



Using Machine Data Analytics to Gain Advantage in the Analytics Economy

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About this paper

A Black & White paper is a study based on primary research survey data that assesses the market dynamics of a key enterprise technology segment through the lens of the “on the ground” experience and opinions of real practitioners – what they are doing, and why they are doing it.

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NEW YORK

1411 Broadway
New York, NY 10018
+1 212 505 3030

SAN FRANCISCO

140 Geary Street
San Francisco, CA 94108
+1 415 989 1555

LONDON

Paxton House
30, Artillery Lane
London, E1 7LS, UK
+44 (0) 207 426 1050

BOSTON

75-101 Federal Street
Boston, MA 02110
+1 617 598 7200

Introduction

Ever since software was first embraced by enterprises, businesses have been collecting data for a variety of benefits. Yet organizations are just beginning to realize the tremendous value of that data, particularly in a business intelligence context.

Companies have traditionally relied on employees to analyze enterprise application data for business intelligence, but they are increasingly looking to embed the results of analytics across many more of their business processes in order to drive data-driven decision-making. However, because the volume of data created and available for analysis has exploded in recent years, it has become increasingly difficult for human experts to identify the most valuable data on which to base their analysis.

The recent emergence of new technologies including self-service analytics, machine learning and automation heralds a revolution toward a concept 451 Research thinks of as pervasive intelligence, where businesses can use their data to insert intelligence across many more business processes – in fact, potentially across all business processes.

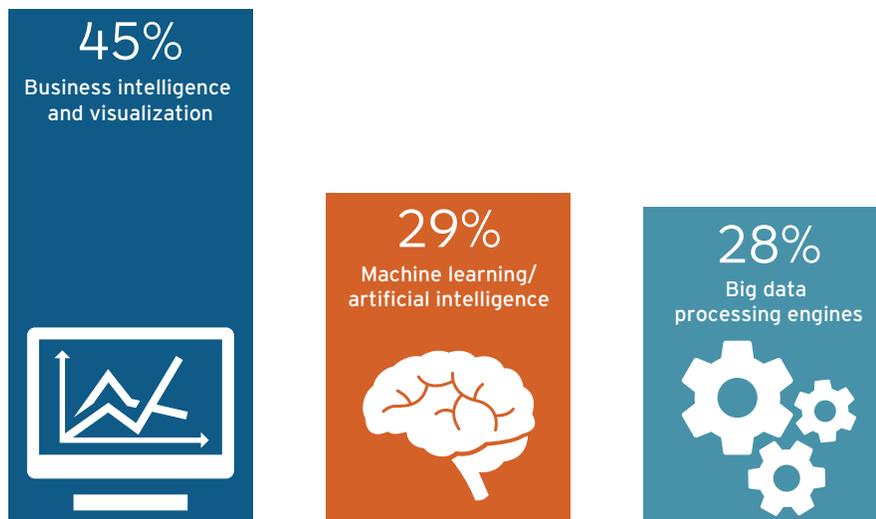
We believe that the time value of data is an important factor in achieving pervasive intelligence, enabling a kind of continuous intelligence that’s inserted throughout and across business processes. Many types of data have a shelf life, and the utopian scenario is to compress the time between collecting data and taking the right action to zero. Time becomes increasingly important in an era when customer experience is paramount and where customer loyalty depends on that experience. Intelligent data analytics has the potential to empower businesses to rapidly evolve products and services to meet their customers’ needs.

Businesses that are able to participate in this analytics economy – translating their data into valuable intelligence that gives them competitive advantage – will survive and thrive. Those that don’t will be left behind.

Many organizations recognize how crucial enterprise data is and plan to invest in capturing and analyzing it to drive their businesses forward. This is evidenced by 451 Research’s recent Digital Pulse survey where business intelligence was rated the top IT priority for 45% of respondents followed by machine learning and big-data processing.

Figure 1: Top three priorities for IT in 2018

Q: Are any of the following items top IT priorities for your organization in 2018? (Please select up to three.)



Source: 451 Research, Voice of the Enterprise: Digital Pulse, Budgets and Outlook 2017. N = 857

Today's software-driven businesses are awash in data that can be collected in big-data engines, analyzed using machine learning and surfaced to enable businesses to participate in the analytics economy. We believe that machine data is a critical source of data. It emanates from the many systems that complex businesses employ and has the potential to contribute to the pervasive intelligence that businesses need to thrive.

We set out to better understand the potential of machine data. Is machine data in fact an important source of fuel in the analytics economy? Do businesses recognize the role machine data can play in driving business intelligence? Are businesses that recognize the power of machine data leaders in their fields?

In Q1 2018, we surveyed 250 executives whose companies use machine data in some fashion. Some of the results of the survey surprised us – for example, companies are already using machine data analytics tools for many important business intelligence functions beyond those confined to the IT department. We also gained important insights into the shortcomings that are keeping some businesses from broader usage of machine data analytics. Finally, we discovered that modern businesses – those that have software-centric mindsets, as well as larger enterprises – are doing more than their less advanced counterparts to make the most out of the intelligence available to them in machine data analytics tools. In short, we learned that today's leading businesses recognize machine data analytics as key to helping them move faster, deliver top-notch customer experience and drive more intelligent decision-making.

WHAT IS MACHINE DATA?

Machine data is information that is generated from 'things,' delivering insight about processes and activities. Businesses collect machine data from devices such as servers, routers, applications and sensors in order to gain important insight about a range of issues – from whether the device is operating properly to how many end users are interacting with it.

Key Findings

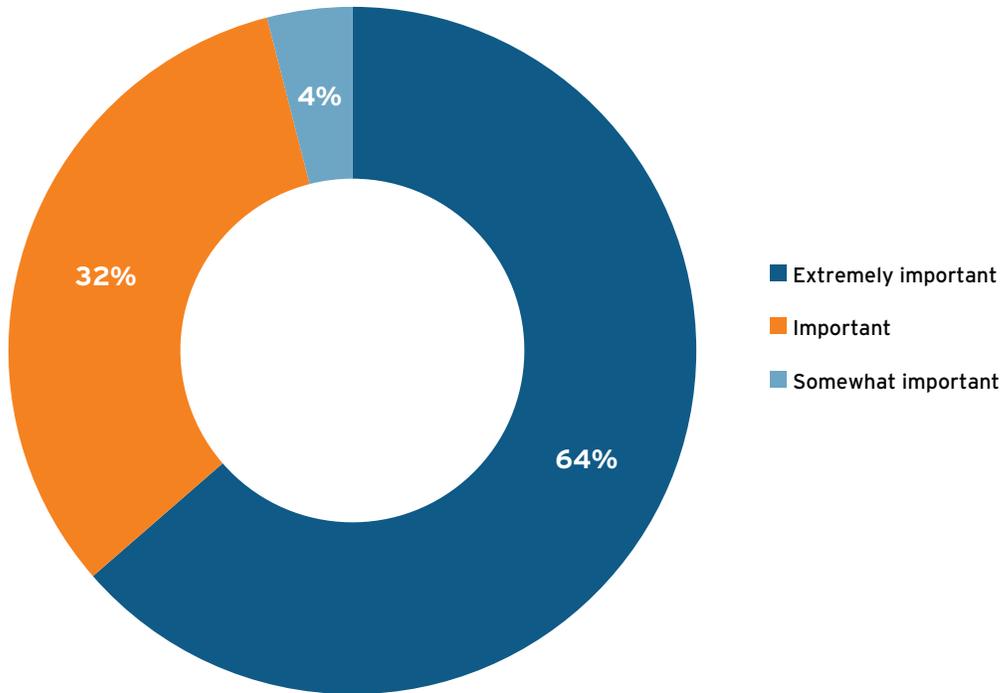
- Fifty-four percent of survey respondents say their companies are already using their machine data tools for business insight.
- The more software-centric a company is, the more likely it is to have 100+ people who use machine data analytics at least once a week, indicating that software-centric companies recognize the value of machine data analytics.
- Software-centric companies are more likely to integrate their BI and machine data analytics tools, another indication that they understand the business value of machine data.
- IT operations tops the list in terms of ownership and current usage, but a surprising array of employees in other roles commonly use machine data analytics.
- The adoption of emerging technologies such as containers and microservices is inhibiting the ability to get the data needed for fast decision-making, but perhaps not to the extent that many had thought, suggesting that tools are evolving to meet the needs of modern enterprises.
- Among the larger businesses we surveyed, customer-centric use cases are most important to line-of-business personnel, with user behavior and customer growth more important to businesses with 50,000-100,000 employees than those from smaller companies.

Businesses Recognize the Broad Potential of Machine Data Analytics

Machine data has long been valued by IT operations teams, which rely on machine data tools to ensure optimal application performance and identify security risks, but the utility of machine data outside of IT traditionally has been less certain. In our survey, however, we discovered businesses do in fact recognize the broader value of machine data. We asked respondents how important machine data was to their companies' abilities to meet their goals. Overwhelmingly, they placed high value on machine data and its role in their companies, with 96% saying machine data is either extremely important or important.

Figure 2: The importance of machine data in meeting business goals

Q. How important is machine data to your company's ability to meet its goals?

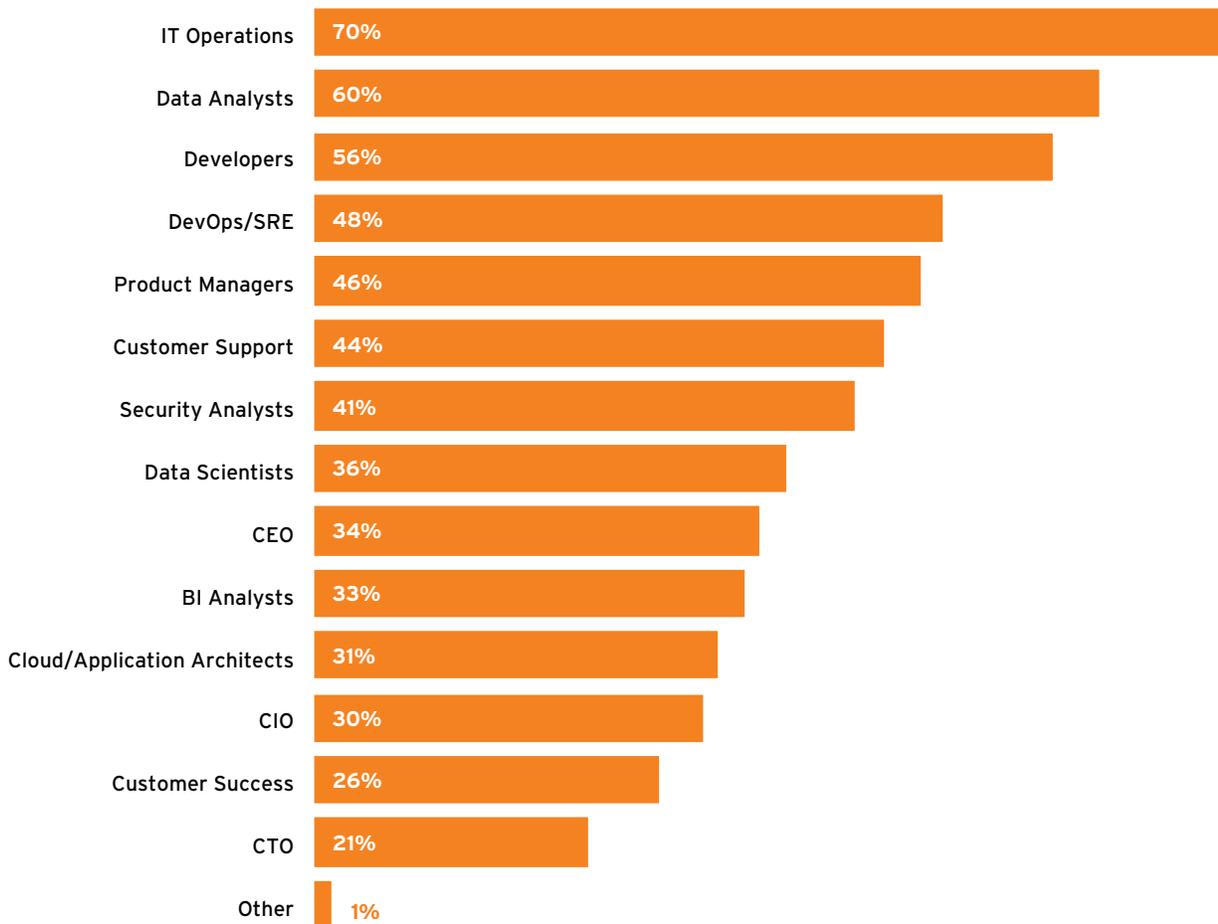


Source: 451 Research

Although IT operations, the typical use case for machine data analytics, still tops the list in terms of ownership and usage of these tools, we were surprised at the wide array of employees in other roles who commonly using machine data analytics – a result that again emphasized that companies do recognize the many ways that machine data can drive intelligence across the business. Product managers, customer support and data analysts, some of whom may serve lines of business or senior executives, all appeared among the top five roles that respondents said use machine data analytics tools.

Figure 3: Personnel in a wide variety of roles use machine data analytics tools

Q: What roles in your company use machine data analytics tools? (Select all that apply.)

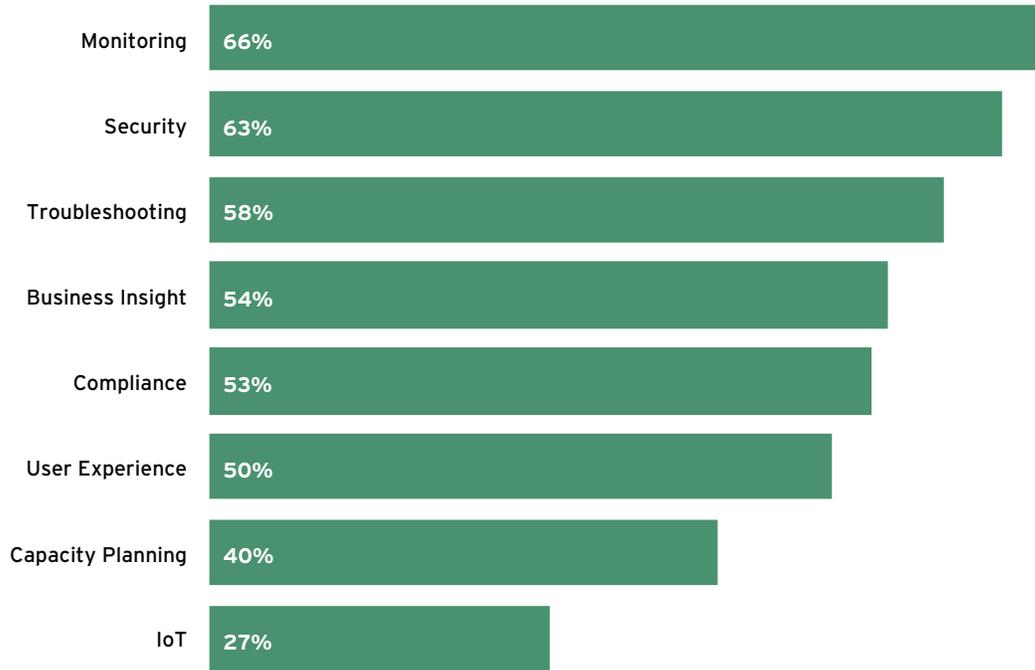


Source: 451 Research

The response to our question about use cases bore out this theme. When we asked respondents how their companies were using machine data analytics tools, the typical use cases – monitoring, security and troubleshooting – led, but a surprising 54% said they’re using these tools for business insight, and 50% said they are using the tools to support user experience, an important top-level business imperative. Compliance and capacity planning are other key use cases that serve operational efficiency goals, as well as key business requirements.

Figure 4: Use cases for machine data analytics tools

Q: What are the current use cases for these tools? (Select all that apply.)



Source: 451 Research

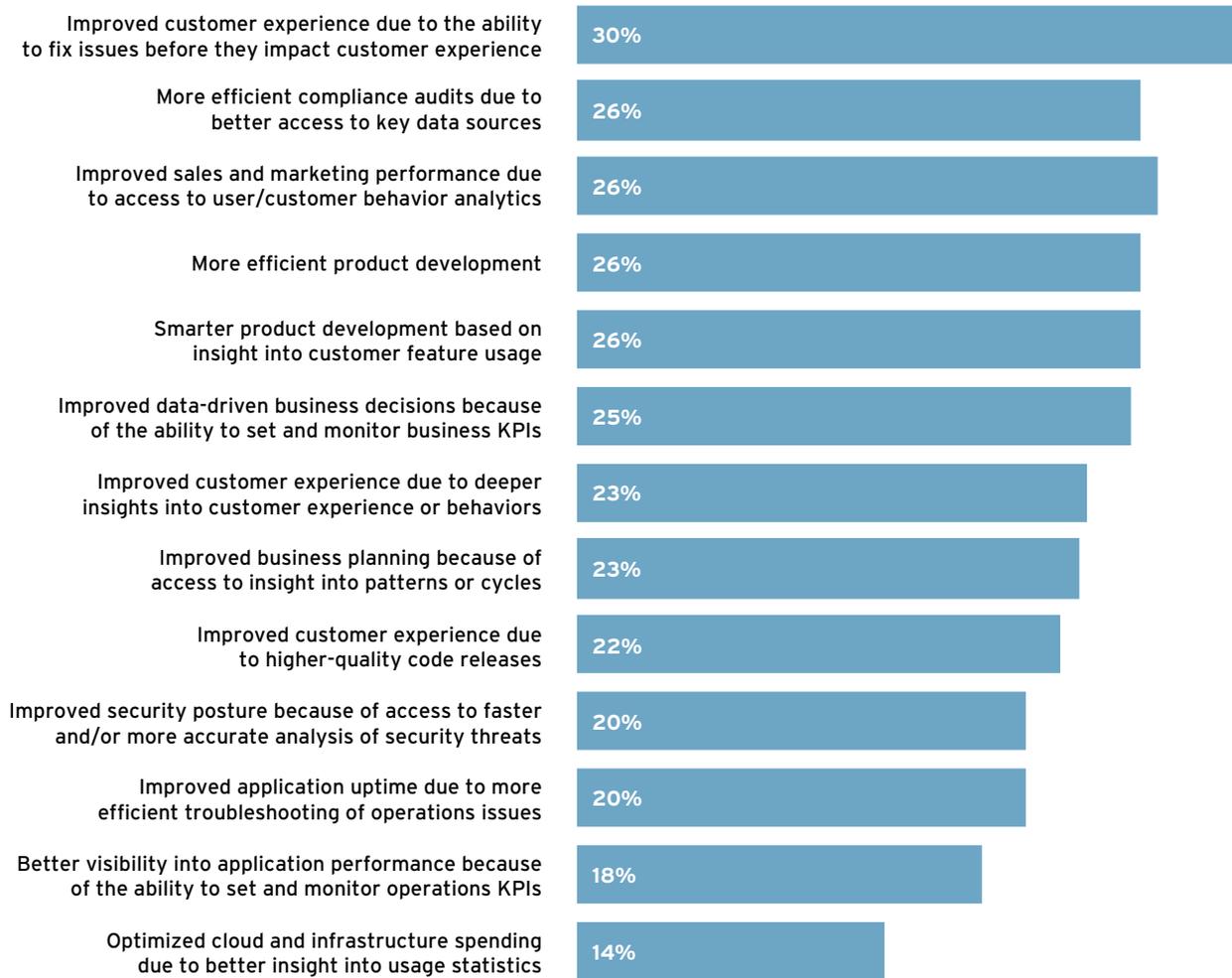
Businesses Value their Machine Data Analytics Tools but Want to do More with Them

To better understand the value that users are gaining from their machine data analytics tools, we asked survey respondents to rank the areas where their companies are benefiting the most from machine data analytics. Capabilities that support product development and drive the customer experience dominated the responses; the top answer, which 30% of respondents ranked among the top three most important business values, was 'improved customer experience due to the ability to fix issues before they impact customer experience.' Driving efficiencies in product development appeared among the top five most important business values.

There was a fairly even spread among the bulk of the responses, indicating that our respondents believe they're achieving business value in a number of areas from their machine data analytics tools – including more efficient compliance audits, improved sales and marketing performance, and smarter product development.

Figure 5: The value that machine data analytics brings companies

Q: What is the most important business value that machine data analytics offers your company? Please rank the top five in order of importance. (% ranked 1 - 3)

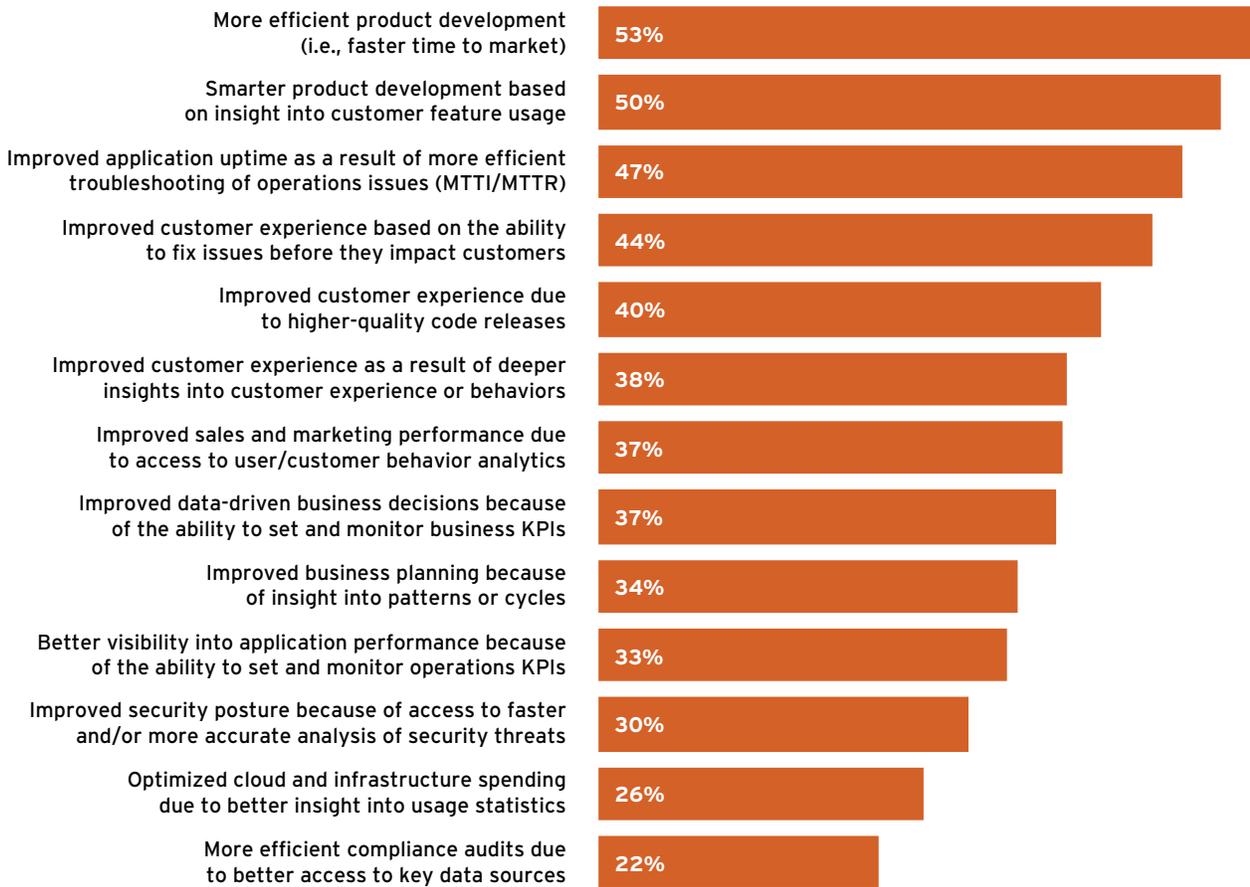


Source: 451 Research

Yet, respondents said they'd like to get even more out of their machine data analytics tools along similar categories of value. We asked about the potential to expand the use of machine data analytics. Again, using the tools to drive better experience for customers and speed time to market rose to the top – with 'more efficient product development' as the number one response. This was followed by 'smarter product development based on insight into customer feature usage,' which 50% of respondents cited as a potential focus for expansion of their machine data analytics tools. We believe this type of insight delivers competitive advantage, allowing businesses to harness machine data to make smarter decisions around product direction in response to customer demand.

Figure 6: Potential expansion of use of machine data analytics

Q: Where do you see the most potential to expand your organization's use of machine data analytics? (Select all that apply.)



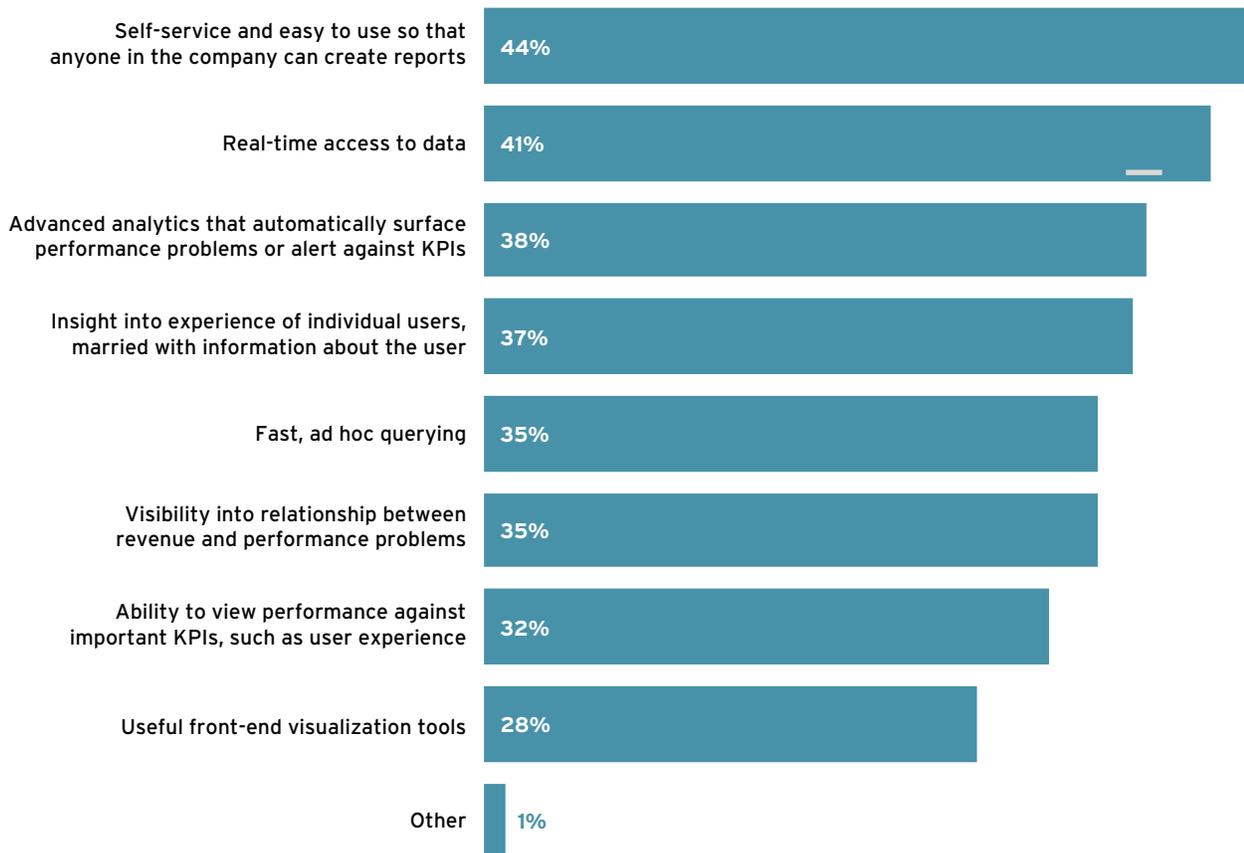
Source: 451 Research

There is clearly a lot of interest, so what's holding companies back from expanding their use of machine data analytics in these ways? Respondents cited a host of capabilities that their current tools are lacking. The number one complaint was ease of use; 44% of respondents said that their current tools lack self-service capabilities that make it easy for anyone to create reports. Many businesses have a select few experts who must run analytics and build reports for individual users who don't have the expertise to use complicated tools. This creates a gate that prohibits a wider audience of users from gaining value from the data. Machine data analytics tools that are easier to use allow more people across the organization to benefit from them.

Respondents also said that their tools lack real-time access to data, an important capability that supports several use cases around customer experience and that enables continuous intelligence. The speed with which users can access and act on important insight is key to enabling smarter, data-driven decision-making in today's fast-moving environments. Other top features respondents said they're currently missing include advanced analytics that automatically surface insight into performance problems or alert against KPIs, and the ability to marry insight into the experience of individual customers with information about the user.

Figure 7: Capabilities that are lacking in current tools

Q: What business value capabilities are lacking in your current machine data analytics tool? (Select all that apply.)



Source: 451 Research

Surprisingly, the adoption of modern technologies is not holding back broader usage of machine data analytics as much as we expected. We asked whether the adoption of new technologies such as cloud, containers, microservices, CI/CD tools and even serverless environments made it more difficult to get the data needed for fast decision-making, and 56% of respondents said no. Only among users of IaaS were respondents more likely to say that the adoption of that technology made it more difficult to get the data they needed for fast decision-making.

Because we commonly hear that new technology adoption makes it difficult for businesses to get visibility into their technology environments, we think this response could indicate that some tools are beginning to enable better insight into complex environments to better serve these modern businesses. We have seen tools evolve in order to collect the granular data required in application environments built on technologies such as containers and microservices. Still, 44% of survey respondents said that the adoption of modern technologies *does* make it harder to get the data they need for speedy decision-making, indicating that a notable portion of the market is still underserved in this regard.

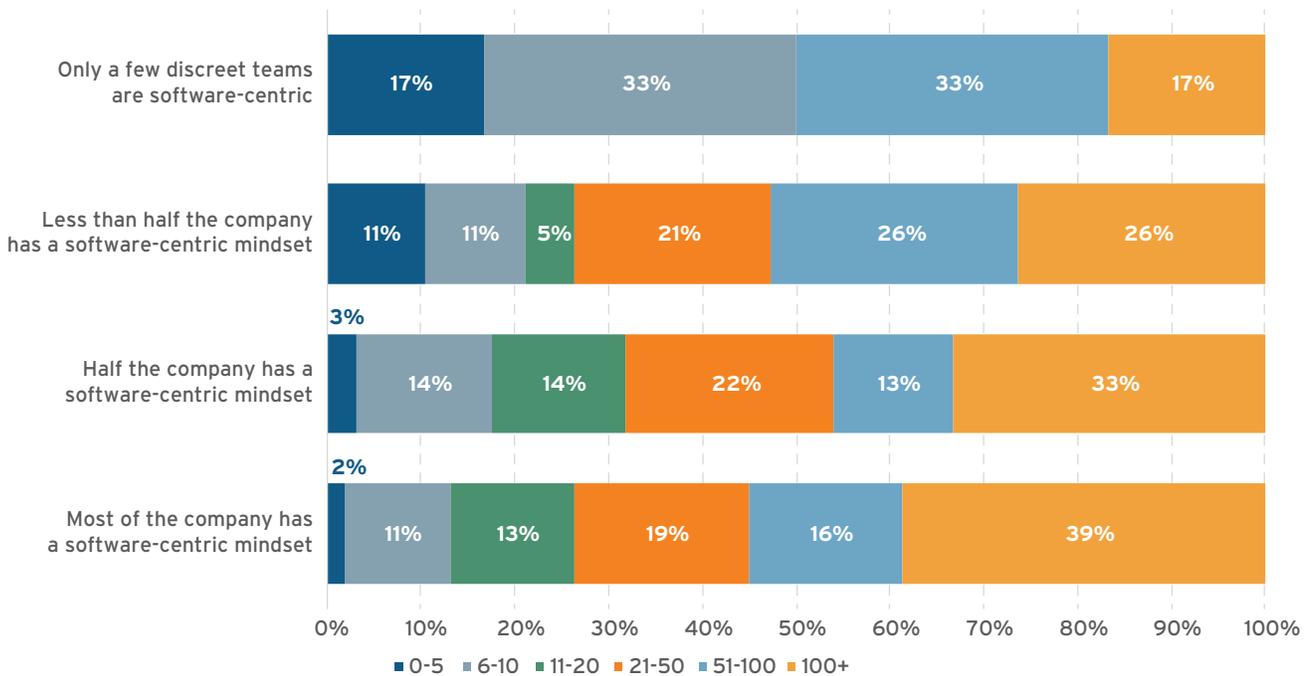
Software-Centric, Large Enterprises Lead the Pack

We discovered that larger enterprises, as well as modern businesses that have broadly embraced software, are more likely to be using machine data analytics in ways that we consider to be advanced. For instance, forward-thinking businesses that have broadly embraced software to drive their businesses are more likely to have a greater number of employees regularly using machine data analytics tools. Among the respondents we surveyed who said that most of their company has a software-centric mindset, 39% have 100 or more people who use machine data analytics at least once a week. The number of regular users drops based on how much of the company has a software-centric mindset; for instance, only 17% of companies with only a few discreet teams that are software-centric have 100 or more regular users.

We think that a larger number of regular users likely indicates that the company employs a broad array of use cases, including those that extend beyond IT operations and into areas such as customer experience that we consider to be beneficial in driving important business goals. These are the businesses that are moving toward pervasive intelligence.

Figure 8: Software-centric companies vs. number of regular users of machine data analytics

Q: How many people interact with machine data analytics once a week or more?

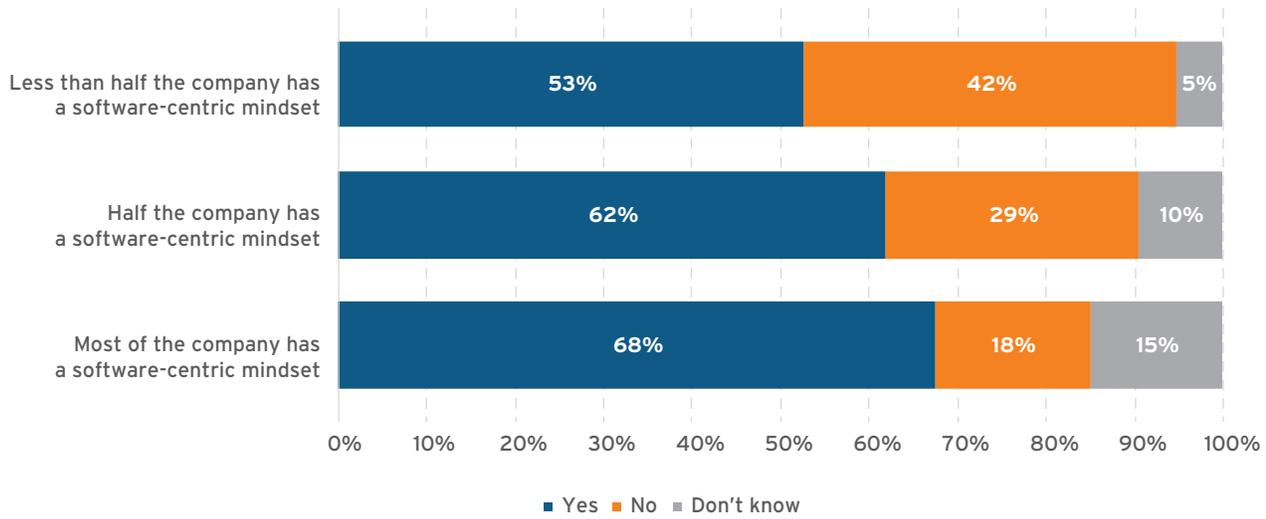


Source: 451 Research

Based on the survey, we found that companies that are broadly software-centric are also more likely to have line-of-business users who integrate machine data and BI tools. Such integrations indicate that users are marrying the machine data they collect from operations with other sources of company data – potentially about revenue and customer activity – likely in ways that deliver business-critical intelligence. Because BI tools are typically used by line-of-business users such as product managers and top executives, the marrying of BI and machine data tools likely reflects advanced usage in ways that are designed to help achieve high-level business goals.

Figure 9: Integration of machine data and business intelligence tools

Q: Do line-of-business users in your company currently integrate machine data and BI tools?



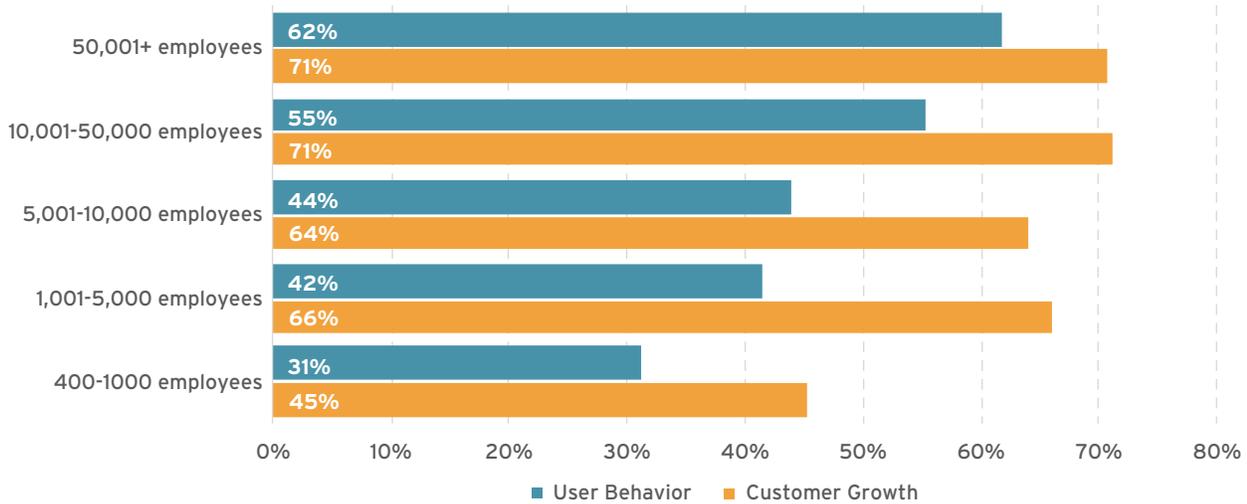
Source: 451 Research

We also discovered that larger businesses are more likely to recognize the potential insight that machine data can offer to line-of-business users in applications that we think represent some of the most valuable use cases for machine data. We asked what machine-data-based insight is most important to line-of-business leaders, and respondents from businesses with 10,000+ employees were most likely to cite customer growth and user behavior.

Larger businesses are also most likely to say that compliance is an important business insight for business leaders, which makes sense because larger businesses are likely to have more compliance requirements than others. Larger businesses are also more likely to use their machine data analytics tools to get insight into software usage, another important use case as businesses become increasingly software-driven. Understanding which software products are used the most can help businesses determine where to dedicate resources for development and also understand what types of software products their users value.

Figure 10: Machine-data-based insights that are most important to line-of-business leaders

Q: Which machine-data-based insight is most important to line-of-business leaders?



Source: 451 Research

Not only have large enterprises identified customer-centric insights as important to line-of-business users, but they also cite customer experience as an important area of expansion for machine data analytics. When we asked where respondents see the most potential to expand the use of their machine data analytics, those from the largest businesses were much more likely to cite interest in driving improved customer experience through better insight into customer experience or behaviors. While 53% of respondents from companies with 50,001+ employees cited this answer as a top potential area of expansion, that percentage dropped significantly for companies with 50,000 or fewer employees.

Figure 11: Potential expansion of machine data analytics to improve customer experience (by company size)



Source: 451 Research

Conclusion

Market disruption and customer demand are driving transformation in most sectors, putting significant pressure on businesses to move fast in order to best serve customers and stay ahead of the competition. New technologies that enable big data and sophisticated analytics are becoming key tools in support of these business imperatives. Machine data analytics tools are becoming a key component in the strategies of modern businesses that are emerging as leaders in their sectors.

Our survey showed that organizations across industries recognize the value of machine data in a business context, which sets them up to participate in the analytics economy in a way we think will be key in gaining competitive advantage. Larger companies are on the leading edge of this, discovering ways that machine data can drive pervasive intelligence: real-time, machine data analytics is becoming a continuous intelligence source for organizations; they are embracing machine data to inform insight into user behavior, customer growth and compliance; and organizations are expressing interest in expanding their use of machine data in important ways, including to improve customer experience. Similarly, forward-thinking companies – those that have a strong software-centric mindset – tend to be more advanced in their use of machine data analytics, with line-of-business users who integrate machine data and BI tools, for instance.

Businesses that wish to move in the direction of these leaders will need machine data analytics tools with important capabilities:

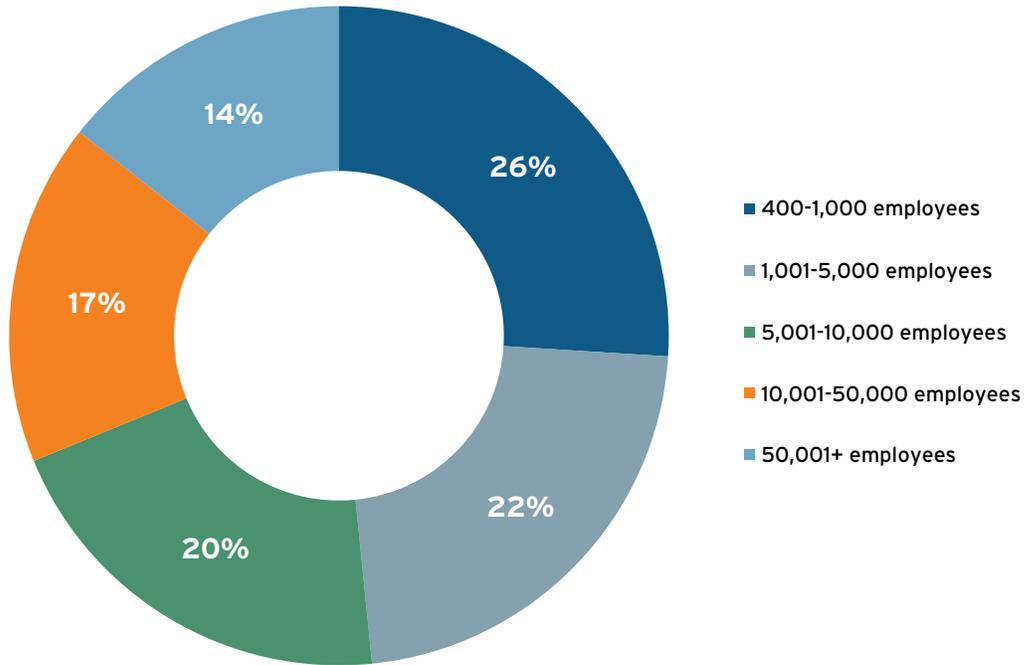
- Machine analytics tools must be self-service and easy to use so that professionals across the business can use them to drive intelligence into their decision-making processes.
- Users must be able to retrieve analytics from machine data analytics tools quickly in order to obtain the intelligence needed to enable agility.
- Machine data tools must harness sophisticated analytics that embrace machine learning in order to automatically present important intelligence to users.
- Users should be able to integrate their machine data tools with other important enterprise systems, such as business intelligence products, in order to get the most out of the machine data they collect.

It's clear that machine data plays an important role in enabling the kind of pervasive intelligence that we believe will be required for businesses to thrive in today's competitive marketplaces. Those that recognize this are already getting ahead. Those that fail to embrace the potential will be eclipsed by the competition.

Survey Demographics

To get an accurate read on the market's adoption of machine data analytics tools, we surveyed a cross section of users from 250 companies. We heard from businesses of all sizes, with 31% of respondents working for companies with 10,000 or more employees.

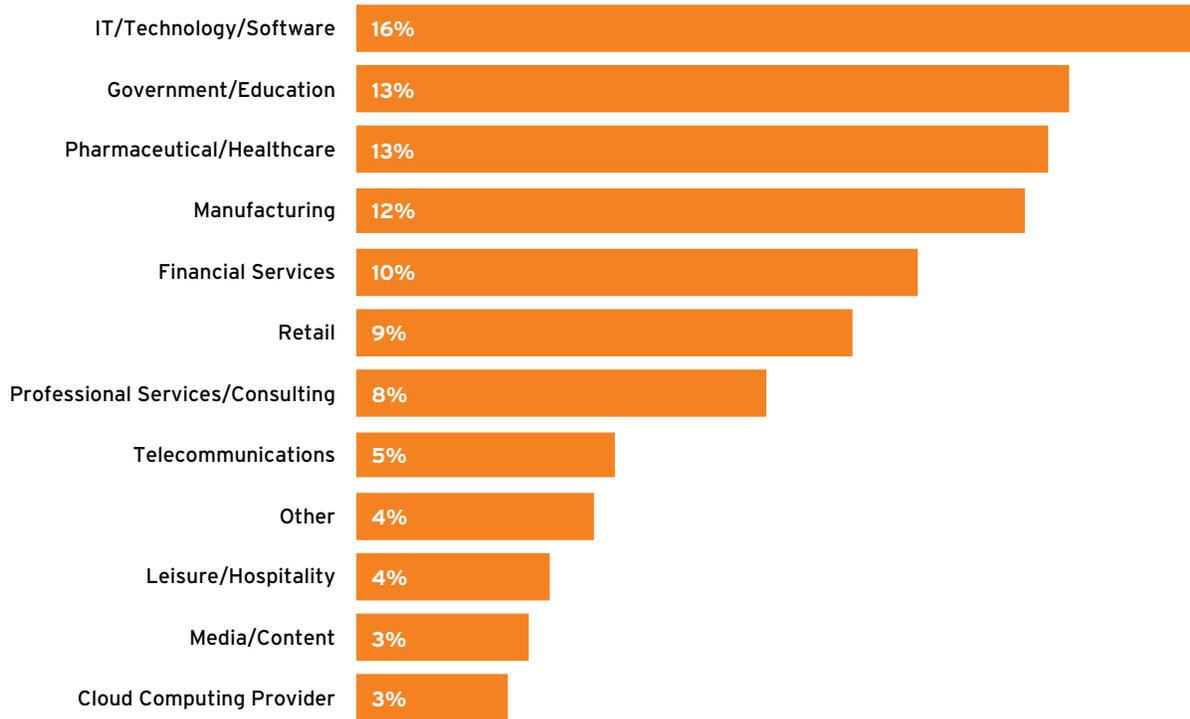
Q. Approximately how many full-time employees work at your company?



Source: 451 Research

We also heard from respondents from a wide array of sectors including government/education, healthcare, manufacturing and financial services. Because some of these industries, such as healthcare and financial services, have particular demands around compliance and security, our survey tapped into a broad representation of important needs across the market.

Q. What is the primary industry of your business?

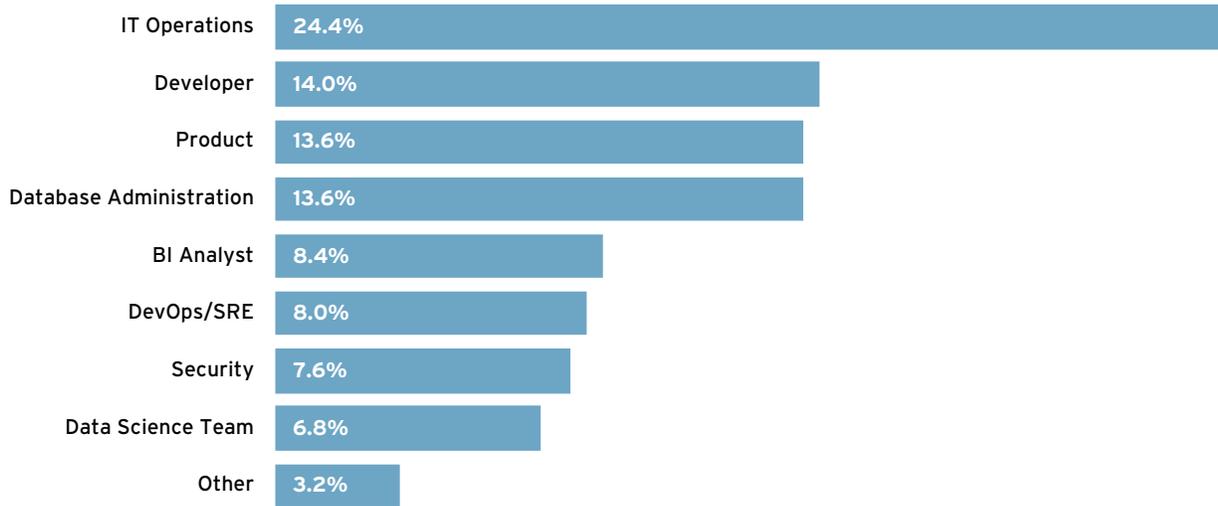


Source: 451 Research

The largest number of respondents – 24% – belong to an IT operations business unit. Given that we asked respondents whether their company uses machine data tools in any fashion and eliminated those who said no, the relatively high percentage of IT operations pros is a reflection of the business persona that typically plays some role related to machine data analytics tools. The fact that respondents in product, database admin, BI analyst and data science teams also appeared in the survey is interesting in itself, and points to the wide usage of machine data tools.

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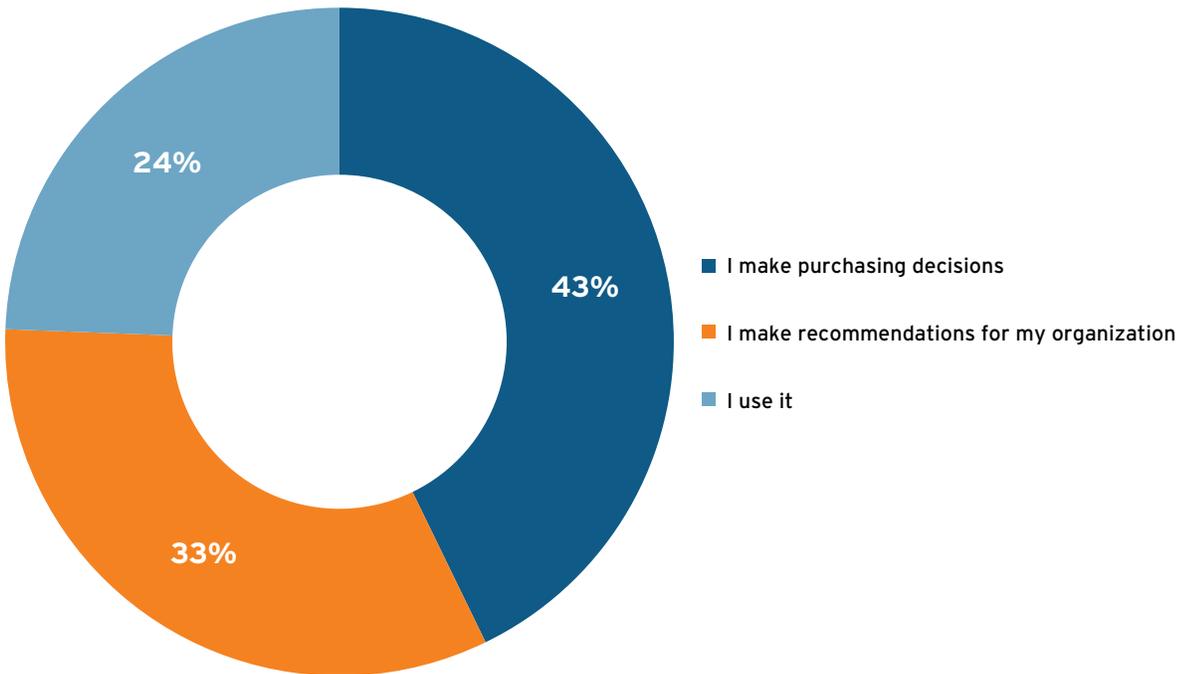
Q. What business unit do you belong to in the company?



Source: 451 Research

We also largely heard from professionals who are closely involved with their machine data analytics tools. Seventy-six percent of respondents either make the purchasing decision or make recommendations for their company's machine data analytics tools, and the rest reported that they are users of the tools.

Q. What is your role with machine data analytics within your organization?



Source: 451 Research

MACHINE DATA ANALYTICS PLATFORM AS A SERVICE DRIVES CONTINUOUS INTELLIGENCE

The age of digital services is putting pressure on companies to move with speed and agility, which means companies today are relying on analytics like never before. This shift is defining a new Analytics Economy, in which companies will win or lose based on how well they consume, and act upon, insights from analytics to drive faster innovation, better customer experiences, and increase data-driven decision making across their entire organization.

To address this shift, Sumo Logic believes companies now require an analytics platform that is continuously elastic, scalable and secure to handle the seasonality, unexpected events and threats common in today's digital business cycle. Sumo Logic's cloud-native, machine data analytics platform, delivered as a service, gives customers access to real-time, continuous intelligence. Built as an elastic, scalable, secure, cloud-native service, the platform ingests, parses and correlates machine data – logs and time-series metrics – to provide a unified, real-time view into a company's modern application stack. Advanced analytics via machine learning algorithms also surfaces outliers and anomalies automatically. With Sumo Logic, companies can now successfully compete in the Analytics Economy, turning traditional cost centers, like operations, security and user behavior analytics, into engines that drive business value.

ABOUT SUMO LOGIC

Sumo Logic is a secure, cloud-native, machine data analytics service, delivering real-time, continuous intelligence from structured, semi-structured and unstructured data across the entire application lifecycle and stack. More than 1,600 customers and 50,000 users around the globe rely on Sumo Logic for the analytics and insights to build, run and secure their modern applications and cloud infrastructures. With Sumo Logic, customers gain a multi-tenant, service-model advantage to accelerate their shift to continuous innovation, increasing competitive advantage, business value and growth.