

White Paper

# **UNLOCKING SUPPLY CHAIN POTENTIAL: INSIGHTS FROM ISM<sup>®</sup>'S 2023 *DATA AND ANALYTICS SURVEY***



Presented by



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## About Institute for Supply Management® (ISM®)

Institute for Supply Management® (ISM®) is the first and leading not-for-profit professional supply management organization worldwide. Its community of more than 50,000 in more than 100 countries manage about US\$1 trillion in corporate and government supply chain procurement annually. Founded in 1915 by practitioners, ISM is committed to advancing the practice of supply management to drive value and competitive advantage for its members, contributing to a prosperous and sustainable world. ISM empowers and leads the profession through the ISM® *Report On Business*®, its highly-regarded certification and training programs, corporate services, events, the ISM Supply Chain Capability Model and assessments. The ISM® *Report On Business*®, Manufacturing, Services and Hospital, are three of the most reliable economic indicators available, providing guidance to supply management professionals, economists, analysts, and government and business leaders. For more information, please visit: [www.ismworld.org](http://www.ismworld.org).

## How the Survey Was Conducted

The Institute for Supply Management® (ISM®) conducted the 2023 Data and Analytics survey between May 23 and July 18, 2023, garnering participation from 379 professionals from various backgrounds and locations. The datasets include mostly domestic with about 30 percent to 40 percent non-U.S. respondents. A random sample of customers (including ISM members and nonmembers) was pulled from ISM's database. A random sample of non-ISM affiliated practitioners was pulled from an independent database.

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# Unlocking Supply Chain Potential: Insights from ISM®'s 2023 *Data and Analytics Survey*

## Introduction

The landscape of data and analytics within supply chain management is continuously evolving, driven by innovative professionals, new technologies and the heightened reality of its pivotal role in optimizing operations in the face of global challenges and change.

Institute for Supply Management®'s (ISM®) 2023 *Data and Analytics Study*, conducted among a diverse group of data and analytics-oriented supply management professionals, provides insights across topics of data governance, tech infrastructure, organizational and capability maturity, and talent management. This white paper also includes selected data from ISM's 2022, 2020, and 2019 studies.

By delving into the responses of surveyed professionals who navigate complex modern supply chains, this study aims to equip readers with a sense of how their procurement functions and companies compare to others in keeping up with the quickening pace of data and analytics, as well as provide an increased understanding will lead progress toward data management and analytics goals.

## Data Governance Presence and Structure

In the 2023 *Data and Analytics Study*, survey respondents were asked if their organizations have instituted a dedicated data governance function. A solid majority of 58 percent reported affirmatively in 2023, similar to what was found in the prior three surveys (2022: 56 percent, 2021: 63 percent, 2019: 59 percent).

While not overwhelming majorities, these results underscore the importance of rigorous data management and highlight a conscious effort

to cultivate an environment where data-driven decisions thrive. The relative consistency of the results in recent years, given the diversity of company sizes and industries in the survey pool, suggests that organizations prone to take this step already have.

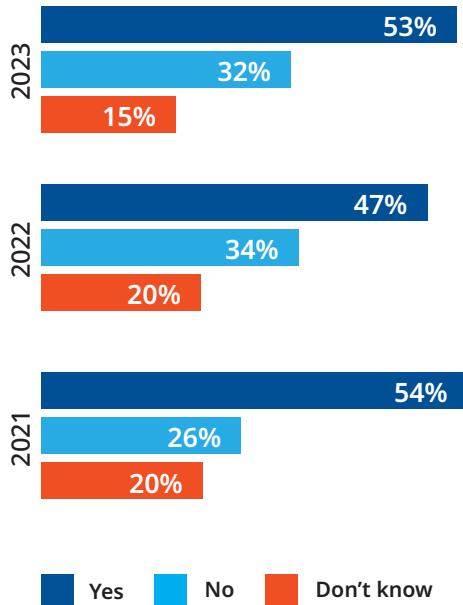
The 2023 study revealed that the locus of data governance often resides within centers of excellence (COE), a testament to the strategic significance organizations attach to this function. More than 50 percent of surveyed professionals reported that the data governance function is nestled within a COE, reflecting a concerted effort to align data governance initiatives with broader organizational goals.

In an era marked by interconnectedness and interdependence, the survey unveiled a notable insight: nearly three-quarters of respondents regarded data governance as an enterprise-level endeavor, whether managed there or at the departmental level under the umbrella of enterprise policy (see Figure 3). This perspective underscores the pervasive impact of data governance across organizational silos, emphasizing its role as a catalyst for holistic transformation.

Says Paul Lee, Director of ISM Research & Analytics, "Strong data governance practices are crucial to today's complex supply chains. If you don't have the situational awareness that can proceed from actionable data, you are at a competitive disadvantage and less resilient than you could be." Regarding developments in the profession, "there has been forward progress on this front over the past several years," Lee says, "but organizations should continue governance optimization efforts to better succeed in today's rapidly evolving supply chain environment."

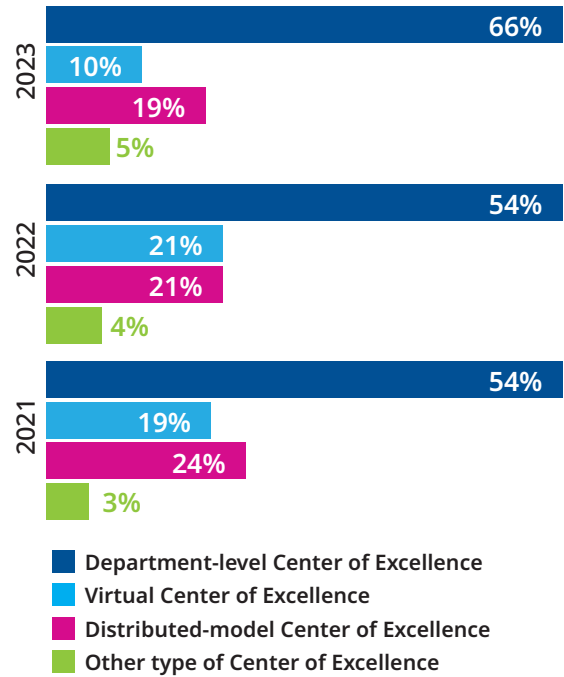
#### Data Governance

**Figure 1: Is your data governance function housed in a Center of Excellence?**



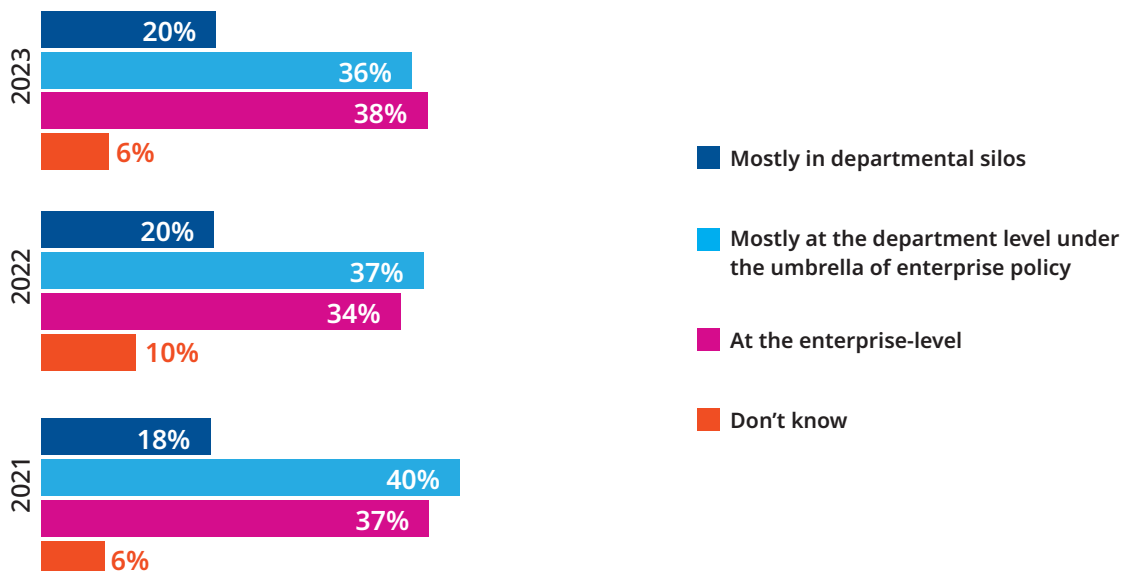
#### Data Governance

**Figure 2: Would you classify your Center of Excellence as a..**



#### Data Governance

**Figure 3: Is data quality/data governance managed in departmental silos or at the enterprise level?**



## Governance Leadership

In terms of leadership, the findings indicate that chief information officers (CIOs) and chief technology officers (CTOs) are the most frequently mentioned executives in relation to data governance efforts. However, it is noteworthy that data governance initiatives are most often spearheaded by vice presidents, underscoring their pivotal role in orchestrating the implementation and evolution of data governance strategies.

The survey results also spotlight the composition of data governance steering committees, where IT takes the lead with approximately two-thirds of respondents (66 percent) indicating its presence. Procurement emerges as the second most frequently mentioned participant in these committees. The relatively high frequency of participation of other departments reflects the cross-functional nature of data governance and its intricate ties to diverse business units (see Figure 4).

Jim Fleming, Manager of Product Development and Innovation at ISM, notes the importance of governing bodies who, he says, “determine the boundaries, policies, procedures and priorities” for how data is managed. The reality that a breadth of business functions participates in the effort, including IT being most frequently, means that these groups must genuinely collaborate. “I believe that true partnership is the correct model to continue going forward,” Fleming says.

When considering whether data governance is a necessity, useful or bureaucratic, an overwhelming 87 percent of respondents expressed agreement with the notion that data governance is a necessity. This consensus highlights widely shared recognition that a unified approach to enterprise data is essential to informing effective business strategies, executing those strategies, and fostering data-centric cultures.

Notably, as organizations embrace new technologies, data considerations are increasingly taking precedence. The survey reveals that a majority of respondents affirm that data-centric perspectives are accorded top priority during the implementation of novel technological solutions (54 percent). This attests to the proactive stance of organizations, where data-driven insights are not only sparking the delivery of technological advancements, but are also woven into the fabric of them.

Diving deeper into the role of governance, respondents believe ensuring data security and data quality should be high priorities. The next top responses were to “develop and ensure compliance to data policies,” followed by “develop standards,” “ensure data usage and data-based decision making,” and “provide awareness and training.” (see Figure 5).

## Data Infrastructure

A timely revelation stems from the recognition that nearly one-third (30 percent) of organizations are reported to have embraced a comprehensive master data management (MDM) strategy in 2023, which can be defined as a comprehensive plan for managing an organization's critical data assets. MDM establishes the processes, policies and technologies that will be used to ensure that master data is accurate, consistent and complete.

The 30-percent figure is consistent with the past two years' surveys. Forty-seven percent report no MDM in place, and 23 percent of respondents are unsure. Within the MDM group, technology emerges as a quintessential ally:

- Approximately three-quarters (72 percent) of surveyed professionals utilize dedicated software for their MDM, underscoring the pivotal role of technological enablers in realizing robust data management architectures and frameworks.
- Key software functionality sought in these solutions includes a data dictionary, business glossary, data lineage and data curation, underlining their crucial role in cultivating consistent data understanding, enterprise alignment and effective data usage.

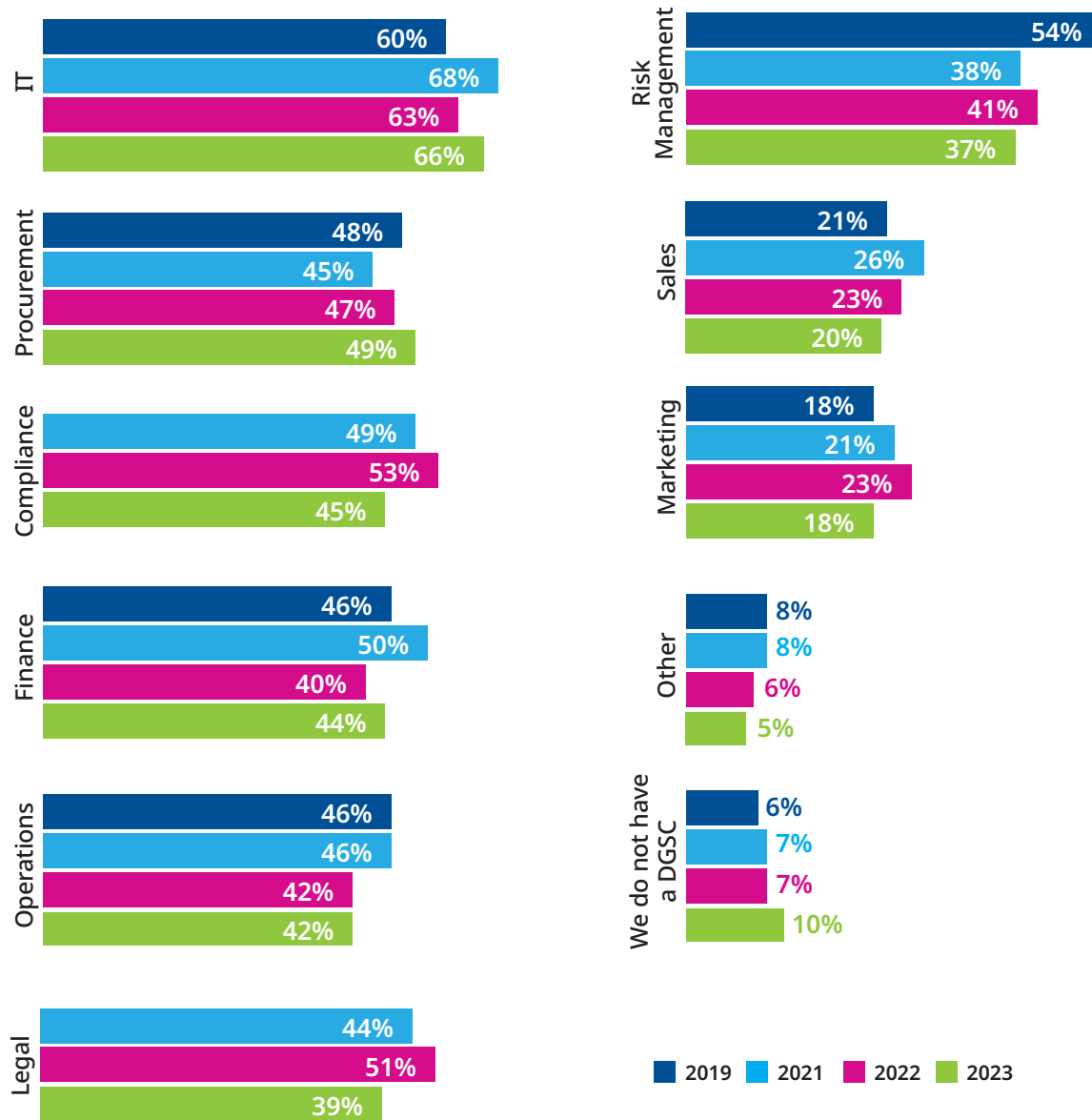
Unveiling the dichotomy of data hosting, the survey shows that internal data tends to be centralized, while external data most often resides within cloud-based infrastructures. This architectural insight is accompanied by the revelation that supply management is predominantly self-sufficient in accessing and managing data, underscoring the autonomy embedded within contemporary supply chain operations.

## Organizational Capability/Maturity

An implication underpins the essence of the survey, which is that supply management and procurement personnel be well versed in the world of data to execute their roles effectively. This is borne out in the survey results, as respondents largely agree that supply management staff should be more proficient than organizational staff as a whole (see Figures 6 & 7).

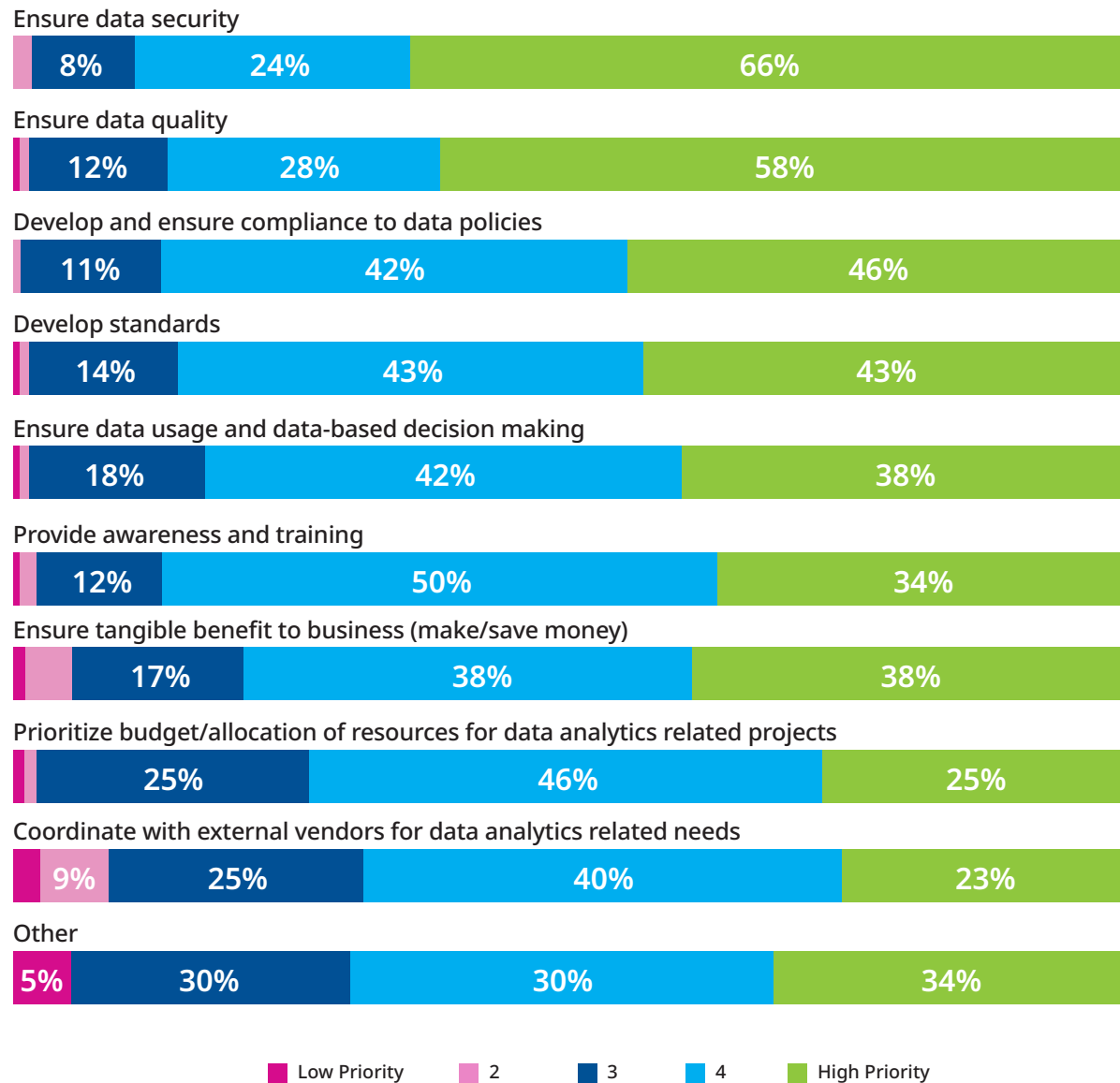
## Data Governance

**Figure 4: What organizations within your company are part of your Data Governance Steering Committee?**



## Data Governance

**Figure 5: What do you think should be the priorities of your Data Analytics organization/Center of Excellence?**



## Data Governance

**Figure 6: Should all organizational staff be able to handle and analyze data?**

(Proportion answering "Yes")



## Data Governance

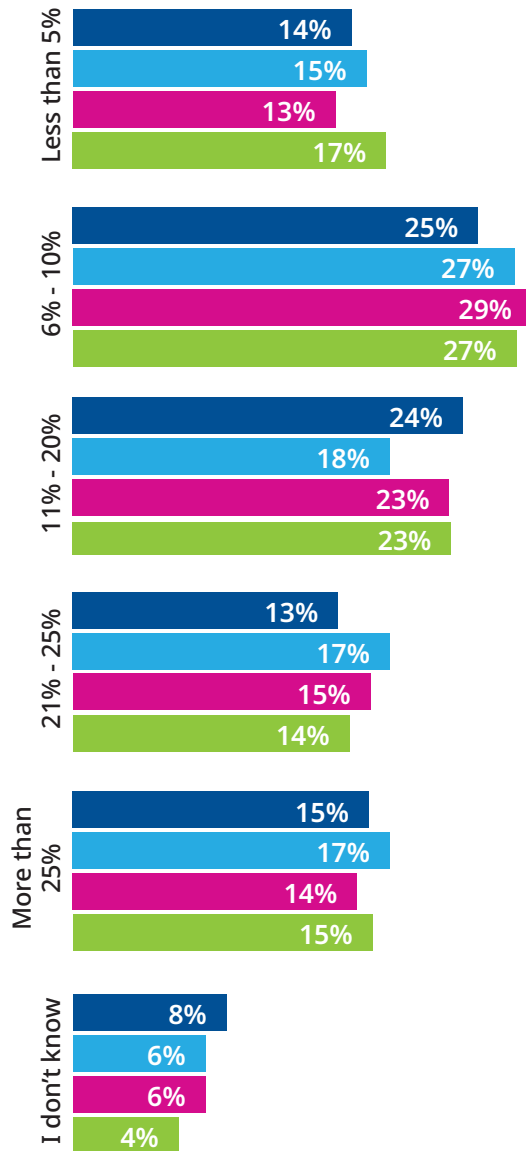
**Figure 7: Should all supply management staff be able to handle and analyze data?**

(Proportion answering "Yes")



## Data Governance

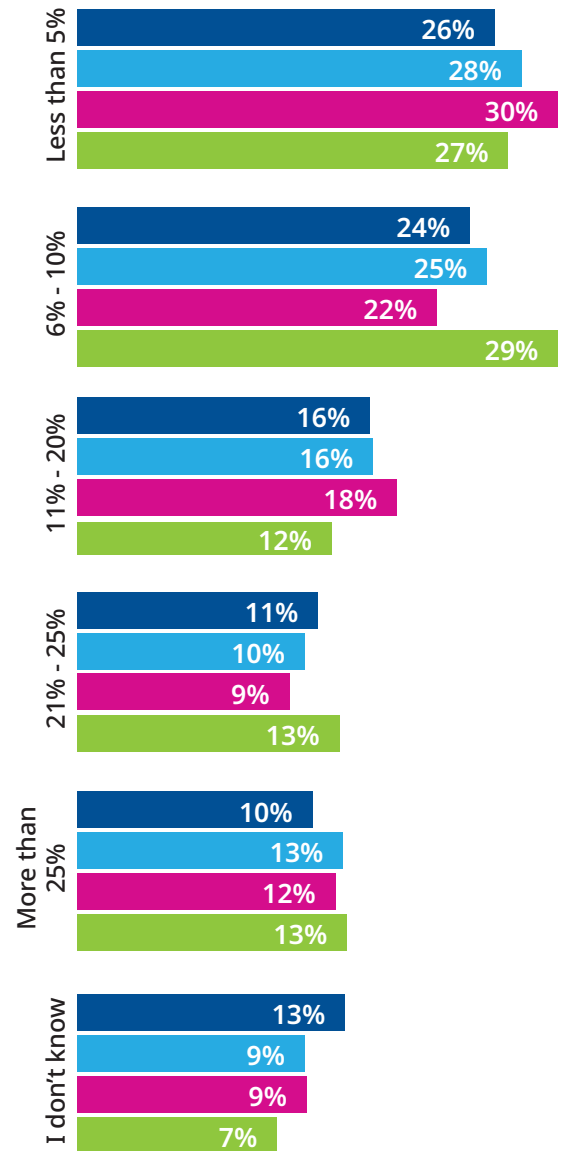
**Figure 8: How much of your day is spent trying to locate needed data?**



■ 2019 ■ 2021 ■ 2022 ■ 2023

## Data Governance

**Figure 9: How much of your day is spent cleaning needed data?**



Despite the explosion in data availability over the past decade, a majority of professionals report spending excessive time seeking data (see Figure 8). This underscores the challenges of information accessibility and highlights the latent opportunities for enhanced data discovery mechanisms. Suggesting progress over the prior two years, data cleaning is identified as a less pronounced hurdle in 2023 (see Figure 9).

Assessing the relative importance of multiple dimensions of data and analytics management, from identifying new data sources, extracting more value from existing data, hiring and training skilled talent, or designing an optimized organizational structure for managing information, Jacob Kissaw, director, strategic business enablement, insights & analytics at ADM, says, "I think the latter is more important. The organizational structure you have is really going to help drive decisions for the

former, such as: Where do you wrangle the data you already have? How you build a foundation or a pipeline for future state data architecture, and how do you consume it? How the business organization and the IT organization interact when it comes to data is extremely important.”

“Most organizations I encounter are still attempting to manage a balance between Individual skills and COE functions,” says Laura Beth Hirt-Sharpe, product owner, procurement analytics as a service at IBM. “We still find that more than a fourth of those surveyed spend 20 percent or more of their time between finding data, and a similar proportion spend 20 percent or more of their time cleaning data. That means out of the typical workforce week, at least half of a day is lost to data finding and cleaning.”

Fortunately, or perhaps unfortunately, the toil of data discovery and preparation tends to be experienced by team members piecemeal, rather than all at once. Recognizing how this camouflages the wasteful impact, Hirt-Sharpe says, “If employees were subjected to a meaningless four-hour meeting each week, I’m confident we would see a more robust response and strategy around freeing that time up for employees.”

Turning to more specific analytic modeling capabilities, one-third (34 percent) of supply management departments are able to accomplish complex or moderately complex predictive and prescriptive analytics. Organizations reported feeling less capable at predictive and prescriptive analytics than in 2021.

“This should be a major red flag for organizations to rethink how they skill their teams. No longer is it sufficient to provide category teams and practitioners with benchmark data for them to apply directly to their work, which I think contributed to this survey result,” says Hirt-Sharpe. “Between currency impacts, black swan events, and commodity price swings, all data appears as less reliable and requires more data science skill to apply to get a yield and savings from the data.”

## Data Quality

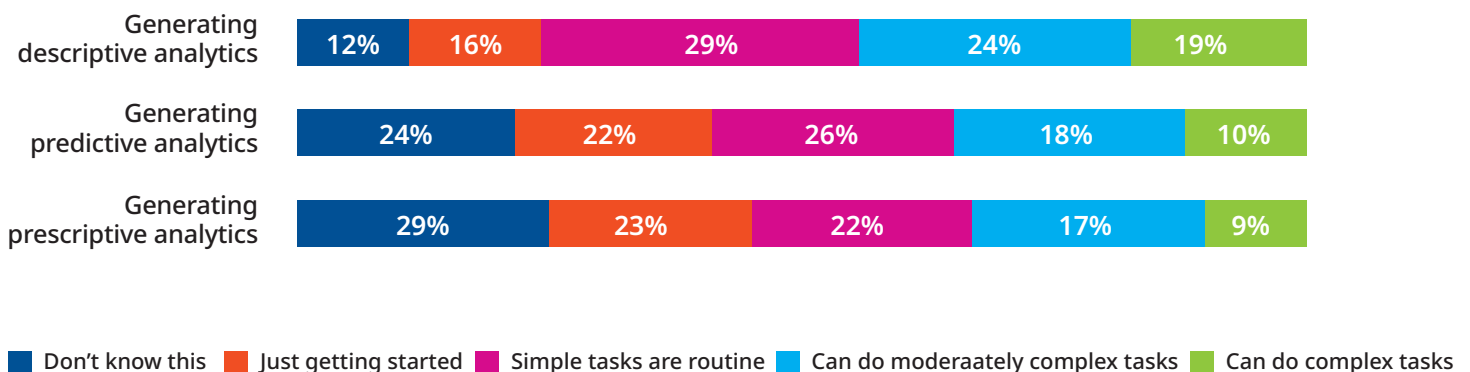
Data quality stands as a crucial opportunity, reflecting the ongoing journey of organizations towards data excellence. Merely 43 percent of those surveyed report their data quality as “good” or “excellent,” though a substantial 72 percent acknowledge that data quality has improved in the past two years, denoting a concerted effort towards refinement.

“Striking the balance between growing individual skills and COE functions will be different for every company,” Hirt-Sharpe says. “It’s highly dependent upon their employees’ skills and varies based on technology stack. As this need grows, so does the number of products, software solutions, and services pushed towards organizations that may not be ready for their implementation or have a need for them at all. These can be a distraction to foundational data enhancement and improving the quality of data.”

She continues, “It’s difficult to measure how much ‘good data’ will improve functions. Like faster computers and internet, it takes a plan and process to determine just how much good data improves a single project, but the employees feel

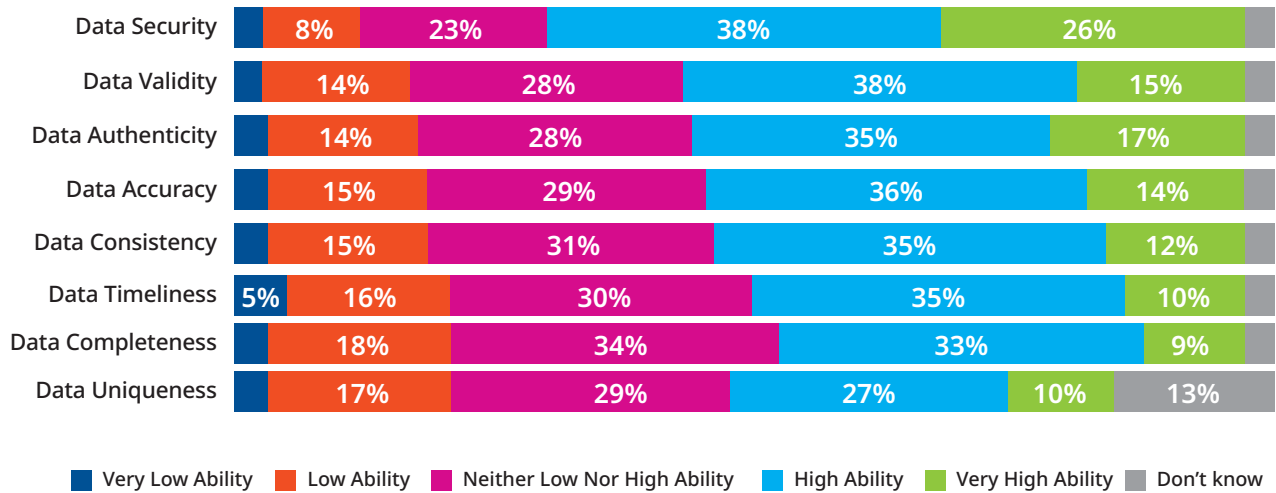
## Data Governance

**Figure 10: A majority of supply management departments accomplish at least simple predictive and prescribed analytics**



## Data Governance

**Figure 11. Please rate supply management's ability to assure data quality for the following (Supply Management Organization)**



the difference, and this efficiency can be tracked with careful review.”

In assessing supply management's ability to assure data quality versus that of the overall organization, supply management takes a slight lead, though a sizable group were not able to assess organizational capabilities which makes declaring victory premature (see Figures 11 and 12).

## Data Skills and Talent Management

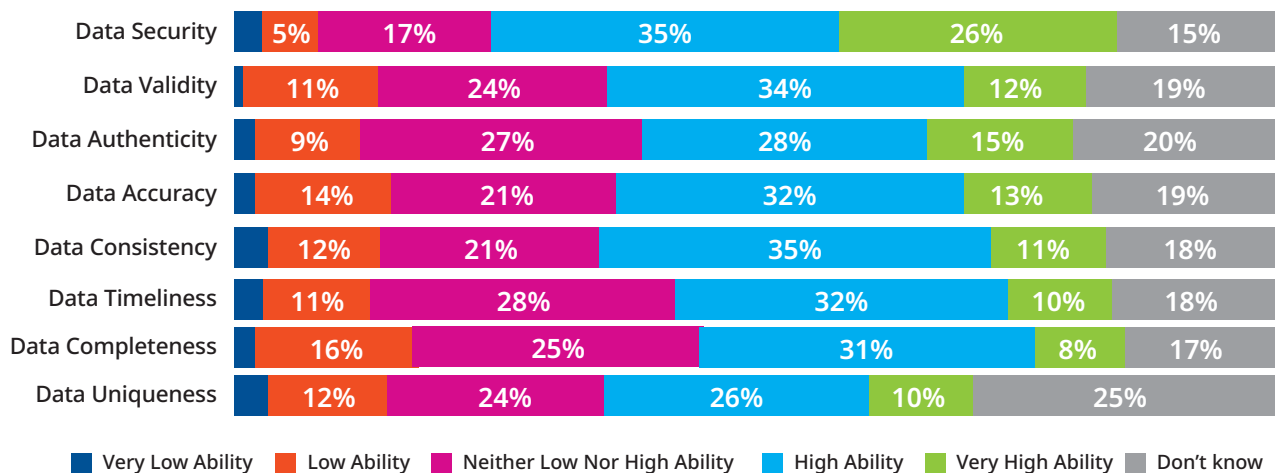
Tackling the range of opportunities and challenges in the rising seas of data requires adept personnel with a knowledge of their business functions and analysis skills. In the search for talent with both experience and skills in supply management and data analytics,

managers may have difficulty finding candidates with equal depth in both. “I’ve found that candidates often present as one type with aptitude for the other,” Kissaw says. “It’s up to (hiring managers) to find somebody with the technical skill set that also has that desire and capability to learn the business side of things. Or you’ve got to go the opposite route by finding someone who knows the business very well and just has a knack for understanding the technical discipline.”

Indeed, there has been a significant uptick in the hiring and deployment of data analytics talent into the supply chain arena. According to Fleming, “Supply management is really working to utilize data engineers and data scientists.”

## Data Governance

**Please rate supply management's ability to assure data quality for the following (Parent Organization)**



"I've seen the most demand for a team member with an agile combination of multiple tools and technologies and someone willing to communicate via financial language," Hirt-Sharpe adds. "Furthermore, nothing replaces the hand-in-hand mentorship that will educate a team member on the function they work in, the unique data their organization deals with, and the tools with which they will need to be comfortable."

At an organizational level, Fleming sees the complexities of deploying analytically trained personnel into the supply management groups. "Data engineers and scientists are typically coming into a corporation through the world of IT, and IT knows how to challenge them," he says. "They know how to provide them with career growth progression. When you put them into supply management, they know how to work with data and technology, but they're (likely) new to supply management, so they may not fully know how to apply their skills."

Additional difficulties for organizations optimizing data analytics talent are the different reward and career progression frameworks at the organizational level. In one example, Fleming explains, "the reward mechanism inside of supply management (centers on) getting results relative to supply management metrics. But you may have data scientists rewarded on a data development model. So, there can be a bit of a discrepancy."

## Prioritization

Given so many important data related topics to address with limited time and resources, managers must strike balances across many data management dimensions. "Several organizations have struggled with distractions of shiny new use cases versus true enablement," says Hirt-Sharpe, highlighting a "focus challenge" leaders and teams face.

Another tricky balance involves whether and how to leverage known but not adopted tools versus newly identified tools and is exacerbated by the recent well-publicized swell of new machine learning (ML) and artificial intelligence (AI) capabilities. "Many leaders are struggling to implement basic tools they've known about for years that would enhance their function's data and analytics maturity," Hirt-Sharpe says, "citing

budgetary restrictions — yet now they are called upon to evidence how they are prepared to utilize ML and AI in their function."

Going further into decision-making nuances, Hirt-Sharpe presents another layer of complexity: "Prioritization is more of a translation task," she says. "Data leadership, together with procurement and supply chain leadership, must speak the same language, namely that of finance to drive solutions that will benefit both groups."

Recalling lessons learned, Hirt-Sharpe says, "All too often, I see data speaking in self-reported efficiency and leaders speaking in harder savings. Foundationally, this must happen, from data teams learning to advocate in the language senior leaders in procurement and supply chain speak, but it's also the role of senior leaders to advocate for this translation and recognize the work it takes for the data teams to cross the bridge and get on common ground."

Delving further into the granularity of establishing business cases to inform priorities, Hirt-Sharpe elaborates, "The investment for data and analytics projects comes often through efficiency savings; however, we rarely see efficiency measured through similar or duplicate project evaluations. These evaluations ideally are run independently from another part of the organization. Additionally, (how to increase) utilization of central data for reporting to senior executives, and across the company, should be studied to ensure data that is approved and vetted is leveraged throughout all levels of the organization in every applicable circumstance."

## Conclusion

The survey findings embody a swirl of challenges, strategies and aspirations that typify modern supply chain data management. Navigating this complex landscape entails nurturing proficiency, harnessing technology, and prioritizing data excellence.

Supply management and procurement professionals deal with a continually developing landscape of economic uncertainties, changes in the nature and degree of globalization, and ongoing technology upgrades and data proliferation. What are seven actional questions

they can ask as they consider how to influence their organizations' investments in data and analytics?

- What are the priority business objectives we can affect with the aid of data and analytics?
- Do we actively manage how we balance the use of existing data and the quest for new sources?
- Can we make a case to the enterprise to elevate new or improved supply management metrics?
- With which parts of the business could we collaborate better to achieve enterprise goals?
- How can we automate data analysis more and drive faster, more accurate decisions?
- How are we hiring, training, and retaining talent for the next wave of data and AI?

Procurement organizations have myriad demands, tools to leverage and decisions to make. However, asking timely questions, testing results, and advocating proven practices will accelerate an organization's data and analytics success.