DataOps Dilemma: Survey Reveals Gap in the Data Supply Chain

Demand for Data Is Growing, But So Are DataOps Challenges

Black & White

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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.

About the Author

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Paige is a Senior Research Analyst for the Data, AI & Analytics Channel at 451 Research, a part of S&P Global Market Intelligence, covering core data management topics. Key themes include data privacy, data governance, data integration, metadata management, data quality and master data management. She has experience covering a broad range of technologies spanning the Data, AI & Analytics stack, from databases to self-service analytics.

In her current research, Paige is analyzing the need for information governance to maximize the value of enterprise data amid proliferating global regulatory requirements and rising consumer expectations for data stewardship. With data privacy and compliance as a specialty focus, Paige explores how the enterprise can align technical requirements with business strategy, enabling more profitable and compliant leverage of data.

Early in her career, Paige worked on the vendor side, providing marketing and strategy for ZL Technologies, an information governance provider that specializes in the management of unstructured data for compliance, legal and archiving needs. Prior to working at 451 Research, she was a Senior Analyst at Ovum (now Omdia).

Paige received her Bachelor of Science degree in psychology and neuroscience from Duke University, and a Master of Management Studies (MMS) degree from the Duke University Fuqua School of Business.

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Introduction

Becoming more data-driven in business strategy and decision-making is a ubiquitous objective for organizations today. Whether the organization is an established brand sitting on decades of historical business data or an innovative startup experimenting with new data-derived business models, the need to maximize the value of data-driven insights is a competitive imperative. The challenge, however, is speed. Insights and business value cannot be generated from data quickly unless it can be shared, modeled and analyzed in a frictionless manner. Yet, according to data professionals, underlying problems in people, processes and technology prevent real-time data use in most organizations today.

The survey associated with this report focused on identifying the limiting factors in the data 'supply chain' as it relates to the overall DataOps methodology of the organization. DataOps itself is the more agile and automated application of data management techniques to advance data-driven outcomes, while the data supply chain represents the technological steps and human-involved processes supporting the flow of data through the organization, from its source, through transformation and integration, all the way to the point of consumption or analysis.

In this data supply chain, there are two primary camps of data professionals, with varying titles and responsibilities: data 'suppliers' and data 'consumers.' By looking at the habits, perspectives and technology usage of these two groups, the survey examines the gaps, points of friction and resource mismatches in the data supply chain.

The findings are clear. As data workflows and processes have become more complex over time – and as organizational demand for data grows – there are clear points of friction in the data supply chain. Chief among them is that data suppliers who have limited resources, skills shortages and little automation are being tasked with delivering a steady stream of relevant data to a growing number of data consumers.

External factors, too, have complicated data-driven insight initiatives. As regulatory changes around the world bear down across industries, ensuring the privacy, security and governance of this data has become paramount, further complicating workflows and responsibilities. Even the universal march to adopt cloud-based data technologies has been hampered by concerns about security, compliance and privacy functionality.

However, this brave new world of requirements need not slow down innovation or insight. In exploration of these survey results, this report looks at how organizations are coping today, and how shared pain points across business functions are areas of opportunity for technological and cultural improvement.

Key Findings

- **Data security and privacy restrictions inject friction into the data supply chain.** Well over three-quarters (84%) of respondents said they believe data privacy and security requirements will limit access to data at their organizations over the next 24 months.
- **Data quality is becoming more important than data quantity.** Nearly all (90%) survey respondents reported that data quality and trust will become more important than data volume/quantity to their organization over the next 24 months.
- **The role of the chief data officer is emerging as a strategic anchor for data-driven efforts.** Among all survey participants, 60% reported their organization currently has a CDO, though differences in reporting structure exist.

- **The data supply chain is slowed by two key barriers: skills shortages and lack of product automation.** Among data suppliers, 38% reported 'lack of personnel or skills' and 29% reported 'not enough automation available' as top pain points. Also, 55% of all respondents either 'somewhat' or 'completely' agreed that data is often stale or out of date by the time it is consumed or analyzed.
- **DataOps has emerged but remains immature in most organizations.** Nearly all (90%) organizations report *not* having an 'optimized' DataOps strategy. While most (85%) said that their strategy is accelerated, emerging or nascent, few believe they have achieved DataOps maturity.
- **Cloud adoption is increasing.** Over three-quarters (76%) reported that their organization will use cloud data technology more frequently for storage, compute and sharing over the next 24 months.
- **Security issues are a barrier to cloud adoption for many organizations.** For respondents from organizations slower to adopt cloud-based technologies, the top three reported barriers to adoption have to do with security (43%), compliance (40%) and data privacy (35%).
- **Regulated organizations are outpacing non-regulated firms in terms of data innovation.** Organizations subject to data privacy and protection regulations, such as GDPR, are *more* likely to report having a cloud-first strategy, face fewer challenges with data access and use, are more likely to have a dedicated data engineering team, and more frequently provide self-service analytics programs.

Methodology

451 Research surveyed 525 enterprise practitioners in the US, Canada, UK, Germany and France who identified as either having a hands-on role with the use of data within their organization, or who directly influenced data-centric functions within their organization. Participants were restricted to large organizations with 1,000 or more employees, and all participants indicated that their organization had some form of cloud data platform (such as a cloud data warehouse) in production. The survey research included participants across most common industries that compete with data, with representation of roughly 10% from the finance or banking, healthcare and retail industry verticals.

The survey was designed to understand the organizational dynamics, responsibilities and potential points of friction in the enterprise's data 'supply chain.' The data supply chain – as characterized by the flow of data from source apps and systems, through the process of transformation and integration, to the point of delivery and final consumption and analysis – is represented by the handling of data across numerous employee roles and technological tools. The web-based survey was conducted in May 2021.

Rising to the Challenge: Data's Rise in Importance

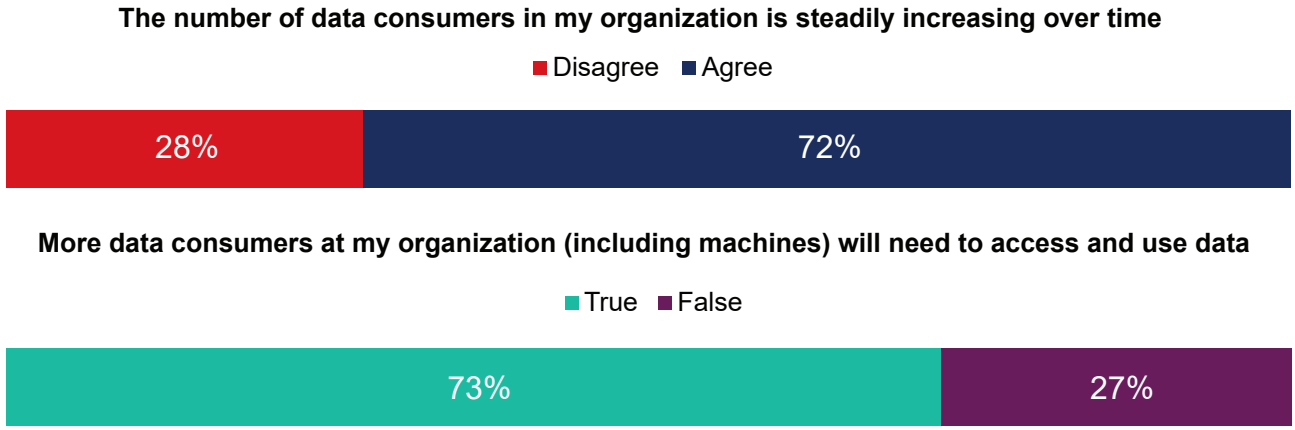
It is often said that data is the new gold, the new oil or the new frontier in business advantage and competitive sustainability. Refrains that 'every company is a technology company' have become so common that they are simply accepted as fact. Yet, like any commonly accepted knowledge, it is useful to put these assumptions into perspective with substantiated facts and statistics. In this survey, we initially set out to measure some baselines: the importance of data, the perceived growth in data's importance, and the individual dependency on data within today's organizations.

The survey also looked at how organizations are adopting DataOps. We measured DataOps maturity both directly and indirectly by asking participants to rank their organization's approach to more agile and automated approaches to data management, as well as by looking at technology trends and practices typically associated with DataOps efforts.

Data is more important than ever and is becoming even more so. For survey participants who had been at their organization for at least two years, 65% reported that data has become more important in their role today than it had been over the previous 24 months. Asked to predict what the next 24 months might look like at their organization, 71% of survey participants said they believe data will become more important to their organization's decision-making. Responses were largely consistent across industries and roles, indicating that this trend is not confined to industry verticals traditionally associated with the early adoption of technology, or just to data supplier or data consumer perspectives.

Amid this growth in data's importance, the sheer number of individuals within organizations who need to access and use data is understandably expanding as well. There are more data consumers than ever within the average organization. Technology has assisted this expansion, with new platforms and tools providing routes of data consumption. While direct queries – such as SQL – are still common, other methods such as self-service visualization, self-service data prep, data science tools and platforms, and even internal data marketplaces were all reported by survey respondents as ways they consume data. A total of 72% of respondents said they either 'somewhat' or 'completely' agree that the number of data consumers in their organization is steadily increasing over time. Close to three quarters (73%) said more data consumers – both human and machine – will need to access and use data over the next 24 months.

Figure 1: The Importance of Data in Organizations



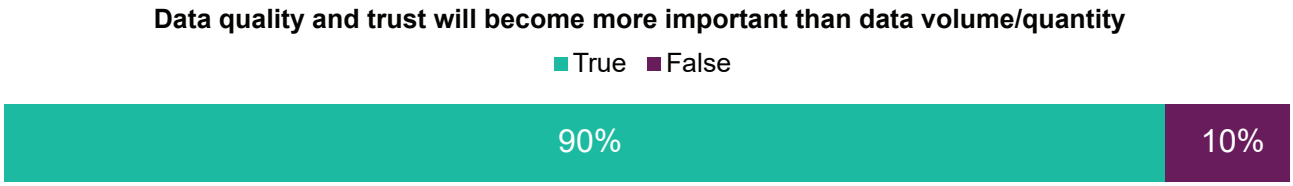
Q: Considering your organization's strategy over the next 24 months, please indicate whether you believe the following statements to be true: The number of data consumers in my organization is steadily increasing over time. More data consumers at my organization (including machines) will need to access and use data.

Base: All respondents (n=525)

Source: 451 Research and Immuta custom report

Another nod to data's importance is the contemporary emphasis on data quality. After years of 'big data' fervor, it appears that organizations (and data consumers themselves) are realizing that data volume is no replacement for data integrity and relevancy. A staggering 90% of survey respondents reported it was 'true' that data quality and trust would become more important than data volume/quantity to their organization over the next 24 months.

Figure 2: Data Quality and Trust



Q: Considering your organization's strategy over the next 24 months, please indicate whether you believe the following statement to be true: Data quality and trust will become more important to my organization than data volume/quantity.

Base: All respondents (n=525)

Source: 451 Research and Immuta custom report

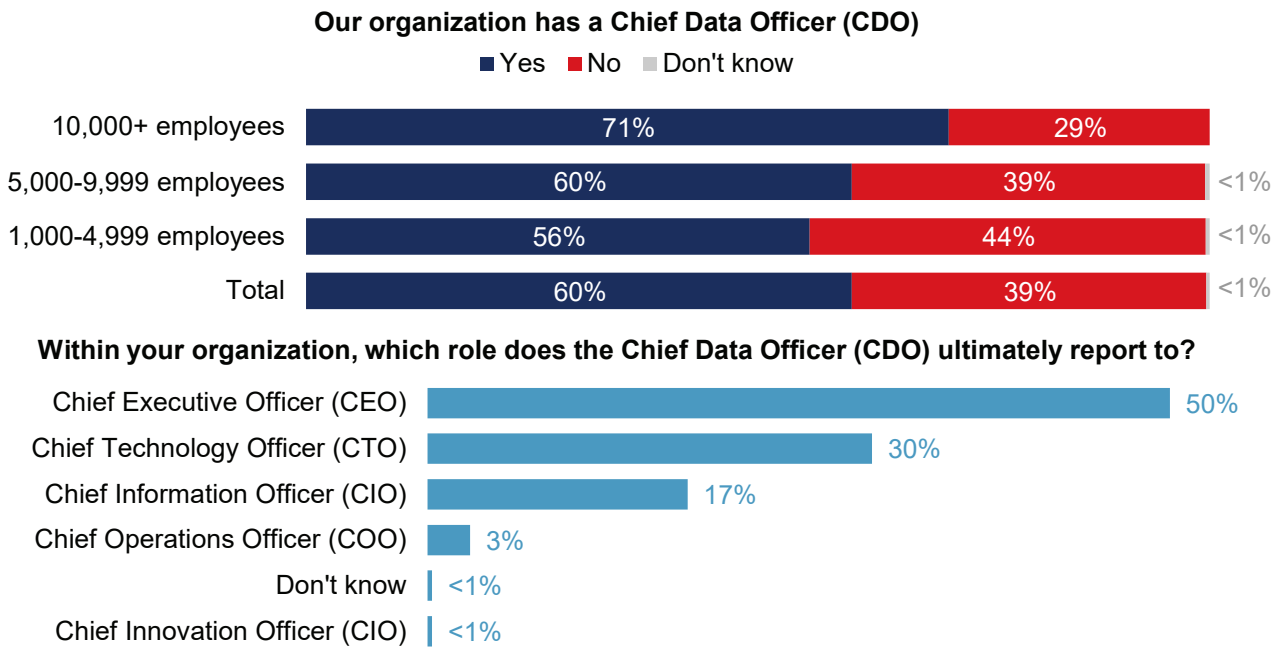
In the data supply chain, then, it seems that the objective is increasingly ensuring trust in the information that is ultimately analyzed and consumed for insight. Low-quality data, after all, can be worse than no data: at best wasting time and effort, and at worst undermining organizational decision-making and risking regulatory fines and reputational damage.

While data leverage within the walls of organizations is rapidly rising in importance, sharing data externally is also seeing a modest uptick. The likelihood of sharing data externally was more pronounced among respondents from very large enterprise organizations (10,000+ employees), suggesting a trend among more mature organizations that are collaborating and sharing data with business entities such as partners and suppliers. A significant minority of total survey respondents, as well as nearly half (49%) of survey participants from these larger organizations, reported sharing data outside of the organization more now than they did over the last 24 months.

More Data, More Problems? The Question of Leadership

All this data-driven activity begs the question: who is in charge of data-driven objectives and initiatives? While the answer may not always be clear for every organization, the role of the chief data officer (CDO) is emerging as a likely strategic anchor for these coordinated efforts.

Figure 3: The Rise of the Chief Data Officer



Q: Does your organization have someone in the role of chief data officer?
Base: All respondents (n=525)
Q: Within your organization, which role does the chief data officer ultimately report to?
Base: Those respondents whose organizations have a chief data officer (n=317)
Source: 451 Research and Immuta custom report

Among all survey participants, a full 60% reported their organization currently has a CDO. The likelihood of having a CDO is correlated with organization size: while 71% of respondents from organizations with 10,000+ employees reported having a CDO, only 56% of respondents from organizations with 1,000-4,999 employees reported having one.

These CDO percentages are an increase from those found in an independent 451 Research survey conducted in the fall of 2020, suggesting that the CDO role is becoming more common and strategically important. Based on 451 Research's Voice of the Enterprise: Data & Analytics, Data Management & Analytics 2020 survey, only 41% of respondents across industries and organization sizes reported their organization currently had a CDO or had immediate plans to employ a CDO. While the demographics of the independent 451 Research survey were slightly different – most notably in allowing organizations of all sizes to participate – the custom survey conducted for the purposes of this report suggests that the CDO has become mainstream among organizations with 1,000+ employees that have some form of cloud data platform (such as a data warehouse or cloud data science platform) in production. Where these organizations go, it is likely that others will soon follow.

The Gap in the Data Supply Chain

As data becomes more important, the overall volume of data grows and the number of data consumers steadily increases. As a result, the strain on the organization's data supply chain grows as well. Factors such as the need for real-time data, multicloud and hybrid architectures and skills shortages all lead to complications in reliably delivering relevant data at the speed of business.

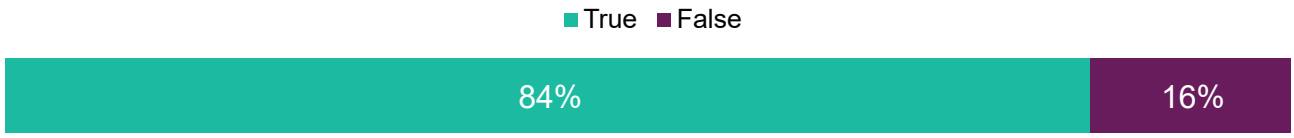
In fact, our survey confirmed these general assumptions. The data supply chain has a major gap between data 'supply' and data 'demand' within the average organization. Despite DataOps ambitions, organizations cannot always fulfill data demand fast enough with current resources and tools on the data supply side of the equation. This gap causes undue pressure on data supplier roles, perpetuates frustration for those in data consumer roles, and ultimately undermines business agility and the ability to make data-driven decisions. This all happens while the volume of data and number of data sources are both growing.

Primary Challenges in the Data Supply Chain

While there are a multitude of possible causative factors for this data supply chain gap, the survey identified three primary categories of challenges that appear to top the list in exacerbating underlying inefficiencies.

1. **Security, compliance and governance restrictions**
   A large majority (84%) of survey participants indicated that their organization was subject to some form of data protection or data privacy regulation, such as GDPR or HIPAA, giving a broad perspective on the practices and procedures that accompany these requirements. Thinking about time spent at their organizations over the last 24 months, 86% of total survey respondents reported it was "true" that security and privacy rules have become stricter over time, making it harder to access and use data. Looking forward, the future is hardly any brighter. A similar number, 84%, believed it was true that data privacy and security requirements will limit access to data at their organizations over the *next* 24 months.

Figure 4: Data Privacy and Security Requirements Limit Access to Data



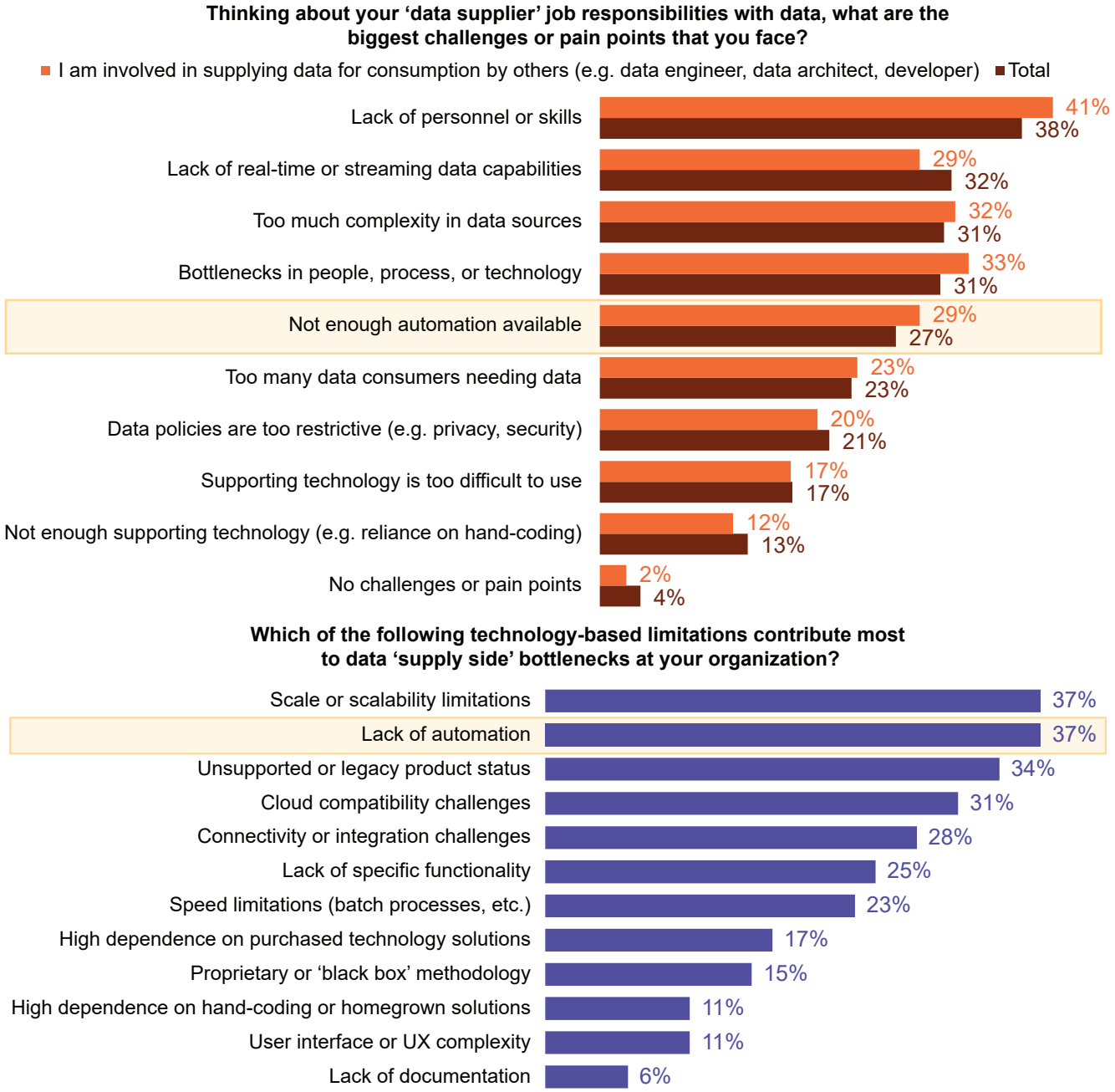
Q: Considering your organization's strategy over the next 24 months, please indicate whether you believe the following statement to be true: Data privacy and security requirements will limit access to data at my organization.

Base: All respondents (n=525)

Source: 451 Research and Immuta custom report

2. **Skills shortages**
   Often, the skills discussion in organizations is focused on the data 'consumer' side of the equation, with emphasis on employee data literacy programs and ease of use for self-service software such as data visualization tools. However, as the number of trained data consumers grows and data visualization tools become easier to use, the tide seems to have turned. Now, the traditionally more technical data 'supplier' roles are falling behind the consumer demand. More than a third (38%) of those in a data 'supplier' role reported that 'lack of personnel or skills' – the top response – is their biggest challenge/pain point within their job responsibilities (see Figure 5 on next page). Personnel shortages are increasingly leaving those in data supplier roles feeling stretched thin.
3. **Lack of technological/process automation**
   Automation is frequently hailed as a way to alleviate the burden of a skills shortage. However, organizations still seem to be struggling with automation, or at least they are slow to adopt available data automation technologies. The pain is felt from both ends of the data supply chain. On the data supply side, 29% of survey respondents ranked 'not enough automation available' as a key pain point pertaining to their job responsibilities. And, on the data consumption side, 37% reported that technology-based bottlenecks were due to lack of product automation, suggesting complexity in the data consumption UX/UI and dependence on technical skills.

Figure 5: Lack of Automation Is a Pain Point



Q: Thinking about your 'data supplier' job responsibilities with data, what are the biggest challenges or pain points that you face?

Base: Total = respondents involved in supplying data for consumption by others (e.g., data engineer, data architect, developer) OR respondents in a leadership role or oversee aspects of both the data supply side and consumption side (n=300); those involved in supplying data for consumption by others (n=250)

Q: Which of the following technology-based limitations contribute most to data 'supply side' bottlenecks at your organization?

Base: Respondents involved in supplying data for consumption by others (e.g., data engineer, data architect, developer) OR in a leadership role or oversee aspects of both the data supply side and consumption side AND said 'Bottlenecks in people, process or technology' are a pain point AND agreed that their organization's bottlenecks are caused by technology-based limitations (n=65)

Source: 451 Research and Immuta custom report

Death by Papercuts: Other Data Supply Chain Challenges

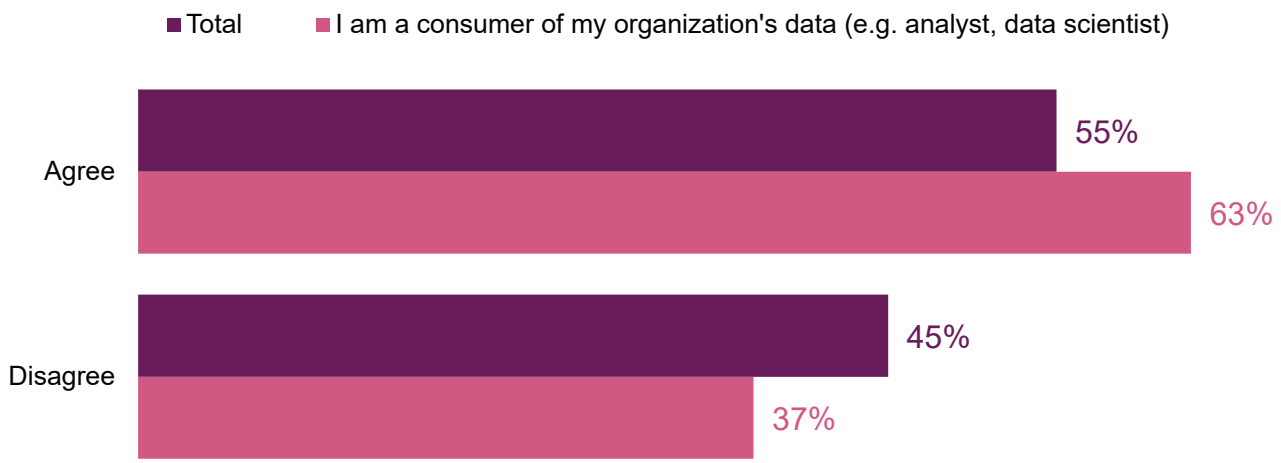
While the top three challenges in the data supply chain alone are significant, there are also a multitude of more nuanced factors that can impede organizational progress. Reported barriers and pain points speak to differing maturity levels in the data supply chain and data leverage practices within organizations. The move to the cloud is a good example of this. Cloud migration is still in process – incomplete, for many – and those that have low levels of maturity often struggle to see tangible ROI from their efforts.

Another challenge with the self-service model of data access and use is that it is simply not as common as one might assume, especially considering that the number of data consumers within the average organization is growing. Simply put, self-service models are difficult to support when there are points of friction or gaps in the data supply chain. Overall, less than half (48%) of survey respondents either 'somewhat' or 'completely' agreed that their organization provides self-service data access and use. However, there is considerable variation; the most data-driven organizations are much more likely to have self-service programs. Among respondents who reported that their organizations make nearly all strategic decisions based on data, 85% said that their organization provides self-service data access and use. Data-driven organizations – which tend to score higher on all measures of data management and governance – are better suited to consistently deliver the relevant data needed to support these self-service models.

To complicate matters, data is a living entity in the DataOps lifecycle, flowing through the organization and changing over time. The advent of streaming and real-time data sources has proven to be particularly challenging from a data supply chain perspective. One of the pain points that is evident from the survey research is that data is typically available at a 'point in time' rather than in real time, limiting its usefulness in agile decision-making.

Overall, 55% of survey respondents either 'somewhat' or 'completely' agreed that data is often stale or out of date by the time it is consumed or analyzed within their organization. When looking at data consumers specifically, the percentage that agreed jumps to 63%, indicating that those in data consumer roles feel the pain point of stale data most acutely.

Figure 6: Data Is Often Out of Date by the Time it is Used



Q: Please indicate the level with which you agree or disagree with the following statement about your organization: By the time data is consumed or analyzed in my organization, it is often stale or out-of-date.

Base: Total = all respondents (n=525); consumers of organization's data (n=225)

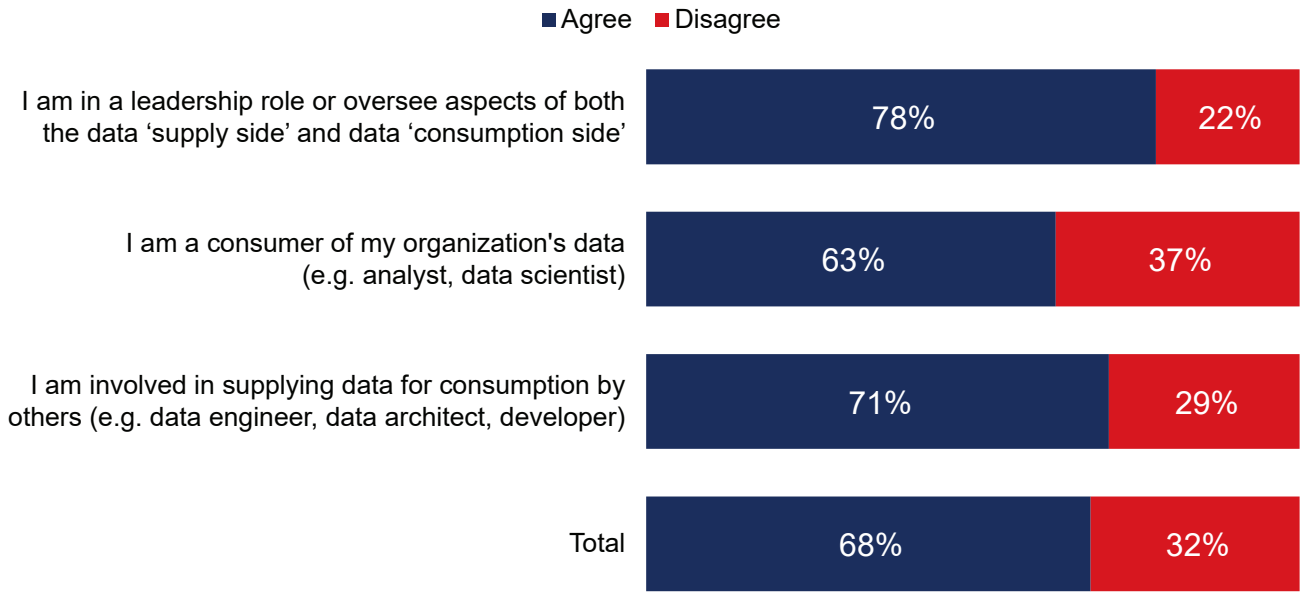
Source: 451 Research and Immuta custom report

When these personas were asked about the biggest challenges and pain points associated with their job responsibilities, 38.5% reported that 'data is only available at a point in time, not real time,' the top response. Lack of automation in the management and synthesis of data sources can hinder the availability of timely datasets.

The result of gaps and challenges in the data supply chain is often measured by human frustration and dissatisfaction. However, according to the survey, frustration is not experienced homogeneously across roles. Data suppliers, bearing the brunt of constant requests for data from data consumers, are more sensitive to perceived frustration. While 62% of respondents who self-identified as data suppliers either 'somewhat' or 'completely' agreed that data consumers in their organization express frustration in their attempts to access/use data, only 24% of those who self-identified as data consumers agreed. Data consumers simply may not be aware of the levels of frustration they are conveying to data suppliers, who are already stretched thin and working amid teams suffering from skills shortages. What seems like a routine request from a data consumer's perspective may be interpreted as a frustrated or harried request from the perspective of data suppliers.

Frustration often breeds ingenuity and workarounds. Data consumers, often not getting what they need directly from data suppliers, commonly turn to free and 'freemium' cloud-based tools for assistance, with or (likely) without sanctioned approval. Of those who self-identified as data consumers, 63% either 'somewhat' or 'completely' agreed that free or 'freemium' cloud-based tools help them complete tasks related to their roles.

Figure 7: Data Consumers Turn to 'Freemium' Cloud-Based Tools to Complete Work



Q: Please indicate the level with which you agree or disagree with the following statement about your organization's cloud strategy: Free or 'freemium' cloud-based tools help me complete tasks related to my role.

Base: All respondents (n=525)

Source: 451 Research and Immuta custom report

It should go without saying that unsanctioned use of software and tools creates challenges for security and governance, complicating the job for IT roles and introducing risk. In this sense, challenges in the data supply chain can spawn new IT and security challenges as well, creating a vicious cycle.

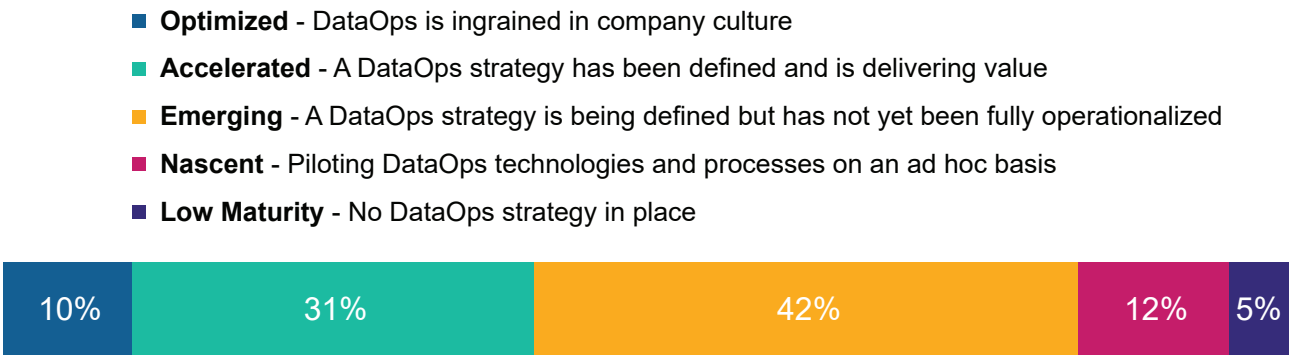
Organizational Dynamics and Striving for Success

Closing the gap in the data supply chain requires work and investment across people, processes and technology. Organizations are hiring CDOs, developing DataOps strategies and implementing cloud technologies to close the gap and build modern, automated data supply chains. However, there are differences in how organizations approach solutions and how advanced they are. The survey revealed some of these subtleties, showing variances in how organizations are dealing with data supply chain challenges.

DataOps as a Proxy for Data Supply Chain Maturity

DataOps maturity is a good benchmark for overall technological maturity: how far along is an organization in its application of agile and automated approaches to data management? Based on the survey, DataOps methodology is well recognized and sought out, yet few organizations are optimized in their strategy. While a small number (5%) of survey respondents reported that their organization has 'low maturity' with no DataOps strategy in place at all, 90% of respondents said their organization falls short of 'optimized' DataOps maturity.

Figure 8: Level of DataOps Maturity



Q: How you would characterize your organization's level of maturity with respect to 'DataOps,' defined as applying agile and automated approaches to managing data (similar to how DevOps applies agile and automated approaches to manage software delivery).

Base: All respondents (n=525)

Source: 451 Research and Immuta custom report

Most organizations fall in the middle of the maturity curve, with 'emerging' DataOps strategy being the most common response. Higher DataOps maturity, in turn, was correlated with other investments to improve data supply chains, such as making technological efforts to simplify data access and usage, as well as hiring additional people to help ensure data availability and access.

Respondents from organizations with 'emerging,' 'accelerated' or 'optimized' DataOps maturity were also more likely to report having a chief data officer, with 65% of respondents across these respective categories reporting a CDO, versus only 49% of respondents who reported a 'nascent' or 'low maturity' DataOps response. As discussed previously, the role of the CDO has increasingly become a proxy for data leadership, with 60% reporting their organization has a CDO. However, the CDO is neither saint nor savior, and there can be enormous variance in the reporting structure and responsibility of individual CDOs within different organizations.

Half (50%) of respondents who said their organization has a CDO also indicated that the CDO reports directly to the CEO, which may suggest the responsibilities assumed are more high-level and visionary in these cases. But, other common positions that the CDO reports to include the CTO and the CIO, in which cases the role may potentially be more technical and requirements-oriented. Which approach is ultimately 'better' is subjective, and the correct answer likely has to do with the maturity of the organization. While a tactical and requirements-oriented CDO may be highly appropriate for an organization that is just beginning to establish best practices and procedures for data – when attention to detail is critical – a more visionary CDO may be more appropriate for an organization that already has demonstrated success with data and is looking to adapt business models long term.

Cloud Technology: Adoption and Barriers

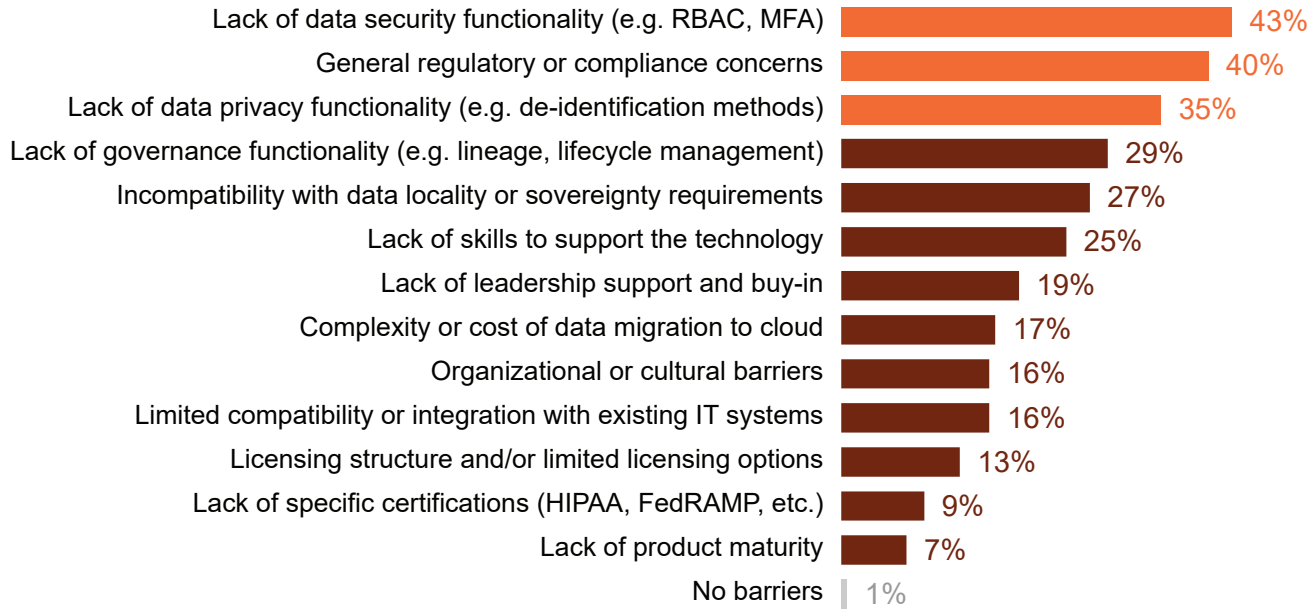
Many organizations are adopting cloud-based technologies to streamline their data supply chains and provide real-time data. Over three-quarters (76%) of survey respondents reported that their organization plans to use cloud data technology more frequently for storage, compute and sharing over the next 24 months. The minority that disagreed likely fall into two clear bifurcated camps: those who likely belong to cloud-conservative or slow-to-adopt organizations and, at the other end of the spectrum, those who have already become cloud-first, leaving little left to adopt.

Cloud adoption differences were another axis upon which respondents' organizations could be measured, and cloud adoption varies based on multiple organizational factors. Respondents from more data-driven organizations were more likely to report 'cloud-forward' adoption strategies versus their peers from organizations that make few strategic decisions based on data. But among respondents from organizations where few strategic decisions are data-driven, the most common response for cloud strategy was 'cloud-conservative,' at 37% of total respondents.

Perhaps unsurprisingly, then, leadership's articulation of cloud vision and roadmap is clearer at highly data-driven organizations. At organizations where nearly all strategic decisions are data-driven, 78% of respondents either 'somewhat' or 'completely' agreed that their organization's leadership has articulated a clear vision and roadmap for adopting cloud data management technologies. That number falls to 65% at organizations where few strategic decisions are data-driven – lower, but still promising, suggesting that even less-data-driven organizations are looking to adopt cloud data technologies to improve data operations.

For those organizations that are slow to adopt cloud-based technologies, the top challenges associated with cloud adoption were all security, compliance and data privacy concerns. The survey isolated the group of respondents who reported their organization has a 'cloud-conservative' or 'cloud skeptic' strategy, asking them to identify their organization's primary barriers to cloud adoption. Topping the list were lack of data security functionality (43%), general regulatory or compliance concerns (40%) and lack of data privacy functionality (35%).

Figure 9: Primary Barriers to Cloud Adoption for Cloud-Conservative Companies



Q: In evaluating technology products and infrastructure, which of the following reasons are currently primary barriers to cloud adoption for your organization? Select all that apply.

Base: Respondents who identified as 'cloud-conservative' or 'cloud-skeptic' (n=155)

Source: 451 Research and Immuta custom report

While cost and/or budget are often cited as top challenges in surveys whenever they are presented as options, this was not the case with cloud adoption. 'Complexity or cost of data migration to cloud' was only reported as a primary barrier to cloud adoption by 17% of respondents, paling in comparison to security and governance-related concerns.

Surprisingly, the survey also suggests a large gap in cloud adoption on both the supply and consumption sides of the organization. This is despite the fact that this report only included individuals from organizations that had some form of cloud data platform (such as a cloud data warehouse or cloud data science platform) in production. On the data supply side, 28% of survey respondents either 'somewhat' or 'completely' *disagreed* that the tools and technologies used by their organization's supply side roles were largely cloud-based. On the data consumption side, cloud usage was even more conservative, likely speaking to the prevalence of on-premises and desktop analytics tools. Of those surveyed, 40% either 'somewhat' or 'completely' *disagreed* that the tools and technologies used by their organization's consumption-side roles were largely cloud-based.

The Curious Case of the Regulated Enterprise

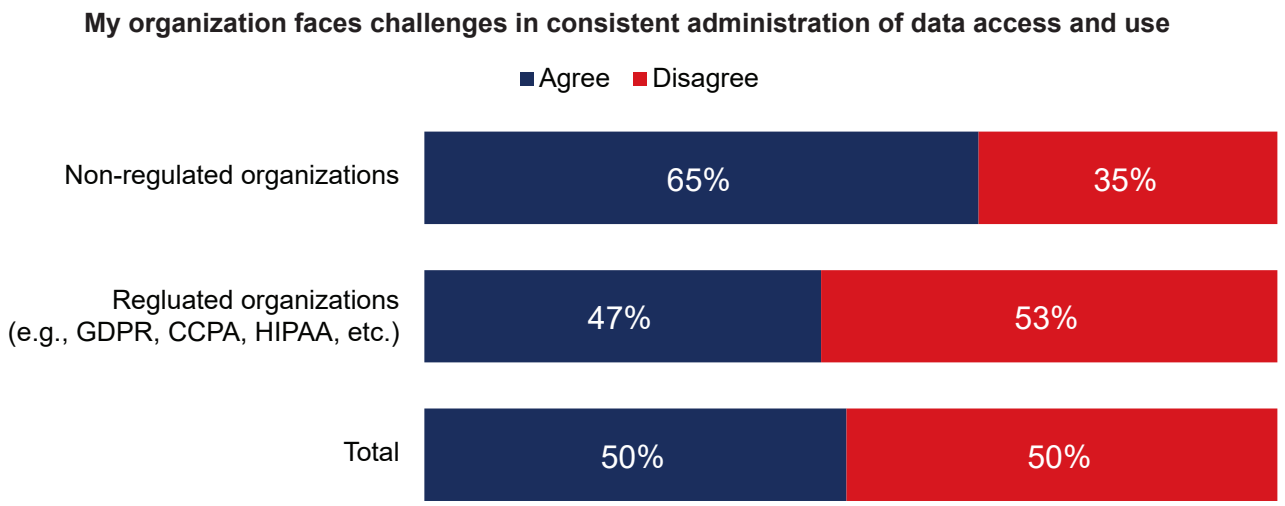
Interestingly, organizations that are subject to data privacy and data protection regulations, such as GDPR, were *more* likely to report that they have a cloud-first strategy, a dedicated data engineering team, provide self-service analytics, and that they face fewer challenges with data access and use. Simply put, many assumptions about regulated organizations – that they are laggards or hindered in their efforts to leverage data – simply did not bear truth.

In regulated organizations, data is becoming much more important for decision-making relative to non-regulated organizations. Three-quarters (75%) of respondents from regulated organizations reported that data would become more important to the organization's decision-making over the next 24 months. Barely half (51%) of respondents at non-regulated organizations reported the same.

Additionally, respondents from regulated organizations were also much more likely to report their organization had a cloud-first (31%) or cloud-forward (45%) adoption strategy, while respondents from non-regulated organizations were disproportionately more likely to report a cloud-conservative (46%) or cloud-skeptic (9%) strategy. The assumption that regulated industries or firms tend to shy away from cloud technology is outdated at best.

Administration in the access and use of data is another area in which regulated organizations have an edge, perhaps because of their more consistent and firm data management and governance practices.

Figure 10: Data Administration Challenges



Q: Please indicate the level with which you agree or disagree with the following statement about your organization: My organization faces challenges in consistent administration of data access and use.

Base: All respondents (n=525)

Source: 451 Research and Immuta custom report

A majority (65%) of respondents from non-regulated organizations either 'somewhat' or 'completely' agreed that their organization faces challenges in the consistent administration of data access and use. That number is only 47% for respondents from regulated organizations.

Regulated organizations also have an advantage with data engineering. While individuals from regulated and non-regulated organizations have similar response rates for reporting a dedicated data scientist or data science team, respondents from regulated organizations were over 10% more likely to report that their organization has a dedicated data engineering team, suggesting regulated firms are more likely to formally invest resources in the data supply side of the equation.

While usage rates of self-service technology are still low overall, again, regulated organizations are better suited to support these models of consumption. More than half (54%) of respondents from regulated organizations indicated that their organization uses self-service analytics or visualization technology, but only 35% of respondents from non-regulated organizations indicated the same.

Regulatory requirements force functions of data governance, such as consistent access control for data, which can facilitate safer data automation and more responsible self-service analytics. Organizations without a regulatory impetus can lag on these efforts, particularly without a clear cloud data strategy.

Accommodating All Data Supply Chain Perspectives

In looking ahead to improve data supply chain resiliency, organizations need to consider different internal perspectives and potential mismatches between employee experiences and subjective realities. The survey shows that, overall, leadership personas and those in overseer roles tend to paint a rosier picture than the data suppliers and data consumers that report directly to them. This only adds to the friction. While the majority of supervisor/leadership personas (67%) reported that their organization has made technological efforts to simplify data access and use, the data suppliers and consumers 'in the trenches' don't agree, only replying 'true' at the rate of 45% and 47%, respectively. It seems that efforts to simplify data access and use may not always translate into data that is *actually* easier to access and use.

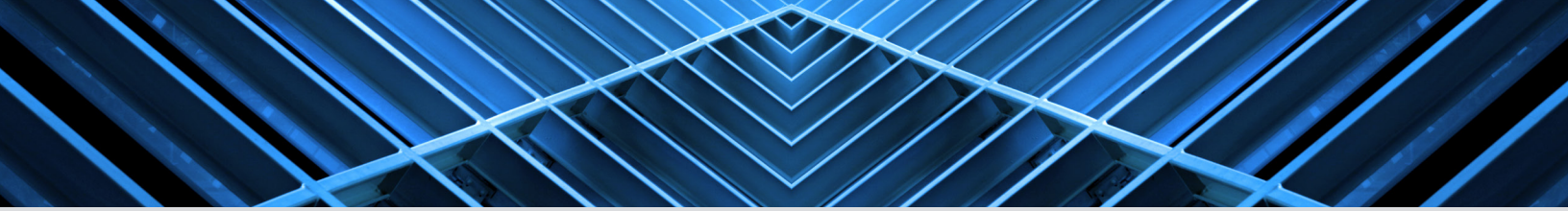
Schisms between perspectives of those in different roles are natural but can also be indicative of deeper problems. In the data supply chain, if leadership believes material efforts are being made to improve, but the data suppliers and consumers with their 'boots on the ground' do not perceive the effects of those efforts, there could be a number of challenges: technological, communicative or process-oriented. One of the keys to success is making sure that all stakeholders in the data supply chain have their voices heard in strategic planning discussions. And while data-driven strategy needs buy-in from the very highest levels of corporate leadership, it also needs organic input from the workers who interact directly with data and supporting technology.

Conclusions

It is a misconception to think of the organizational data supply chain as a purely linear process. Reality is much more nuanced because there are many iterative steps and interdependent roles that move and refine data in an ongoing cycle between data suppliers and data consumers in the organization. That process is becoming increasingly complicated with the introduction of new data types, new data architectures and new demands for time-sensitive insight. However, the basic dichotomy still persists between data supply and data consumption functions. In examining the relationships between data suppliers and consumers, the survey found that for the majority of organizations, data consumption is outpacing supply, and it is a major gap that must be addressed in order to maximize value from data.

For organizations looking to fix the gaps in their data workflows and hone their DataOps strategy, there are several options. Investment in the data supply function of the organization – including people, processes and technology – is a clear step forward. Additional human talent is necessary, but not sufficient on its own. For long-term success, organizations should focus on technological automation and scalability, and remove hurdles to secure and governed cloud adoption. A strong focus on underlying data security, governance and access control can pay dividends in the long run, not only for meeting regulatory requirements, but for ensuring long-term data quality and trust.

The number of data consumers will only continue to grow. What will also remain constant is the rising importance of data to the business. To address this need, organizations need a robust DataOps strategy that focuses on the agile and automated application of data management, which includes building modern data workflows and defining clearly delineated worker responsibilities.



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As the leading data access control platform, Immuta helps address each one of the major challenges discussed in this report so that your team can develop DataOps maturity and cloud success. The benefits of Immuta include:

- Improved security – Immuta improves data security by detecting and classifying your sensitive data, applying attribute-based access controls, enabling masking and anonymization, auditing, and more.
- Improved automation – Immuta will apply security controls automatically as data is added and will reduce the number of policy changes required through dynamic updates.
- Improved workforce efficiency – By reducing the time spent managing access control policies, Immuta frees up data engineering time and resources.

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