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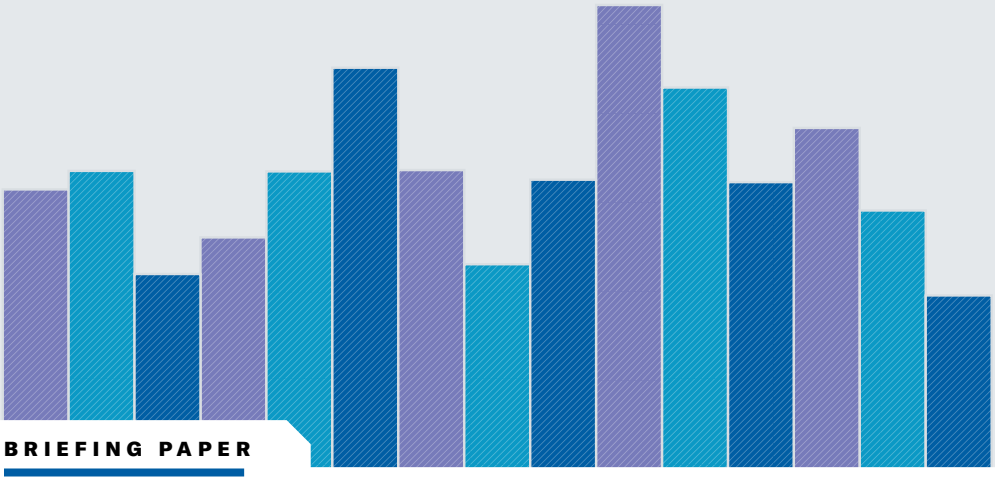

BRIEFING PAPER

DataOps: Aligning Business Goals with Data Strategy

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Digital transformation needs data-driven innovation. As leaders seek to gain insights from their data, however, they quickly run into friction: Data sprawl in silos, a lack of trust in data quality, country compliance mandates, and data spread across data centers and clouds can all act to slow the progress.

But there is light at the end of the tunnel. A path forward is revealed through the astute combination of cloud technologies and intelligent automation, along with the practices of DataOps.

At Hitachi Vantara, we're walking this path every day with our customers. One example: The Municipal Securities Rulemaking Board (MSRB) leveraged cloud-based technology to provide timely reports and analysis on the impact of current events on the financial condition of states and communities around the country, delivering value to investors and other stakeholders.

As this research by Harvard Business Review Analytic Services demonstrates, through DataOps, people, processes, and technologies across the organization begin to align. Teams that were split apart start working together, projects that took weeks to deploy now go live within days or hours, and outcomes are realized more frequently and more reliably.

It has never been more critical to be agile and data-driven than today. I invite you to read this report to learn about proven practices, pitfalls to avoid, and roads to DataOps success.

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DataOps: Aligning Business Goals with Data Strategy

AS A REGULATORY ORGANIZATION, the Municipal Securities Rulemaking Board (MSRB) receives thousands of financial disclosure documents provided by bond issuers when deals are brought to market. But while each of these documents contains hundreds of pages of vital information, for years, the MSRB found itself data rich—and insight poor. In other words, there were plenty of significant references to economic impacts on bond issuers' finances and operations but there was no real way to synthesize these references into meaningful patterns, trends, or outliers to advance the MSRB's mission to ensure a fair and efficient market for investors, issuers, and the public interest.

"Our systems collected the data, but we didn't focus on how we organized the data or data quality issues until we started to realize that we were sitting on all of this insight," says Brian Anthony, chief data officer at the MSRB. "That was really the start of our data journey."

The MSRB isn't alone. Today's organizations are inundated with vast volumes of data. But data silos and a lack of communication between those who produce data and those who consume it can prevent organizations from unlocking its true value. On the one hand, data must be easily accessible across the enterprise for a wide variety of tasks, from shaping highly personalized customer experiences to predicting factory machine mishaps. Yet data's ubiquity places enormous pressure on IT teams to effectively manage and protect sensitive information by carefully governing its availability. The resulting data friction can significantly impede innovation, frustrate employees, and exacerbate data management challenges.

No wonder organizations like the MSRB are embracing DataOps, an agile, process-oriented methodology for developing and delivering analytics that unites data analytics teams with information technology operations across the organization. A powerful practice of combining innovative technologies, processes, and organizational structures, DataOps aims to break down barriers between data operators, who are responsible for managing, securing, and maintaining data, and data consumers—data scientists and analysts who use data to drive innovation, spearhead new projects, and get ahead.

HIGHLIGHTS

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As it stands, many organizations continue to struggle to become more data-driven and glean valuable insights from their data as data volumes grow and complexities multiply. In fact, according to a January 2021 NewVantage Partners survey of C-level executives from 85 Fortune 1000 or industry-leading firms, 41% of organizations are using data and data analytics to compete, down from 48% in 2019, and 49% are currently driving innovation with data, compared to 60% two years ago. **FIGURE 1**

DataOps promises to bridge this gap by addressing the challenges of cross-functional collaboration and ensuring continuous delivery of analytic insights.

"What DataOps methodology seeks to do, at the very highest level, is align data-driven objectives across the organization so that people, processes, and technology are not in conflict with each other anymore," says Paige Bartley, senior research analyst at 451 Research, part of S&P Global Market Intelligence. The desired result, she adds, is that data becomes "a common resource for the enterprise"—a treasure trove of information ready to be parsed for high-value insights for the decision makers of the organization.

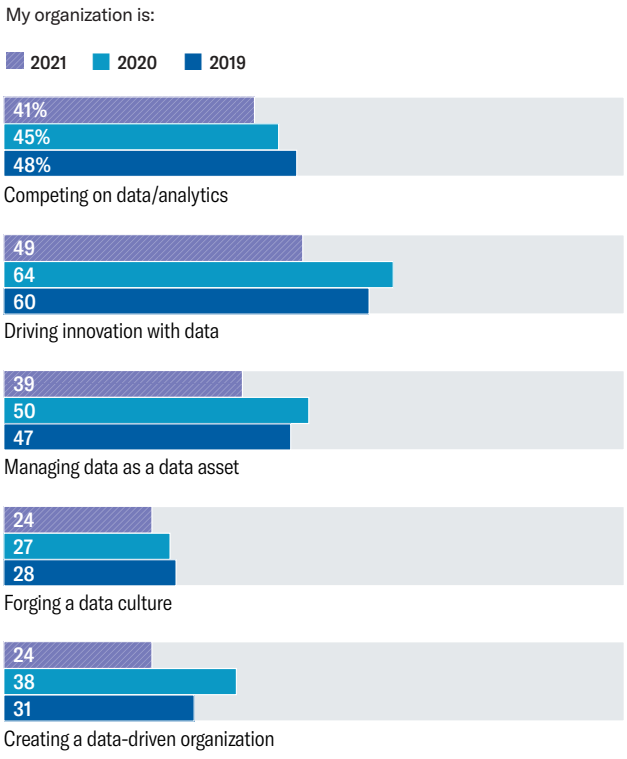
By fostering greater collaboration between groups within the data organization and empowering them to become more data-driven, DataOps not only improves the way data is managed across the enterprise, but it also ensures that the value it creates aligns with the business goals of a company. This value alignment is accomplished by providing 360-degree visibility of data across the organization and establishing data governance principles—factors that can foster trust among disparate teams, allowing them to respond quickly to customer requirements, accelerate time to value, and achieve operational excellence for continuous real-time delivery of data insights and a more collaborative culture.

But these benefits are realizable only if organizations successfully overcome certain cultural and organizational obstacles. Doing so involves educating employees on the people, processes, and technologies needed to break down data barriers. It also takes something more—namely, C-suite leadership—to originate, execute, and support a DataOps strategy.

FIGURE 1

An Opportunity for DataOps

Organizations are struggling to reap the value of data-driven insights



Source: NewVantage Partners survey, January 2021

Competing Goals and Data Growth

A number of factors are driving greater adoption of DataOps, including the competing interests between those that supply and govern data and those that ultimately consume data. According to S&P's Bartley, "Historically, if a company had compliance requirements, the compliance team would be in its own bubble working to meet these requirements. But, at the other end of the spectrum, a data science team would be trying to access that same data to mine it for business insights."

These "conflicting objectives," says Bartley, not only "create frustration" among employees whose work is impeded by another team's stringent data controls, but also can exacerbate data management and security challenges.

"When data scientists or other data consumers find that certain rules, policies, and controls on data prevent them from effectively doing their job in an efficient manner, they will often start to engage in maladaptive workaround behavior that undermines the entire effort," she warns. "An example would be adoption of unsanctioned shadow IT and freely downloadable SaaS [software-as-a-service] products that can further disrupt the effective management and governance of data within the organization."

The explosive growth of data and its potential to become unwieldly are also prompting organizations to embrace a DataOps strategy. "When you look at the current volume, velocity, and variety of data within an organization today, there is no consistent way to scale up your data management or data governance effort without some level of automation," says Bartley. "There just isn't enough human power to exert

consistent control on that information manually, even if you were to hire all of the available talent in the world."

DataOps addresses this scaling issue by enabling the rapid, automated, and secure management of data. Data processes, such as extracting data, data prep, data quality, and data management infrastructure, can be automated, freeing IT to focus on core competencies—a critical advantage in an era of vast data volumes and scarce IT resources.

A Key for Unlocking Value

For some organizations, though, DataOps is less an IT elixir than a prime business opportunity to derive real and lasting value from the information it collects. For instance, after deploying a cloud-based analytics platform, the MSRB's Anthony says, the Washington, D.C.-based organization discovered plenty "of important information locked inside both the structured and unstructured data" it gathers from bond issuers, including critical information "about climate risks, cyber risks, Covid-19 disclosures, and new issuance trends."

Using a DataOps strategy to search, manage, and analyze this data allows the MSRB to uncover deeper insights faster than ever before and gain greater transparency into the market. For example, Anthony says, the company can now determine how many bonds are entering the market that are labeled as environmentally friendly "green" bonds or quantify the number of disclosures being made by issuers that reference the economic impact of Covid-19 on operations and finances—information that can be used to anticipate market trends and help inform best practices for disclosure.

Another upside of DataOps is its ability to speed up the entire data analytics process. DataOps accomplishes this acceleration by quickly moving code from development environments into production, as well as by establishing policy-driven controls that reassure data users that the data they need is exactly what they require when they require it, and that it's stripped of all personally identifiable information.

"In a competitive ecosystem where companies are dealing with business threats and competitors from adjacent markets, they have to be leveraging data effectively to define their competitive advantage," says Bartley. "Anything that slows down worker productivity with data is really a detriment to that overarching strategy." However, by enabling productivity and collaboration around data sources in a secure and governed way, DataOps can help deliver near real-time data insights.

Strategies for Success

For all DataOps' advantages, there are considerable organizational and cultural obstacles companies must overcome to reap its rewards. Chief among these challenges is the task of uniting two warring factions: those responsible for protecting data by all means necessary and those eager to experiment with data in the name of innovation.

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"Data is owned by the business, yet the infrastructure and the capabilities needed for processing it are within IT," says Simon Trewin, cofounder of Kinaesis, a DataOps consulting and services company based in the U.K., and author of *The DataOps Revolution: Delivering the Data-Driven Enterprise*. "The only way to really find a solution that works is to combine these two forces together so that the business works hand in hand with the IT function, collaborating on data analytics."

Trewin says one way that organizations can accomplish this collaboration is by educating employees on the people, processes, and technologies required for DataOps success.

Anthony agrees on the importance of educating employees on DataOps. To ensure his DataOps team has "the right balance of business expertise and data know-how," he says, the MSRB offers its employees a combination of hands-on learning, online courses, and mentorship opportunities.

Employee buy-in is so necessary because business acumen is particularly important when it comes to DataOps, especially in the preliminary stages of the journey to achieve it. Many organizations are striving to extract value from vast treasure troves of data. But achieving specific business outcomes with this information requires knowing what story the organization wants to tell with its data. Is the goal to discover new and untapped markets, or to identify areas for cost optimization and supply chain efficiencies?

"Once we know the story that we want to tell with the data, we can think about how we need to organize the data that tells that story," says Anthony. "Next, we can think about the processes needed to get the data in the right organizational structure and apply the necessary technology skills to ramp up to scale. It's really a combination of understanding the business, understanding how best to organize data, and then applying technology skills as an accelerator for all of these things."

People's Value in a Digital Endeavor

But even the best-educated workers are likely to resist DataOps if they fear their jobs are in jeopardy. DataOps automates

the integration, testing, and deployment of data pipelines and analytics models, significantly reducing the need for manual and repetitive tasks. However, this boon for speed and productivity can foster resistance among employees. Indeed, the NewVantage Partners survey reveals that 92% of executives cite people, business processes, and culture as a main barrier to becoming data-driven, compared to a mere 8% of respondents who cite technology as a hindrance. **FIGURE 2**

"Any sort of introduction of automation into a process can create some initial hesitancy and pushback from individuals who may feel that their existing role will lose some of its influence and security," says Bartley. "As an organization, you really have to think about the individuals who are involved in the usage of technology and data in their daily roles, what their motivations are, and how to demonstrate to them that automation is an opportunity for them to focus on more important things and not to see DataOps as a threat to their existence."

For instance, Bartley says, while DataOps can help automate commonplace data governance activities, such as classifying data, "gray-area cases can emerge where it's not clear whether a specific piece of data or a document belongs to a certain category. Ambiguous regulatory guidelines can compound these challenges." Under these more challenging circumstances, she says, human expertise is critical to classifying and categorizing data so that it's easily searchable and ready for use in production.

Leadership is vital to getting organizations behind DataOps efforts and to getting employees behind organizations. But it also plays a key role in the successful design and deployment of DataOps in any organization. In many cases, Bartley says, "a chief data officer is commonly adopted as a role to bridge an enterprise-wide vision of data usage, aligning more reactive needs such as compliance requirements with more proactive objectives such as the ability to quickly and effectively leverage data for insight."

Today's chief data officers typically report directly to the CEO, but reporting structures can vary depending on an organization's data maturity and strategic objectives. For example, Bartley says, "Chief data officers who report directly to the CEO are often more strategic and visionary, whereas chief data officers who report to a chief information officer or chief technology officer tend to be more tactical and requirements-oriented. However, the 'right' chief data officer approach likely depends on an organization's needs." For instance, Bartley says, organizations further along in their DataOps journey may be more likely to seek out more strategic and high-level chief data officers to serve as "peacekeepers" with the ability to "see the big picture and know how to help different groups within the organization align their business objectives."

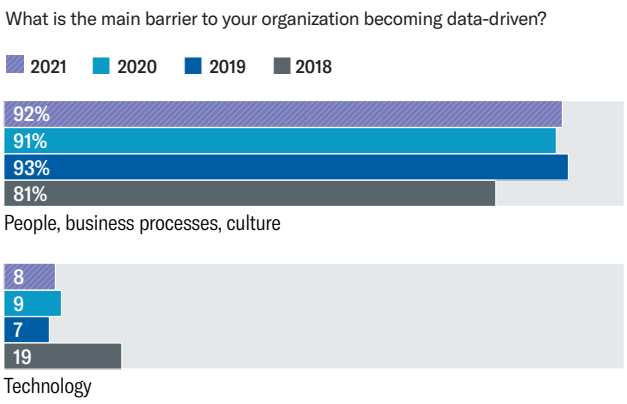
Anthony is one such bridge builder. As chief data officer at the MSRB, Anthony says that while he works closely with the company's chief technology officer, "ultimately, I believe DataOps is more of a team sport. Our ability to provide insight and leverage DataOps is really about our entire organization maximizing what we can do with data and data insights."

Central to Anthony achieving this goal is ongoing C-suite support—a critical component given the cultural and organizational upheaval that DataOps often produces. "Our board of directors, CEO, and chief operating officer are all very passionate about DataOps," says Anthony. "It's not a matter of convincing them; it's a matter of when we are ready to move forward with DataOps."

FIGURE 2

The Role of People in DataOps Success

Companies overlook the strategic importance of managing employees



Source: NewVantage Partners survey, January 2021

From Data-Rich to Data-Driven

Certainly, gaining C-suite support, educating employees on the value of DataOps, and determining data-driven business objectives are difficult feats for any organization, regardless of maturity. But according to Kinaesis' Trewin, it's a rewarding endeavor. "The investment in establishing a better methodology and better approach to data will pay off as projects become more successful," he says. "With DataOps, companies can begin to build a foundation for leveraging data more effectively."

The possibilities are endless: By overcoming data friction, organizations can convert repositories of information into a valuable resource for insights that can lead to new markets, greater customer loyalty, and faster innovation. "[Through DataOps], we discovered how to make our data searchable and provide insights back out into the marketplace," says Anthony. "That really opened our eyes to what was possible from a data perspective."

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