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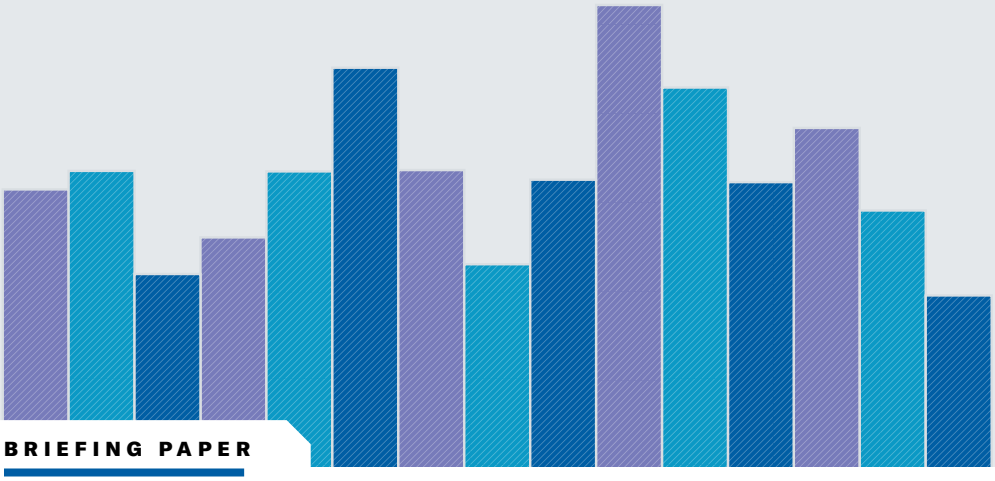

BRIEFING PAPER

Empowering the New Decision Makers to Act with Modern Self-Service Analytics

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In 2020, ThoughtSpot sponsored research by Harvard Business Review Analytic Services to bring you research demonstrating the power of the new decision makers—those employees on the front lines of your business responsible for interacting with customers, partners, vendors, and more. Their decisions are the new competitive battleground for business. They can make or break your ability to operate efficiently, deliver exceptional products and services, and satisfy customers so they keep coming back for more.

As our original research demonstrated, it's absolutely critical to equip these decision makers with the right tools to find their own data-driven insights, and more importantly, empower them to act on these insights. The world around us has changed too much. For years, your customers had to come to you. They had no choice. They learned about products from your marketing campaigns, circled your stores looking for parking to come buy from your employees. Today, that's all changed. Brands need to surround their customers—or they'll find a vendor or brand that does.

The key, as many of you pointed out, to making this possible is self-service analytics. You made it clear the same static, complex, dead dashboarding tools that served you for the past decade won't serve you in the decade to come.

You also made it abundantly clear that you needed more insight into the technology that could enable true, modern self-service. Not self-service for data professionals, but for employees, partners, and even customers to engage directly with your data, answer their questions, and propel your business forward. Whether you're considering a search-driven approach to analytics or looking to get more value from your cloud data investments, this new report digs into the technology trends and paradigms you should evaluate as you seek to empower your new decision makers.

But we know technology is only the first step in realizing the full potential of your data. People, process, and culture remain critical elements of any successful analytics initiative. That's why I'm particularly excited about the real-world success stories from companies like Medtronic and best practices from experts like Randy Bean and Fern Halper that demonstrate how bringing together all these elements can help you realize your life after dashboards.

It's time to build your business on data. This report can help you get started.

Sudheesh Nair
CEO
ThoughtSpot

Empowering the New Decision Makers to Act with Modern Self-Service Analytics

Organizations have a new urgency when it comes to enabling their frontline workers to make data-driven decisions. With increased digital dexterity among customers, as well as the fast-changing market conditions, uncertainties, and disruptions born of events such as the Covid-19 pandemic and widespread natural disasters, it's never been more crucial for organizations to use data and analytics to inform their next best move. Most often, that move involves a line-of-business (LoB) manager or frontline worker needing an in-the-moment insight to make a decision and take fast action.

Forget traditional business intelligence tools where data teams crunched data in back offices and emerged with static dashboards; forget even newer approaches that provide some level of self-service but require days-long training courses and the use of drag-and-drop data visualization tools. Now, frontline workers across a variety of functions—from sales and marketing to customer service to procurement to IT—need to quickly find and create their own personalized insights rather than relying exclusively on the ones derived by highly trained analytics teams.

To unearth personalized insights, these users need modern self-service analytics tools, so described because they enable frontline workers to easily pose their own data queries in a natural and familiar way. Using modern self-service analytics, frontline workers can interact directly with a wide range of customer and business data in real time, and therefore have the context for up-to-date, powerful insights and fast action.

While this is a major shift—culturally and organizationally—for most companies, self-service analytics are getting increased attention. In a January

HIGHLIGHTS

Modern self-service analytics can **boost speed, efficiency, accuracy, and trust** in the insights that frontline workers glean from customer and business data.

Frontline workers need the ability to **query data similarly to how they'd search for information** in their daily lives, which isn't possible with more cumbersome analytics tools optimized for power users and data analysts.

Building a **truly data-driven culture versus isolated pockets of data-driven innovation** requires not just equipping frontline workers with self-service tools but also empowering them to take action on any insights they discover.

"Given Covid-19 and everything changing rapidly, people need to quickly see what's happening so they're able to pivot in real time," says Fern Halper, vice president and senior director for advanced analytics at TDWI.

2020 survey by Harvard Business Review Analytic Services, 86% of respondents said frontline workers at their organization need better technology to make data-driven decisions in the moment. In the same survey, respondents named self-service analytics as a top technology they'd adopt by 2022 for their frontline workforce, second only to unified communication/collaboration tools.

Indeed, while collaboration is vital, frontline workers face countless immediate decisions they have to make as individuals that self-service analytics capabilities can help with. "In today's fast-moving world, businesses need to move data tools closer to the end decision makers so they can define for themselves what they need to make more informed decisions," says Randy Bean, founder and CEO of NewVantage Partners in Boston, Mass., an advisory firm specializing in data-driven leadership, and author of *Fail Fast, Learn Faster*. In the book, Bean posits that the pandemic has accelerated this need. "We need data, science, facts, knowledge, and insight to make informed, wise, and critical decisions," he writes.

This report seeks to define what modern self-service analytics look like from a tools and usage point of view. It highlights the changes businesses need to make to turn independent interactions and data-driven insights into better decision making and, ultimately, actions that impact business performance.

"Given Covid-19 and everything changing rapidly, people need to quickly see what's happening so they're able to pivot in real time," says Fern Halper, vice president and senior director for advanced analytics at Woodland Hills, Calif.-based Transforming Data with Intelligence (TDWI), which provides business and technical education and research on realizing business value from data. This advice may be as true for hospitals that must understand patient outcomes during the pandemic as it is for manufacturers needing to know about unprecedented demand fluctuations. In either case, empowering new decision makers with self-service analytics could be vital to determining what must be done and executing the solution.

The Power of Search-driven Analytics

Modern self-service analytics, according to TDWI, are easy-to-use solutions for nontechnical users that require neither coding nor IT to set up the data access, queries, visualizations, and preparation necessary for enablement tools. According to TDWI's Halper, these tools can allow users to word their questions in natural-language form, and to drill down into massive amounts of data that is continually updated in the cloud.

Frontline workers need the ability to query data similarly to how they'd search for information in their daily lives, which isn't possible with more cumbersome analytics tools optimized for power users and data analysts. "We're so used to Google now—asking questions and getting an answer—versus click, drag, and drop," says Manish Motiramani, director of advanced analytics programs for Minneapolis, Minn.-based Medtronic, a global health care technology company. "When you look at business folks, they have a day job. They don't have the time to build reports that get them the data in the format they need."

Given this time crunch, executives realize they have to give their workers easy-to-use analytics tools that are at their fingertips. Two-thirds of the 240 global business and IT professionals surveyed by TDWI in the third quarter of 2020 said improving data quality and trust in data would be an essential step to improve their organization's success with business intelligence and analytics. The next most frequent answer, at 53%, was empowering more users with self-service functionality. **FIGURE 1**

Modern self-service analytics boost speed, efficiency, accuracy, and trust in the insights that frontline workers glean from customer and business data, NewVantage's Bean says. The speed and efficiency gains come from LoB managers and frontline workers being able to formulate their own data queries and get answers in real time rather than waiting for the data team to respond. Very often, this process turns into multiple iterations because the more data they see, the more questions they think to ask. If frontline workers can drill into the data on their own, the wait time for insights and decision making is greatly reduced compared with frequent iterations with the data team.

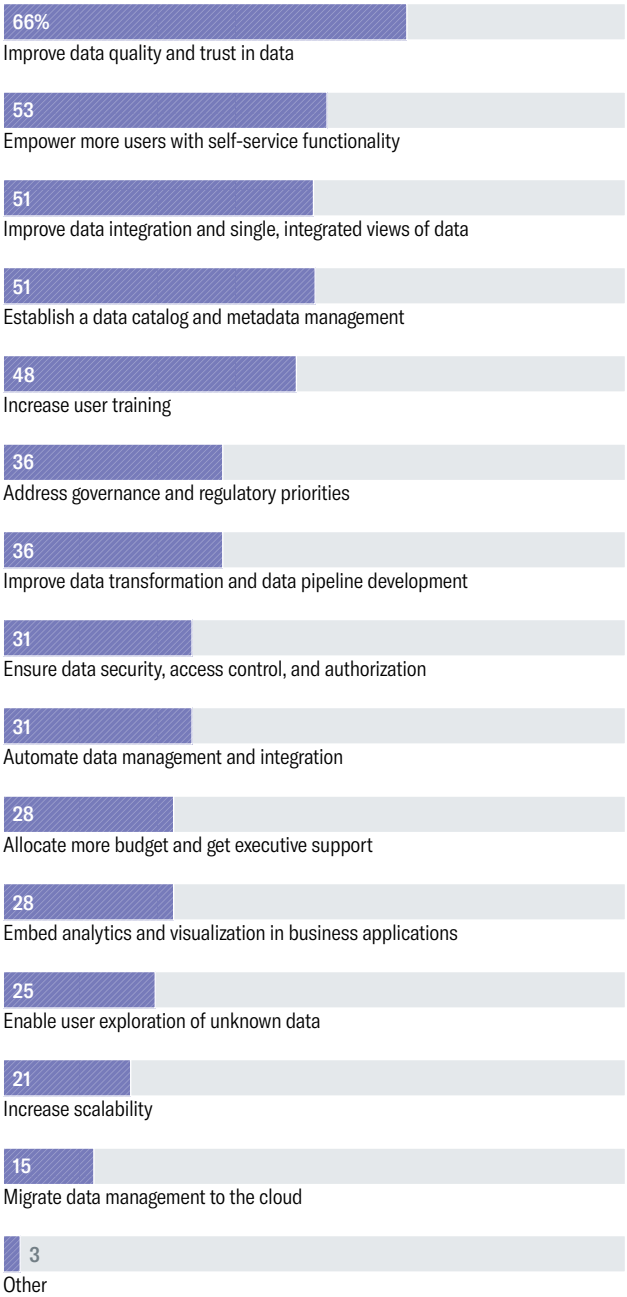
Trust in the data, and the ability to take action, are also enhanced because frontline workers and LoB managers are seeing the data themselves and can apply their own deep knowledge of the business to dig deeper. Armed with higher-quality insights and their own skills and business knowledge,

FIGURE 1

User Empowerment Is Key to Analytics Success

Giving users self-service analytics is second only to better data quality

Which of the following steps would be most important right now to improve your organization's success with BI and analytics and increase the value it gains from data assets? [SELECT AT LEAST TOP FIVE]



Respondent base: 240 respondents
(Note: The survey collected responses from a total of 249 respondents. Not all respondents completed every question.)

Source: TDWI, third quarter 2020

When they can easily and independently query the data, users are also more likely to keep posing questions until they find the information they can actually use, both because the tool is intuitive to use and because they don't need to worry about taking up the data team's time for yet another chart update or report.

frontline workers can be fully confident in taking decisive data-driven action.

For instance, if the end goal is to increase customer satisfaction, that mission needs to be translated into specific questions, such as: What happened when we reduced the time it takes to respond online or offered a discount on a product or service? "Those are the level of questions they often need to get down to in order to take action, but they may not appreciate this until they're immersed in all the data that exists in that area," Bean says.

When they can easily and independently query the data, users are also more likely to keep posing questions until they find the information they can actually use, both because the tool is intuitive to use and because they don't need to worry about taking up the data team's time for yet another chart update or report. Removing this hesitance is essential because, often, the granular insight needed to drive the right action only becomes apparent after multiple questions have been posed. "A quarterly sales decline might look really worrisome until they look at the past four years in quarterly sales and see that time frame is always comparatively low," Halper says.

The ability to easily pose questions is where search-based tools come in that allow frontline workers to word queries in a natural way. In fact, when the 2020 TDWI survey asked 208 business and IT professionals which self-service capabilities they would like in the near future, the largest number (48%) said capabilities for search across data and reports.

With the intuitive and familiar approach to querying the data enabled through a search-based interface, Medtronic's Motiramani says, "Users can do a whole lot more without

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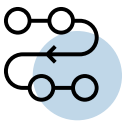

"A lot of organizations pay lip service to changing their behavior, but to become data-driven requires people at all levels of the organization to change," says Randy Bean, founder and CEO of NewVantage Partners.

asking the data team and going back and forth multiple times before they get exactly what they want."

Insights That Lead to Action

At Medtronic, Motiramani has worked closely with the procurement team and other areas of the operations function to become more comfortable with modern self-service tools. In fact, the data team has gone from answering 100% of procurement users' analytics questions to handling just 20% of queries, with the business users themselves taking on 80% of their own data analysis. The data team now has more time available to respond to queries that require deeper analysis.

For example, if a procurement manager needs to know not just the top five most-often-sourced materials but also how much was spent on those for the past year, it's a two-step process that some users might not be completely comfortable carrying out. But most queries aren't that complex. Typical questions that business users answer through self-service analytics range from the number of vendors sourcing a particular raw material or product to the correlation between purchasing volume and price. In some cases, users have discovered per-unit pricing did not decrease when purchase volumes increased, which led to a review of supplier contracts to negotiate better pricing.

In other cases, business users have consolidated their vendors and developed preferred vendor lists to achieve economies of scale, or they've diversified vendors when there was too much dependence on a single source. The latter became particularly important during the supply chain disruptions caused by both the pandemic and the increasing number of unprecedented weather events.

"Our risk team did a phenomenal job when the pandemic hit to be sure we were ready" from a sourcing point of view, Motiramani says. And when a freak snowstorm hit Dallas earlier this year, "we were fully equipped to answer questions on how that would impact anything in the supply chain coming from Texas," he says.

In Medtronic's travel function, business users can now assess how many people are traveling and to which destinations. Such insights have helped the company with financial planning, as travel booking volumes are a leading indicator for travel expenses, which are incurred three weeks after the travel is booked.

In the past, frontline users might have come back to the data team dozens of times for insights such as travel trends by month over the past three years, where people were flying from and to, and where their home office was. "There used to be a lot of back and forth, and users might even refrain from asking because they felt they were taking too much of our time. But now they can do it on their own time," Motiramani says.

Addressing Organizational Change

Despite the advantages of empowering frontline workers with self-service analytics, many organizations really struggle with the organizational and cultural challenges involved in doing so. According to Bean, these challenges are more complex than those related to the technology itself. "There's great technology out there, but the issue is the ability of organizations to be aligned and structured to manage data as an asset, as it flows from production to consumption," Bean says.

According to a January 2021 NewVantage study of 85 respondents at industry-leading businesses, 92% of respondents said the challenges related to self-service analytics have to do with organizational culture, and just 8% said they have to do with the technology itself. Indeed, in the Harvard Business Review Analytic Services survey, lack of effective change management was by far the biggest challenge cited by respondents, with 44% naming it as the top one. **FIGURE 2** "A lot of organizations pay lip service to changing their behavior, but to become data-driven requires people at all levels of the organization to change," Bean says.

There are some specific ways, however, for organizations to not just enable business users with more analytics capabilities, but also—and just as importantly—empower them to take action based on those insights.

The most important action is for businesses to improve their data literacy, both at an organizational and an individual business user level. In a third-quarter 2021 survey by TDWI of 395 data and analytics professionals, only 20% of respondents thought their organizations are data literate, based on how well their users understand data, visualizations, and analytics and can effectively interact with them and communicate them to others to achieve results, Halper says. This finding compares with 68% who said their organization is only somewhat data literate, and 12% who said their organization is not data literate at all.

FIGURE 2

Lack of Change Management Is Top Barrier

Percentage of respondents who named these obstacles among their top three

Source: Harvard Business Review Analytic Services survey, January 2020

Boosting data literacy goes hand in hand with self-service analytics because it means improving business users' ability to understand, interpret, think critically about, and act on the data, in addition to communicating the output, Halper says. "Users need to ask questions of the data and then be able to tell the story around it and defend what they're saying," she explains.

To improve data literacy, some organizations are forming data enablement teams to provide continuous support, while others are providing online learning classes or on-site training. The data literacy strategy needs to calibrate the level and frequency of training with business users' roles and the level of literacy required. "Someone in the call center just needs to understand what they're seeing on the dashboard, while someone in sales or marketing would need to analyze more fluently," Halper says.

"The initial hump is having users understand that self-service analytics are going to help them be more efficient and more productive with the information they want," says Manish Motiramani, director of advanced analytics programs for Medtronic.

Even before getting the skills in place, businesses often need to shift business users' mindsets about using these tools. "People are busy in their day-to-day jobs," Motiramani says, "so they have a tendency to shy away from doing analytics."

One reason for this reluctance may be that doing analytics feels like too big of a change, or that the business user simply doesn't want to do it. Even for teams that are data savvy, it can seem easier to send an email rather than find the answers themselves. But once business users see the tools are intuitive to use and enable them to automatically find their own insights, they readily embrace them. "The initial hump is having users understand that self-service analytics are going to help them be more efficient and more productive with the information they want," Motiramani adds.

He suggests leading by example. One approach he's had success with is to agree to get information for a user as long as the user will watch how it's done with the tool. "We get on a screen-sharing call and walk them through the steps so that they're more inclined to do it themselves the next time," Motiramani says. In this way, it's like teaching someone to fish.

In the end, of course, building a truly data-driven culture versus isolated pockets of data-driven innovation requires not just equipping frontline workers with self-service tools but also empowering them to take action on any insights they discover. At Medtronic, such responsiveness starts with training business users to understand what they're ultimately trying to achieve and know what they intend to do with the information they're looking for.

"It's not enough for them to ask these one-off questions without having a final goal in mind," Motiramani says. He

44%

of respondents to a Harvard Business Review Analytic Services survey said a lack of effective change management and adoption processes was a top barrier to creating a data-driven culture.

"It's great that more and more tools are becoming available to make easier access to data more possible in the same way that today we can go on the internet to purchase anything that meets our needs," says Randy Bean, founder and CEO of NewVantage Partners.

teaches business users the OAI methodology, which stands for "outcomes, actions, insights." For example, an outcome in procurement might be to optimize spend through vendor consolidation. The required actions would be to identify the top three suppliers by spend and mark them as preferred suppliers. Only then do you figure out which insights you need: how many suppliers you buy from in which categories and the spend in the past number of months.

"That's where analytics come in, but that's the third step in the process," he says. "First you need to know your goal—what you want to achieve."

The Future Is Clear

Ultimately, analytics will move in the same self-service direction as commerce has, Bean says. "It's great that more and more tools are becoming available to make easier access to data more possible in the same way that today we can go on the internet to purchase anything that meets our needs."

Organizations that follow the path to self-service and other advanced analytics capabilities will reap the rewards when it comes to business outcomes related to LoB managers' and frontline workers' ability to make faster, more accurate decisions and take actions informed by data.

In the Harvard Business Review Analytic Services survey, in fact, respondents that have invested in empowering and digitally equipping their frontline workers to make good decisions in the moment are substantially more likely to report significant increases in customer engagement/satisfaction (41%), employee engagement/satisfaction (36%), and product/service quality (32%). They're also much more likely than other respondents to report significant gains in productivity (28%), innovation (26%), top-line growth (22%), market position (21%), and profitability (17%) from these efforts.

Halper agrees. "We see in our research that organizations are seeing a top-line impact through their use of advanced analytics," she says. "Self-service is a step in that direction—it's a part of the journey that leads to actual tangible results."

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