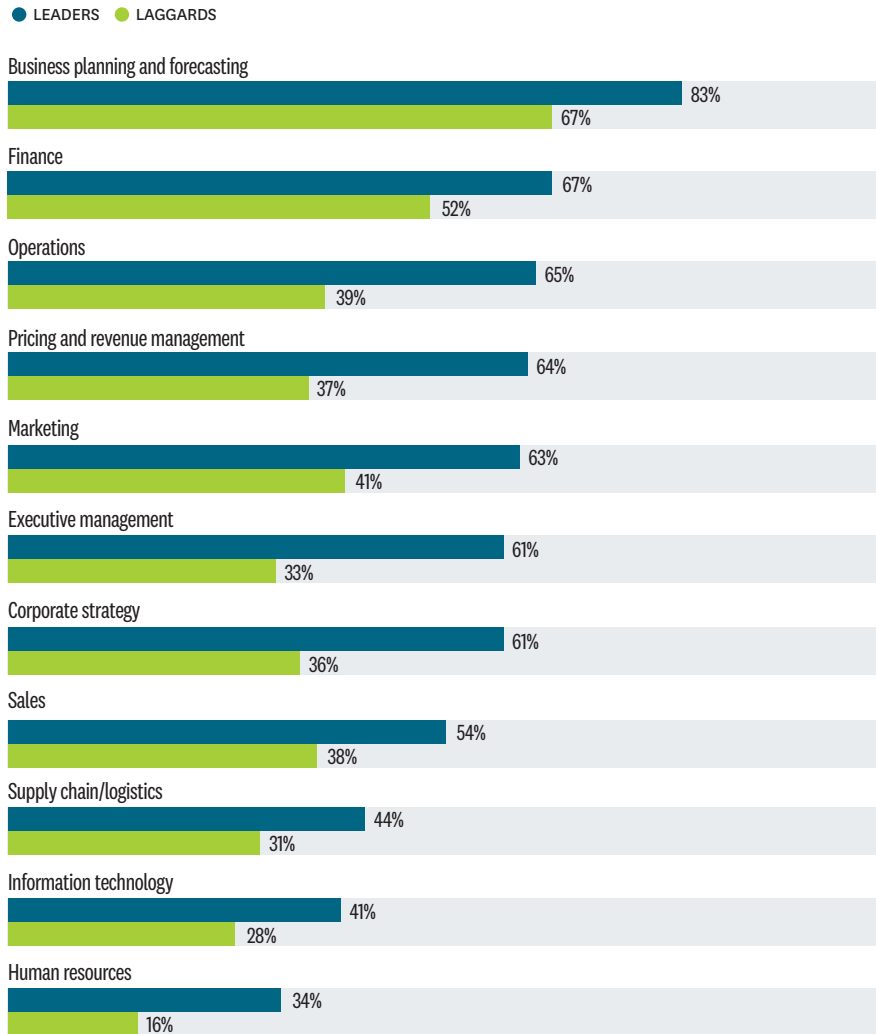
- Build the organizational culture around analytics, with executive leadership displaying commitment to data-driven decision making.
- Ensure that analytics are deployed throughout all the core functions of the business and well-integrated into the workflow.
- Develop strong analytical skills inside the organization, and encourage strong collaboration between business users and analytics experts.
- Create strong metrics for analytics success, and develop a test-and-learn culture.

FIGURE 1

LEADING ORGANIZATIONS USE ANALYTICS MORE Pervasively THAN LAGGARDS

Areas in which organizations regularly use analytics to guide important decisions

[RESPONDENTS SELECTED ALL THAT APPLY]



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, MARCH 2018

STAGES OF ANALYTICS

Descriptive: Analytics identifying and describing what is currently happening

Predictive: Analytics that predict what is likely to happen in the future

Prescriptive: Analytics that recommend what action to take next

As analytics adoption becomes more widespread than ever, this research takes a look at the “performance gap” between companies that have struggled to get a return on their analytics investments and those that have effectively leveraged their investments. It looks at how different organizations have deployed analytics, the barriers they have encountered, and how leading companies establish the processes and organizational conditions for success.

Deploying Analytics Throughout the Organization

Although many of the organizations in the survey said they faced challenges in leveraging their analytics investments, most reported that they deploy analytics in a growing number of business functions.

More than three-fourths of the companies use analytics in business planning and forecasting, where the need for objective prediction is central. Half or more of respondent organizations use analytics in finance, marketing, operations, and strategy. Thirty-eight percent use analytics in supply chain and logistics. Analytics were the least in use in information technology (30%) and human resources (24%).

Only a slight majority (56%) of respondents said their organizations often or always use analytics to support and improve business operations, and fewer than half (48%) said that analytics support strategic objectives and implementation projects. Two-thirds said that their organizations’ analytics are often or always descriptive, while many fewer, slightly more than one-third, have more advanced predictive and prescriptive analytics in regular use. And more than half of organizations have analytics activities scattered in local pockets across the organization, making it very difficult for the enterprise to coordinate strategies, priorities, or investments. All of this suggests there is plenty of space to increase the impact of analytics on the business in most organizations.

But here is where the companies that describe themselves as highly successful in recognizing return on investment—this report describes them as “leaders”—stand out.

These organizations have significantly more pervasive use of analytics—across functional areas and at all levels of their hierarchy—and more use of advanced predictive and prescriptive analytics. Eighty-four percent of these companies’ respondents reported that analytics are embedded in core business processes, compared with just 16% of those companies—this report describes them as “laggards”—who said they are very dissatisfied with the performance of their investments.

And in the leading organizations, executives reported use of analytics-insights versus gut feel in decision making much more often: Eighty-one percent compared with 42% of the laggards. Laggards were 10 times more likely to say that decision makers choose gut feel over analytics. Leaders make more decisions and take more actions based on insights derived from data and are reaping the benefits.

Commitment to analytical insight is a major focus for Singapore Airlines, where analytics is seen as a strategic driver for the business, says Campbell Wilson, senior vice president of sales and marketing for Singapore Airlines.

With its commitment to the highest standards of service, the company is the most-awarded carrier in the world. Its high standards and ambitions extend to how it leverages analytics. “We want to be the most digital and most personalized airline,” said Wilson. “That means understanding customers, anticipating what they might like, and perfecting the delivery mechanisms, both customer-facing and behind the scenes.”

The airline has long been leveraging analytics in engineering, flight operations, pricing and revenue management, fuel and other asset management, hiring and promotion, and customer affairs. Today in the organization, analytics are also used to test and take strategic actions that had not been previously considered.

For example, it was a long-held assumption that the availability of one-way fares should be limited to avoid cannibalization of round-trip revenue. A controlled “test and learn” (small) experiment with 14 test routes and a control group proved otherwise, sending millions of dollars to the bottom line. Other experiments are revealing ways to simultaneously customize services and raise revenue.

“There may have been long-standing debates around specific decisions, but when the analysis is conclusive, there’s no pushback. The organization is always ambitious to improve. Our challenge today is to get the test-and-learn approach into the DNA of all our business divisions,” Wilson said.

“Test-and-learn disciplines can make the analytics development process more participative and the results more definitive—thus facilitating deployment and motivating adoption,” said Thomas Davenport, President’s Distinguished Professor of Information Technology and Management at Babson College.

Many of the companies in the survey said that adoption demanded a culture shift. Among the key drivers of analytics adoption, companies said, are the need for an organizational commitment to leveraging data and analytics (41%), the need for executive leadership (40%), and a strategic ambition for using analytics (39%).

Michael Schrage, a fellow at MIT’s Center for the Digital Economy, concurs. “The real challenge,” he said, “is accepting the organizational reality that new analytics often require new behavior.”

“Companies that are most successful with leveraging analytics recognize the need for executives to have a strategic plan in place,” said Davenport. “Unfortunately, there’s a big gap between best deployment practices and the ad hoc approaches in the average company today,” he said.

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Using Analytics More Consistently in Decision Making

The industries that are both consumer focused and rich with data—retail and financial services—reported some of the best results with analytics, with retail citing the most benefits overall.

Financial services industry respondents scored their organizations highest at generating analytics and realizing benefits in revenue growth and risk reduction. Health care respondents reported close links between analytics and strategy execution. Energy/utility/telecommunications companies are in the middle of the pack in terms of benefits cited, while manufacturing sector companies are lagging.

Overall, more than half of respondents (54%) said the greatest obstacle to analytics success was that analytics are not integrated into workflows and decision processes or do not reach decision makers. Many also complained of ineffective deployment and distribution of analytics outputs (38%) and said that analytics developed in organizational silos produce competing results (41%). [FIGURE 2](#)

The survey found that in every company, high-ranking executives have more access to analytics outputs and make more use than others. Fifty-nine percent of those in executive management use analytics regularly or often. Among functional and departmental management, 56% are frequent users of analytics, and at the manager/supervisor level it drops to 42%.

But in most companies, there is a huge gap in the use of analytics among frontline employees, who are often customer-facing. Overall, only one-quarter use analytics, with only 7% using analytics regularly.

Among the leaders, frontline workers are acting more frequently on insights from data versus laggards by a margin of 47% to 12%.

“The lack of analytics on the front line is a stumbling block for companies as they strive to become more customer-centric, improve the customer experience, and market more efficiently and effectively,” said Davenport. “As jobs require more direct use of data and advanced analytics, frontline people need analytical skills and technology to interact effectively with customers. But that’s happening very slowly, and most organizations are behind the curve. Modeling is getting easier and more automated all the time, but deployment is always a challenge.”

Primary Barriers to Analytic Success

Data quality and difficulty accessing data were identified as the survey audience’s biggest obstacles, followed closely by lack of effective and standardized processes for generating analytics. [FIGURE 3](#) Laggards suffer the most, with data quality at 48% versus just 27% for leaders. Additionally, 46% of the laggards reported a lack of standard process around analytics, compared with just 26% of the leaders. Democratizing the data necessary for business-use-cases within a common, easy-to-access platform is one approach some organizations are taking to address these challenges.

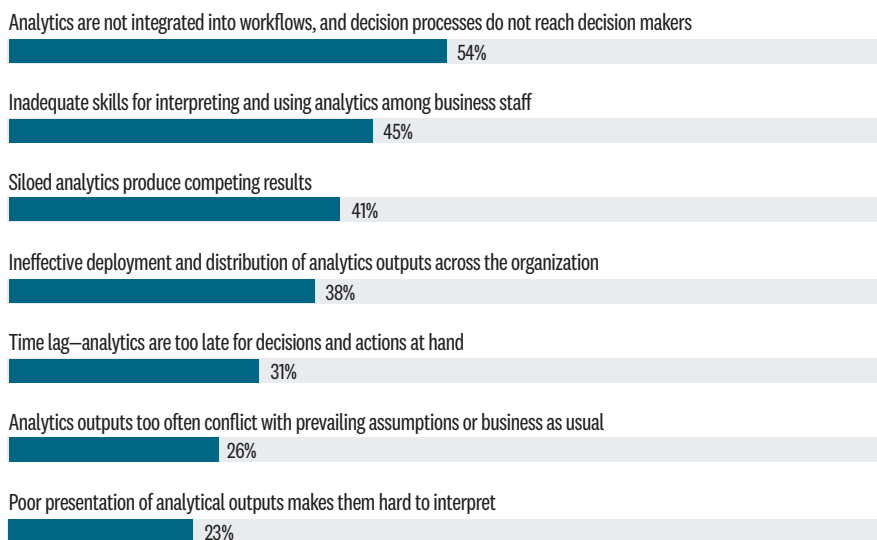
Companies at all levels of analytics success also reported concerns about

FIGURE 2

CHALLENGES TO LEVERAGING ANALYTICS

Percentage of significant challenges to effectively using analytics in respondent’s business

[RESPONDENTS SELECTED UP TO 4 CHALLENGES]



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, MARCH 2018

having the right analytical skills: Forty-five percent of all companies said inadequate analytical skills among businesspeople presents a major obstacle. A good gauge of those skills is people's ability to work with data and develop basic analytics independently. When asked whether businesspeople are self-sufficient with analytics, some 27% of respondents agreed, while 58% disagreed. Among leaders, that self-sufficiency was rated much higher, as 48% agreed.

Leaders in this survey have mastered one challenge that allows them to use analytics more successfully than most. While only 23% of all respondents said that they can effectively measure the impact of analytics on the key performance indicators of the business, 63% of leading companies said they can. With good metrics, these companies were better able to tell which initiatives were working in the business and which were not, and quickly adjust course.

“Successful companies are more confident in their analytics investments because they're more disciplined in measuring returns. They've learned how to succeed,” said Davenport.

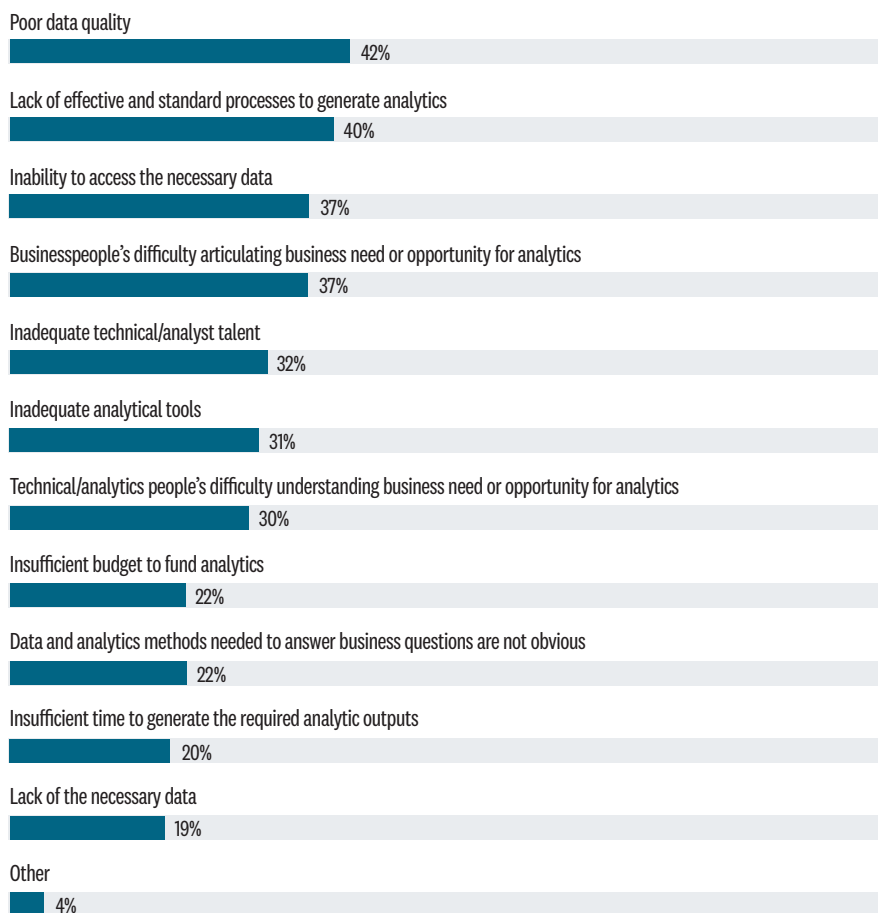
One enterprise that has learned to measure and succeed is Bank of Montreal. The retail banking sector has faced challenges adjusting to digital trends. To help the company evolve, Bank of Montreal has invested heavily in data and analytics around understanding and anticipating customer journeys—leveraging actual behaviors across the channels of bricks and clicks. Payback periods of these initiatives are under a year, and their overall return on analytics investment exceeds 300% year over year, according to Lori Bieda, who heads the Analytics Centre of Excellence, Personal and Business Bank.

Bank of Montreal can measure return because the analytics group has implemented standard measurement and more recently, a test-and-learn process and discipline. With this approach, organizations can run business experiments to test ideas with a small number of locations or

FIGURE 3

OBSTACLES TO GENERATING ACTIONABLE INSIGHTS WITH ANALYTICS

Percentage of the most significant obstacles to generating actionable analytical insights for the business [RESPONDENTS SELECTED UP TO 4 OBSTACLES]



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, MARCH 2018

customer segments to measure impact. This is especially important in the domain of customer experience, where there is so much data and so many potential hypotheses to test.

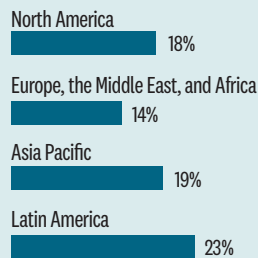
To truly capitalize on the customer journey, the Bank of Montreal started with their foundation of customer journey analytics, but quickly realized they needed to operate more cross-functionally. “Insights are the easy part, but you have to take rapid action on them to gain competitive advantage,” said Bieda.

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A WORLD OF ANALYTICS

The struggle to find return on analytics investment is consistent across the globe, with fewer than one-quarter of companies in any region achieving full ROI.

Respondents Getting Full ROI from Analytics



SOURCE: HBR ANALYTIC SERVICES, MARCH 2018

In terms of business benefits received from analytics, only a range of one-fifth to one-third of companies per region report they are receiving benefits at a significant level. The survey revealed some variation by region, with improved decision making the number one benefit in North America (NA) and Europe, Middle East, and Africa (EMEA), while increased productivity and reduced cost were highest in Asia Pacific (APAC) and Latin America.

Respondents in EMEA reported the most regular use of analytics at both executive and departmental levels. Analytics are also in widespread use in NA, but less so in APAC and Latin America. Respondents in APAC, however, cited the greatest organizational commitment to using analytics.

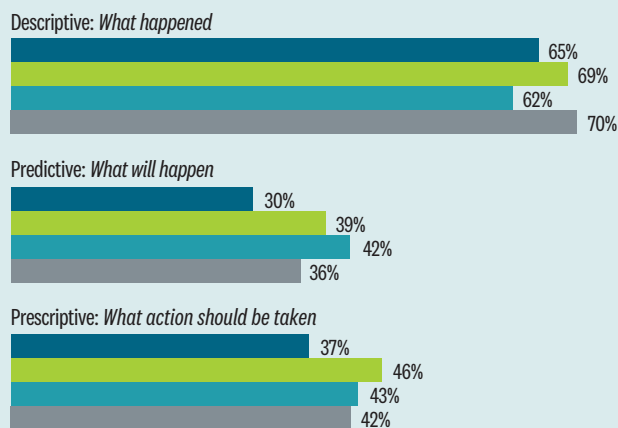
And while descriptive analytics were by far most prevalent, predictive, and prescriptive analytics are currently in use throughout the world, with NA lagging other regions of the world.

The survey also found some differences by region in the perceived challenges for analytics. Survey respondents in NA most often cited as obstacles the processes for generating analytics, distributing and deploying them, and integrating them into business workflows and decisions. EMEA respondents expressed the greatest need for more analytical skills among businesspeople. Those in APAC placed the most emphasis on the need for quality data, better technology platforms, and more executive leadership. And those in Latin America were more likely to cite a lack of analyst talent and time lags in delivering analytics. [SEE BELOW](#)

Analytics Maturity by Region

Percentage of organizations by region leveraging each type of analytics

● NORTH AMERICA ● EUROPE, THE MIDDLE EAST, AND AFRICA ● ASIA PACIFIC ● LATIN AMERICA



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES, MARCH 2018

That requires getting analytics into the workflows of decision makers and raising the skills and “analytics IQ” across the business—a major concern of most of the companies in the survey. So Bank of Montreal’s Analytics Centre of Excellence has created an Analytics University with curriculum targeted at improving the technical, business, and soft skills of analytics professionals—and the teams who engage regularly with them. This is aimed at helping to create an analytical, test-and-learn-based organization, furnished with people who have the proper knowledge and skills to drive analytics-based decisions each day.

Varying challenges were reported by industry. The retail industry most often cited the need for better technology platforms and more analytical skills in the business.

Healthcare respondents reported difficulty with data for analytics, while financial services respondents were most likely to cite the problem of siloed analytics producing competing results, an issue the Bank of Montreal is attempting to address with its Centre of Excellence for analytics.

Telia, a leading telecommunications carrier across Scandinavia and the Baltic States, faces similar challenges. Wasim Rashid, head of product, platform, and data insights, explains that the company has grown by acquisition and faces the associated challenges—siloed data, a variety of vendor platforms, and uneven levels of analytical orientation and skill across the organization. Ongoing projects have data and platform teams rationalizing the infrastructure.

The company is learning valuable lessons to apply in putting data and analytics to broader use in internal business processes and decisions. “Our top priorities include better organizing data assets, forming data insight groups in key business functions, and building analytical competence within business units,” Rashid added.

Encouraging Executives and Analytics Experts to Partner

When participants were asked to rate their overall “customer experience” as users of analytics inside their companies, only 41% said they were satisfied or somewhat satisfied. **FIGURE 4** That distribution marks a sharp divide between organizations succeeding with analytics and those struggling to do so. And it also highlights differences in the way that the leaders and laggards structure the work of analytics in their organizations.

The survey population had a mix of managers and executives who said they are primarily consumers of analytics (60%) and those who are primarily developers of analytics for others to use (40%). (Note that only 13% of these developers were part of the analytics function, and only 22% described themselves as technology focused. Thus, the sample included many managers generating analytics and doing analytical work within business functions.)

Those on the analytics developer side reported a consistently more positive view of their organizations’ ability to put analytics to work. They see analytics in broader and more strategic use, and they are more positive about the organization’s commitment to leveraging analytics. The business users described analytics being used most across the ranks of senior management. More developers (46%) were satisfied with their analytical experience than were business users (37%).

In terms of obstacles to success, developers placed more emphasis on data issues, difficulty articulating analytics needs, and siloed analytics producing conflicting results. The business users placed more emphasis on the problem of integrating analytics into workflows and decisions, the processes for generating and deploying analytics effectively, and the need for better technical analytics talent.

View from the Top and Below

One striking difference emerged in the way that developers and business users work together. The organizations that reported the most success with analytics noted a great deal of collaboration between business and analytics teams: Eighty percent of leaders reported high collaboration, as opposed to 20% of laggards.

Another difference that emerged in all companies was a gap between executives and senior managers in terms of how they view analytics performance. Top executives across all companies gave higher marks for the value, performance, and use of analytics. The senior managers in between—vice presidents, directors, department heads—had the lowest estimation of the roles, effects, and value of analytics in their organizations.

Perspectives also varied widely on the barriers to success. C-suite executives most often cited lack of technical talent, and many were frank in admitting the need for more organizational commitment and executive leadership for analytics. Senior managers were more likely to cite the need for better data quality and better business strategy for analytics.

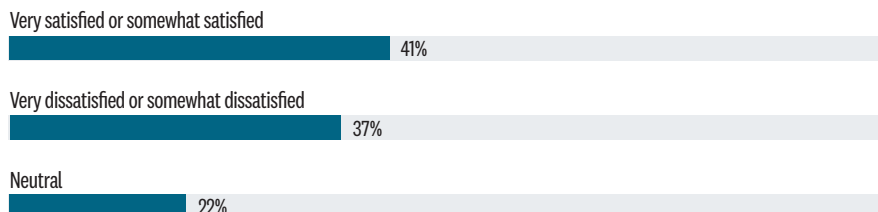
This suggests it may be difficult to create the organizational context for success with analytics when management isn’t aligned on what’s

ORGANIZATIONS THAT REPORTED THE MOST SUCCESS WITH ANALYTICS NOTED A GREAT DEAL OF COLLABORATION BETWEEN BUSINESS AND ANALYTICS TEAMS.

FIGURE 4

SATISFACTION WITH THE ANALYTICS EXPERIENCE

Respondents rating their overall “customer experience” as users of analytics



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, MARCH 2018

LACK OF MANAGEMENT ALIGNMENT MAY BE A MAJOR, BUT HIDDEN, BARRIER TO BUSINESS SUCCESS WITH ANALYTICS.

really happening with the business and what actions need to be taken to improve performance. Managers at all levels should be comparing notes on analytics usage throughout the organization and the perceived ROI. Lack of management alignment may be a major, but hidden, barrier to business success with analytics.

Driving Greater Return on Investment in Analytics

As companies are rapidly expanding their work with analytics throughout their organizations, this research reveals how successful companies have forged a path that can help other organizations evolve their analytic approach and focus on key areas for improvement.

Organizations that want to increase their return on analytics can focus on four interrelated initiatives:

- Build the organizational culture around analytics, with executive leadership displaying commitment to data-driven decision making and setting clear strategic and operational objectives for analytics.
- Ensure that analytics are deployed throughout all the core functions of the business and well-integrated into the workflow and daily practice for workers, including the front line.
- Develop strong analytical skills inside the organization, and encourage strong collaboration between business users and analytics experts.

- Create strong metrics for analytics success, and develop a test-and-learn culture that can make the analytics development process more participative and the results more definitive.

While every organization in this survey described stumbling blocks, the leading organizations had clearly established processes, practices, and organizational conditions for success. Their commitment to analytics is creating a major payoff from their investments—and a competitive edge.

METHODOLOGY AND PARTICIPANT PROFILE

Pulse survey of 744 executives and managers around the world and across a variety of industries. Seventy-one percent of their enterprises are multinational or global. All have annual revenues of at least \$250 million, and 77 percent have revenues over \$1 billion.

REGIONS

51% NORTH AMERICA	27% EUROPE, THE MIDDLE EAST, AND AFRICA	16% ASIA PACIFIC	7% LATIN AMERICA
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KEY INDUSTRY SECTORS

21% MANUFACTURING	20% FINANCIAL SERVICES	15% ENERGY/UTILITY/ TELECOM	14% HEALTH CARE/ PHARMACEUTICAL/ LIFE SCIENCES	9% RETAIL
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All respondents consider themselves knowledgeable or very knowledgeable about their organization's use of analytics. We also interviewed analytics leaders and experts to add field experience to our results and recommendations.

FEATURING INSIGHTS FROM:

LORI BIEDA HEAD OF ANALYTICS CENTRE OF EXCELLENCE, PERSONAL AND COMMERCIAL BANK GROUP, BMO FINANCIAL GROUP

THOMAS DAVENPORT PRESIDENT'S DISTINGUISHED PROFESSOR OF INFORMATION TECHNOLOGY AND MANAGEMENT, BABSON COLLEGE

WASIM RASHID HEAD OF PRODUCT, PLATFORM, AND DATA INSIGHTS, TELIA

MICHAEL SCHRAGE FELLOW, CENTER FOR THE DIGITAL ECONOMY, MIT

CAMPBELL WILSON SENIOR VICE PRESIDENT, SALES AND MARKETING, SINGAPORE AIRLINES



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CONTACT US

hbranalyticsservices@hbr.org