

SCALING THE POWER OF ANALYTICS ACROSS THE ORGANIZATION

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While data may be a commodity, most organizations recognize that the ability to make data-driven decisions with analytics is a competitive advantage. Unfortunately, this journey toward a fully data-driven culture doesn't happen overnight. Even as the amount of data and the need to ask and answer critical questions escalate, tools like spreadsheets and legacy BI are unable to handle the volume and complexity of modern analytics. "Laggard" organizations—those with incomplete and legacy technology, teams, and processes—are at risk of falling behind their more agile competitors that understand data is the lifeblood of digital transformation. To reach true digital transformation, organizations must embark on a journey to enable every person with self-service data analytics, fundamentally altering the way they operate and make decisions.

Alteryx sponsored the study "Scaling the Power of Analytics Throughout the Organization" by Harvard Business Review Analytic Services in order to support analysts and leaders alike on this journey. In this report, Harvard Business Review Analytic Services shares survey results from business and IT leaders across multiple industries and regions on current frustrations and how self-service analytics can help organizations derive maximum business value.

The overarching theme of the survey results is clear: In order to not only survive but also thrive in a climate where the half-life of organizations is shrinking, empowering analysts, managers, and executives with self-service analytics is no longer a nice-to-have, but an essential component for smart decision making.

At Alteryx, we are revolutionizing business through data science and analytics with an end-to-end analytics platform that empowers data scientists and analysts alike to break data barriers, deliver insights, and experience the thrill of getting to the answer faster than they ever thought possible. Embarking on self-service analytics puts technology in the right hands so data-driven decisions can push the organization forward. From the moment a question is asked, analysts are empowered to explore raw data of all sizes, shapes, and locations in order to uncover deeper insights. Combining and enriching every data source no longer consumes analysts' workdays, and with the ability to validate each step of preparation along the way, the organization can trust every answer. With more time for meaningful analysis, analysts can explore their data and focus on discovering advanced insights with code-free predictive, prescriptive, and location analytics without needing an advanced degree. After analysts find an insight in a data haystack, answers can be effectively communicated in every format—all from one workflow. Data-driven decisions keep organizations on the right track, so it's important to overcome the limitations of current systems so that analytics can scale at the speed of business.

We are excited by the results of this study, as they show how organizations want to do more with their data and analytics but are stuck in the status quo with current solutions. The paper outlines clear routes to success, via industry best practices, so organizational leaders can feel confident taking that first step toward building a culture of analytics to achieve their goals and surpass the competition.

SCALING THE POWER OF ANALYTICS ACROSS THE ORGANIZATION

Data analytics has quickly become table stakes for organizations keeping pace with their competitors. Not only do line-of-business (LoB) managers rely on these solutions to report, analyze, and plan, but analytics also have become essential tools for smart decision making.

A new Harvard Business Review Analytic Services survey of more than 600 senior executives finds that 55% of organizations agree that data analytics for decision making is extremely important today, and 92% assert it will be even more important two years from now. [FIGURE 1](#)

Despite this growing value, most respondents say their organizations are burdened by outdated tools and processes, which prevent them from independently harnessing the true power of their data. They struggle with ease of use, speed, scalability, and visual graphics, and they are stymied by bottlenecks in IT and analytics groups, which are responsible for preparing and analyzing data.

As organizations continue to capitalize on the data economy, more are searching for solutions that empower LoB managers and encourage autonomy. Self-service data analytics tools enable these professionals to do just that: perform data queries and deliver business insights with minimal support from IT or dedicated analytics groups.

Despite the need for these tools, adoption is still limited. Just 45% of organizations use self-service data analytics. Of those that do, 52% report using it daily, signifying high value and the need to bring awareness to more organizations.

Line-of-Business Frustration

Data analytics is a multibillion-dollar business.¹ Not only do these tools help organizations identify cost savings and revenue opportunities, but they're also designed to help them make faster, better decisions.

According to the survey, 60% of respondents say they use data analytics to contribute to business decisions. Forty percent report they base their business decisions solely on what the data says. Data analytics is clearly a commodity, but one that less than a majority is taking advantage of. [FIGURE 2](#)

HIGHLIGHTS

55%
OF ORGANIZATIONS AGREE THAT DATA ANALYTICS FOR DECISION MAKING IS EXTREMELY IMPORTANT TODAY.

92%
ASSERT DATA ANALYTICS FOR DECISION MAKING WILL BE EVEN MORE IMPORTANT TWO YEARS FROM NOW.

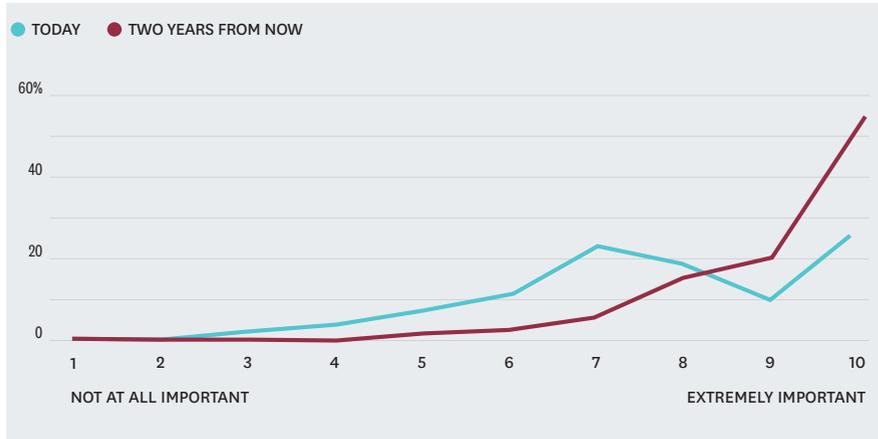
45%
OF ORGANIZATIONS USE SELF-SERVICE DATA ANALYTICS.

¹ <https://www.idc.com/getdoc.jsp?containerId=prUS44998419>

FIGURE 1

DATA ANALYTICS TODAY AND TOMORROW

Businesses' decision making will hinge on what the data says.



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, AUGUST 2019

55% OF ORGANIZATIONS AGREE THAT DATA ANALYTICS FOR DECISION MAKING IS EXTREMELY IMPORTANT TODAY, AND 92% ASSERT IT WILL BE EVEN MORE IMPORTANT TWO YEARS FROM NOW.

Wayne Eckerson, president of the research and consulting firm Eckerson Group, estimates that just 10% of a business's employees are true data analysts responsible for everything data, namely collection, analysis, and interpretation. Today's tools typically require backgrounds in statistics, databases, and analysis, all of which are skills that only a select few—data scientists, data analysts, and other IT pros—have mastered.

"Those data analysts are using a triumvirate of tools: a data catalog to find the data, a data prep tool to mash it up, and a data visualization tool to analyze, display, and share their insights," he says.

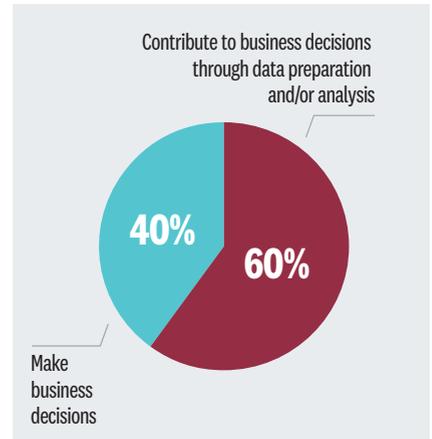
But while these tools work well for that small subset of expert users, they're not designed for LoB professionals, many of whom possess just basic data analysis skills.

"You don't want these casual users acting like a data analyst, because most of the time, that's not their job," Eckerson says. "Traditional tools are too hard for them to use—they never remember how to use ad hoc features because they don't use them enough. Sometimes they want to dig into data like a data analyst does, but they lack

FIGURE 2

MAKING DECISIONS

Data and analytics contribute to a majority of business decisions.



the skills to do so. Ultimately, they end up calling IT or a data analyst to do the analysis."

Still, organizations are encouraging LoB managers to be more data-driven, adds Dan Vesset, vice president of analytics and information management at research firm IDC. They're increasingly tasked with making decisions that impact customers, products, and processes.

"There's an ongoing shift to give more direct access to these line-of-business people whose primary job is not to analyze data," he says. "They have a need and desire to sometimes pivot data a little bit, look at it from different dimensions, and explore it more—but they can't. It's what's driving their frustration and is why there's this underlying demand for self-service tools."

Unsatisfactory Tools Prevail

That need—and the inability—to manipulate data on their own is just one of the reasons why LoB professionals are so unsatisfied with the tools available to them, says R "Ray" Wang, principal analyst at technology research and advisory firm Constellation Research. When data

questions arise, users are effectively sidelined because they're unable to access or modify reports on their own.

"They get a nice report, then start asking questions, and they realize they don't have the capabilities to get to the data to answer the questions," he says. "That's where the frustration begins."

A report may show declining sales in a store in a particular region, which is useful information but doesn't provide any reasons for the slide, such as whether there was a supply chain problem or if weather was a factor. Without those answers, making the right business decision is difficult.

As a result, users take matters into their own hands, often reverting to spreadsheets and other outdated technologies, IDC's Vesset says. Though spreadsheets allow them to create their own formulas and change variables, the process is laden with inefficiency and potential problems.

"It takes time to build out formulas, and the metrics may be inconsistent among different people," he says. "Governance gets lost when that happens."

Not surprising, while 88% of respondents report using spreadsheets to analyze data, just 33% are highly satisfied with the tools' ability to provide the information they need.

"Not everybody is trained in statistics, and even basic statistics are misinterpreted or misunderstood. People don't understand exactly what the underlying data means, especially if it's not from their department or group," says Dan Vesset at research firm IDC.

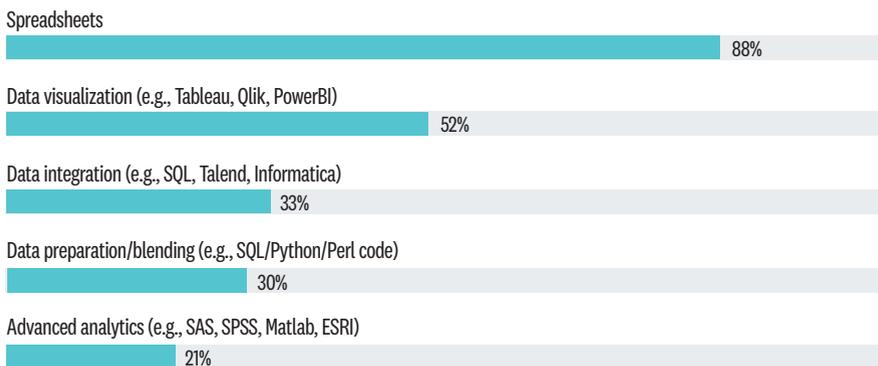
Spreadsheets aren't the only tools that received unsatisfactory marks. One-third of respondents rely on data integration to guide decision making, yet just 36% are satisfied with the tools. Data preparation, advanced analytics, and data visualization round out the most-popular tools that LoB managers use to analyze data for decision making, but none were deemed satisfactory by more than 55% of users. [FIGURE 3](#)

While the tools themselves pose problems for LoB users, frustrations also boil down to data literacy issues, according to Vesset. "Not everybody is trained in statistics, and even basic statistics are misinterpreted or misunderstood," he says. "People

FIGURE 3

DISAPPOINTING TOOLS

Tools used by managers to analyze data for decision making



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, AUGUST 2019

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63% OF THE ORGANIZATIONS SURVEYED RELY ON IT AND ANALYTICS GROUPS FOR THE DATA ANALYSIS THEY NEED FOR DECISION MAKING.

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That lack of understanding is why they crave solutions that are easy to use (78%), accurate (91%), and reliable (92%)—characteristics in data analytics tools that respondents ranked the highest. [FIGURE 4](#)

The IT Dependency

While the tools that LoB managers rely on today fall short of users' expectations, so do the processes their organizations have in place. A majority of organizations—63%—rely on IT and analytics groups for the data analysis they need for decision making. None, however, report satisfaction

with any aspect of either group's responsibilities, from response speed to work quality.

Eckerson Group's Eckerson says this dissatisfaction is rooted in the fact that when LoB managers realize they're missing that "so what?" piece of the data puzzle, they return to IT with requests for custom reports that take months to compile.

In addition, 80% of respondents report the need to customize existing reports frequently. But because IT teams aren't designed to handle iterative requests in a timely manner, decision making slows to a crawl.

"IT has been a huge bottleneck to getting things done," Eckerson explains. "Users feel like they can't get at their data and modify reports unless they sign forms in triplicate, wait three months, and get in line behind everyone else. This bottleneck forces the business units to create their own data and their own reports, which turn into silos, which means the data is fragmented and they can't get answers to simple questions."

Though business units can gain some insights from their own data and processes, the data silos that result have significant consequences for entire organizations. Siloed data can be risky, error-prone, and unscalable, which leads to lost opportunities and unanswered questions.

The Self-Service Solution

LoB managers who have struggled to siphon value from their current toolsets and with their current processes are turning to self-service data analytics.

These tools enable users to perform data queries with minimal support from IT or dedicated analytics groups. They're automated, easy to use, and scalable, allowing them to easily draw from multiple data sources, develop reports, and deliver business insights.

"Self-service has been the holy grail of business intelligence. It helps you interact and converse with data and lets you take existing reports and edit and modify them to your liking,"

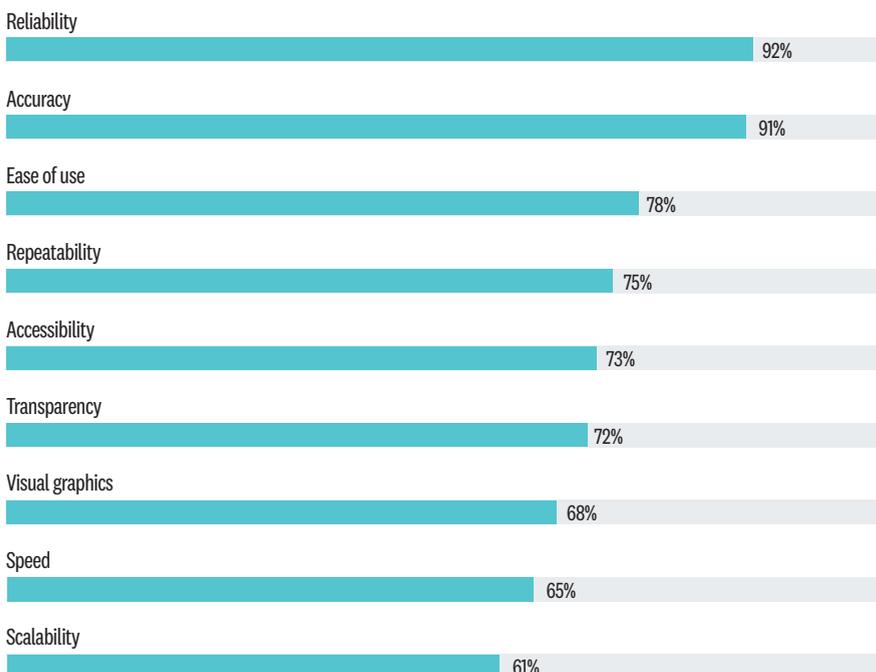
FIGURE 4

WHAT USERS WANT

Reliability, accuracy, and ease of use matter most.

How important are the following characteristics for the data analytics you use for decision making?

[1 = NOT AT ALL IMPORTANT, 10 = EXTREMELY IMPORTANT, TOP BOX 8-10]



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, AUGUST 2019

“Self-service has been **the holy grail of business intelligence**. It helps you interact and converse with data and lets you take existing reports and edit and modify them to your liking,” says Wayne Eckerson, president of research and consulting firm Eckerson Group.

Eckerson says. “For casual users, self-service is data analytics delivered on a silver platter—it minimizes any heavy lifting and is tailored to your needs, roles, and interests.”

Almost half of the organizations surveyed have adopted self-service analytics as the answer to their pain points, and 71% report using them daily or weekly. Businesses are clearly seeing the value, and they’re capitalizing on the autonomy they enable. **FIGURE 5**

“People were frustrated because they couldn’t get to the data,” Constellation’s Wang says. “What self-service data analytics does is it allows you to bring data together. It’s the first step that allows you to figure out correlations that you weren’t going to figure out before.”

They also improve upon interactivity and visualization—which got mediocre satisfaction rankings—and they expose more master data and meta data, making it easier for users to understand what exactly they’re looking at, Vesset adds.

“In some examples, you can see the lineage of data—where it came from and when it was refreshed,” he says. “This eliminates some of the issues, frustrations, and inefficiencies when arguing about whether your data is more accurate than someone else’s, even though you’re supposed to be looking at the same report.”

Every step of the data analysis process—from collecting information to analyzing and interpreting results—is all done with minimal support from IT or dedicated analytics groups, Eckerson adds. “It gives you what you

want, when you want it, and how you want it, while freeing up IT to work on bigger-picture things,” he says. “Everybody wins.”

While some businesses are realizing the benefits of self-service data analytics, for others, it’s still very new. Sixty-four percent said they’re unfamiliar with the concept of self-service data analytics, and 55% say their organization either doesn’t use these tools or they’re unsure about usage.

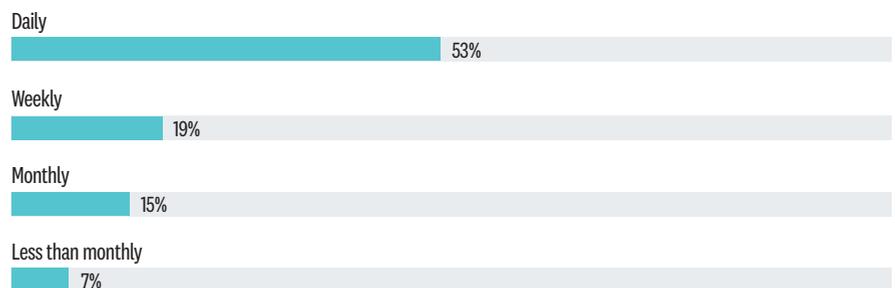
Vesset expects this lack of usage of self-service data analytics to change. As businesses continue to embark on digital transformations and prioritize big data, the benefits of better, faster decision making through data become harder to ignore, he says.

“Not every employee at every company will need to use self-service data analytics, but it should near 100% of managers, analysts, data scientists,

FIGURE 5

SELF-SERVICE PROVIDES VALUE

Adopters of self-service tools use them frequently.



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, AUGUST 2019

ALMOST HALF OF THE ORGANIZATIONS SURVEYED HAVE ADOPTED SELF-SERVICE ANALYTICS AS THE ANSWER TO THEIR PAIN POINTS, AND 71% REPORT USING THEM DAILY OR WEEKLY.



and executives,” he says. “They’re the ones either sitting, walking, or driving with access to screens and need to look at data through multiple dimensions.”

Unlocking Value

Experts tout self-service data analytics as a solution for organizations that are burdened by outdated tools and processes. To ensure that new adopters and seasoned users derive maximum value, they outline a clear set of best practices.

One such benchmark: Determine the business question that self-service data analytics should answer. Consider why you’re using these tools and what you want to discover. What do you plan to do with all your data? Before you dive into reporting, it’s important to understand exactly what you’re looking for, Wang advises.

Also, connect every data source. The ability to create reports on your own is great, Wang asserts, but it’s useless unless you have good, complete data from every data stream available. Without it, you won’t see the full story, Vessel adds.

“Let’s say you have social media data in there. Great. But do you have sentiment? Competitors’ pricing? A key step in decision making is evaluating different scenarios and understanding the likelihood of some other future step to happen. You need complete data for those assessments,” he says.

Rules management is a best practice that must be designed to thwart potential ethics or regulatory issues, Vessel says. This feature ensures that data doesn’t lead you somewhere you shouldn’t go, such as targeting minors with cigarette ads because it’s profitable. “Unless those rules are clear and are exposed to you within the software, you’re not going to be aware of them,” he says.

Predictive functions must be part of any self-service analytics tool, too. If you change any of the variables of pricing or expected demand, for example, the software should expose the likelihood of something happening, Vessel says. “If you just

As businesses continue to embark on digital transformations and prioritize big data, the benefits of better, faster decision making through data become harder to ignore.

have a visualization that shows you what already happened, there’s no way to assess what might happen in your next month, quarter, or year,” he says.

He points out that if you set a goal—to maximize revenue, profit, or inventory, for example—it’s beneficial to have the capability to optimize subsequent variables for that goal.

Also consider security and compliance. Not all users need access to all the data, which is why it’s important to enact proper access rights. Consider internal policies or external regulations as well as metrics of data quality and lineage—particularly when using customer data, Vessel says. “There’s a lot of data being bought and sold,” he asserts. “If that’s the case, you need to consider the liability to your company for using that external data.”

Last, don’t exclude IT. While self-service data analytics may ease tensions between the business and IT, organizations should stop short of bypassing it entirely, Vessel says.

“On the back end, someone still has to be in charge of governance, whether it’s someone in IT or a chief data officer,” he says. “That function becomes even more important in self-service because if that back end is taken care of, you can have true self-service. If that’s not the case, you’re just creating more anarchy and chaos with data warehousing.”

Forging Ahead

The 45% of businesses already using self-service data analytics can benefit from additional steps to take their experience to the next level, both Wang and Vessel say.

First, revisit your reasons for analyzing data: Is it to report? Forecast? Prevent compliance problems? Is it a regulatory requirement? “Users should go back to their ‘why?’ so they can get better at being more efficient,” Wang says.

Next is understanding how the organization is using these tools in different ways through tracking and monitoring user behavior and even interviewing employees, Vessel adds. “You want to understand how people analyze data and determine best practices for the company,” he says. “Are there experts doing something better than others? Maybe they become the go-to people to train others. It’s never just about the tool itself—it’s about establishing knowledge management and knowledge sharing and identifying intelligence hubs living within the company.”

As more businesses rely on data and analytics for faster and more insightful decision making, self-service solutions provide a viable means of alleviating some of the most pressing problems.

Not only do they reduce the time wasted on low-value activities, such as collating the most up-to-date data, but they also eliminate analytics’ exclusivity by empowering LoB professionals to harness data’s potential on their own.

“We’re moving from folks just thinking about self-service data analytics to actually getting it in front of them,” Wang says. “And as more of the world becomes digitized, everyone can benefit in some way from having better, faster information available to make better business decisions.”

METHODOLOGY AND PARTICIPANT PROFILE

A total of 601 respondents drawn from the HBR audience of readers (magazine/ newsletter readers, customers, HBR.org users) completed the survey.

SIZE OF ORGANIZATION

33% FEWER THAN 500 EMPLOYEES	17% 500-1,499 EMPLOYEES	17% 1,000-4,999 EMPLOYEES	34% 5,000 OR MORE EMPLOYEES
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SENIORITY

30% EXECUTIVE MANAGEMENT/ BOARD MEMBERS	15% SENIOR MANAGEMENT	38% MIDDLE MANAGEMENT	16% OTHER
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KEY INDUSTRY SECTORS

12% MANUFACTURING	10% FINANCIAL SERVICES	10% CONSULTING SERVICES	10% HEALTH CARE	9% TECHNOLOGY	7% EDUCATION	OTHER INDUSTRIES WERE LESS THAN 7% OF THE TOTAL
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JOB FUNCTION

15% GENERAL/ EXECUTIVE MANAGEMENT	14% CONSULTING	10% SALES/BUSINESS DEVELOPMENT/ CUSTOMER SERVICE	8% FINANCE/RISK	7% HR/TRAINING	7% STRATEGIC PLANNING	OTHER FUNCTIONS WERE LESS THAN 7% OF THE TOTAL
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REGIONS

46% NORTH AMERICA	21% ASIA/PACIFIC	19% EUROPE	8% MIDDLE EAST/ AFRICA	6% SOUTH AMERICA	1% OTHER
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Figures may not add up to 100% due to rounding.



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