

Market Study: 2024 Modern Data Management & Data Fabric

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Executive Summary

This survey, conducted in March 2024 by Unisphere Research and Radiant Advisors, highlights pivotal trends in data management. As 61.3% of respondents indicated, the primary focus is enhancing operational efficiency. This focus aligns with the goals of advancing decision-making and automation, marking a shift towards agile, data-driven operations. Data management maturity in most organizations varies, with 40.9% reporting a proactive approach. Despite this, a substantial gap exists between strategic data usage aspirations and execution.

Cloud-based solutions and scalable data frameworks are increasingly adopted, reflecting a broad movement towards flexible data management environments. For 2024, priorities are set on data quality, governance and integration platforms to ensure data reliability and usability. Challenges persist, particularly with data integration complexities and stakeholder engagement, which are crucial for unifying data views and obtaining enterprise-wide support for data initiatives.

Data fabric is gradually gaining acceptance, with 52% of participants maintaining a neutral stance, waiting to gauge its impact. However, positive sentiments are notable among respondents, with 26% acknowledging its benefits for IT data management and 6% for its influence on business analytics and discovery. The implementation faces hurdles, like transitioning from legacy systems and addressing data governance, yet the optimism surrounding data fabric's potential to innovate data management remains strong.

Key components such as data virtualization and metadata activation are identified as essential for effective data fabric implementation, underlining a cautiously optimistic view towards this design concept. Data quality platforms are being focused on improving operational processes and managing data quality rules, though integration challenges are significant. Moreover, becoming proficient with data management tools is necessary.

Master data management (MDM) is recognized for providing a comprehensive view across domains, but its integration complexity and the need for enhanced stakeholder involvement remain prominent challenges. Similarly, active metadata and data catalogs are appreciated for improving data governance and quality monitoring, yet they need help in user adoption and operational metadata analysis. Analytics catalogs, valuable for consolidating BI tools and enhancing governance, also encounter user adoption challenges. These findings highlight a significant recognition of platform strategic benefits, tempered by user engagement and integration difficulties.

The survey data indicates a strong commitment among organizations to modernize their data architecture and management initiatives. Approximately 25% of respondents have submitted budgets, with another 35% having approved budgets for these initiatives (Figure 1). This combined 60% of respondents reflects a proactive stance towards enhancing data management capabilities. Budget allocations show a balanced distribution, with the \$100,001-\$500k and over \$1M categories, each capturing 27.1% of the budgeting preference, indicating that many organizations are investing heavily in data management (Figure 2). These investments underscore the criticality of robust data management systems in driving business efficiency and insights..

Figure 1: Budget to Modernize Data Architecture or Data Management Initiatives

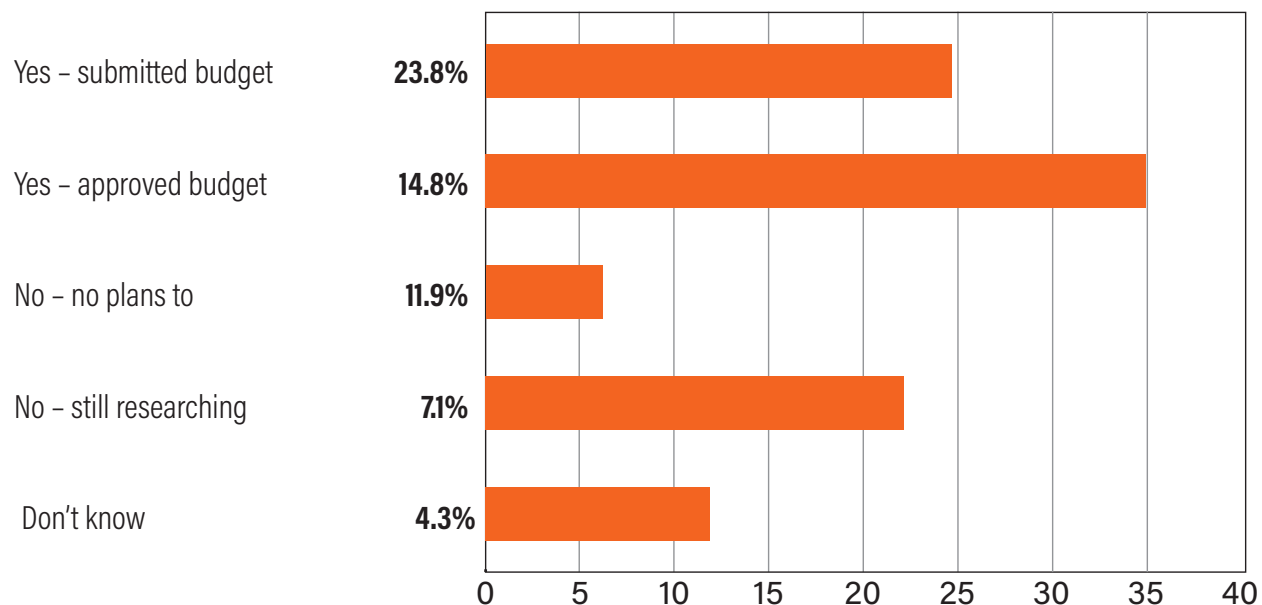
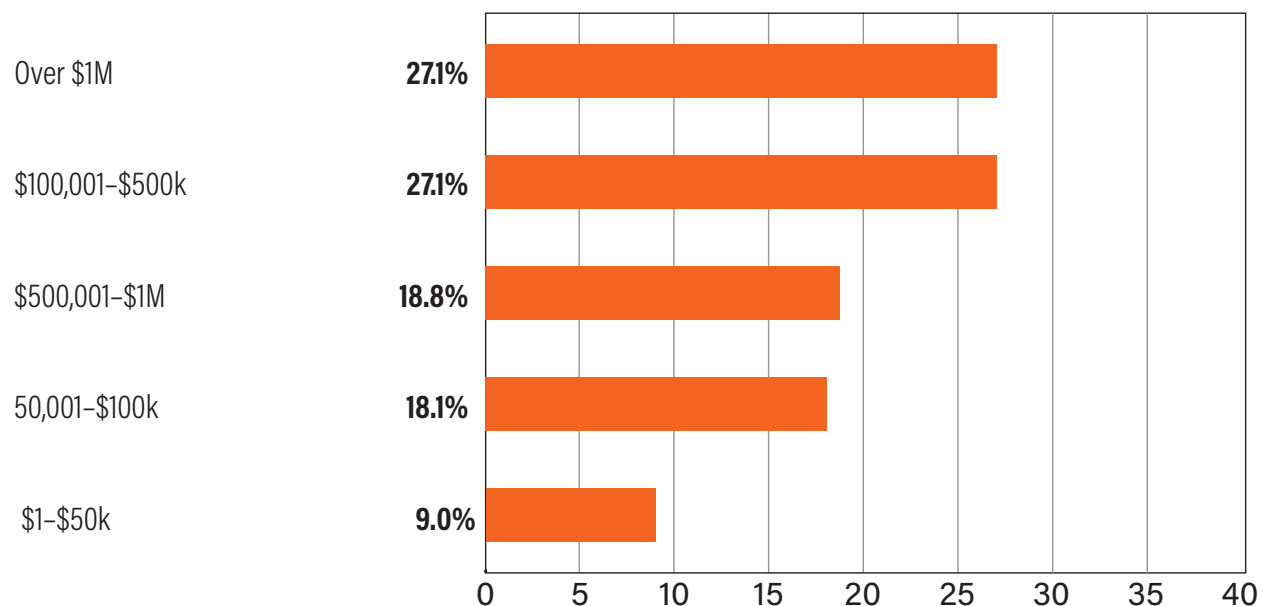


Figure 2: Respondents with Budget, How Much Assigned to Initiatives



Demographically, the survey is predominantly represented by North American respondents (95.1%), with a strong presence from the high-technology software sector. Key respondents include IT directors, focusing on senior management perspectives in IT. Activities centered around evaluating and recommending products underscore proactive IT strategy involvement. The survey consists of responses across various organizational sizes, notably with a large segment from companies generating over \$1 billion annually, illustrating the extensive enterprise engagement in evaluating data management technologies.

Data Management Survey Results

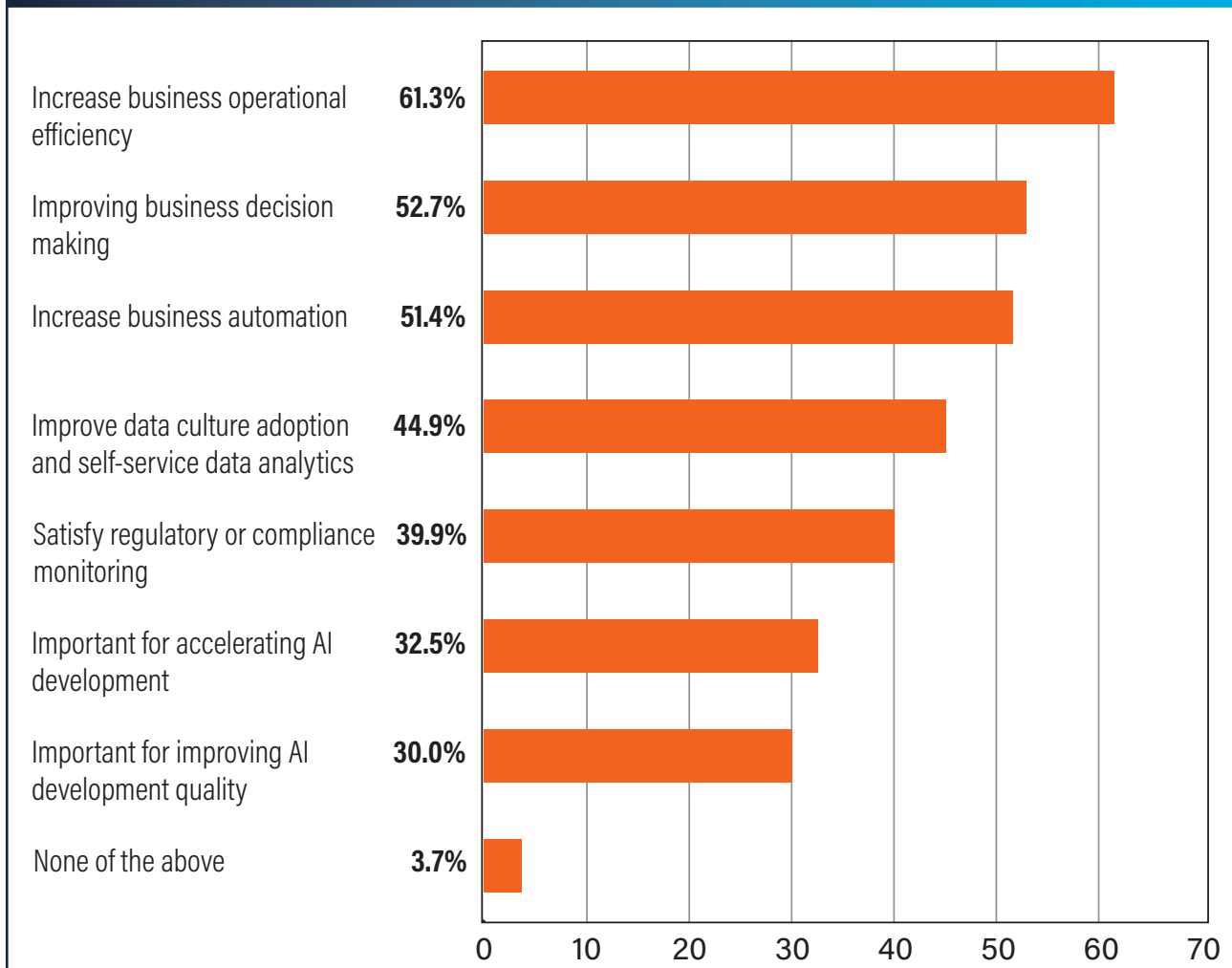
Current Data Management Priorities

Our first survey question set out to understand which business priorities are most important for data management efforts in companies. Through improved data management, respondents highlighted three core areas where businesses focus their data management strategies to drive operational efficiency and decision-making capabilities. The data presented in Figure 3 can be grouped and ranked into these core areas as follows:

- 1. Operational Efficiency:** As the top priority, the three highest-ranked responses are critical for companies looking to streamline processes and reduce costs.
- 2. Culture and Compliance:** Significant attention to cultivating a data-driven culture and regulatory compliance suggests ongoing challenges and opportunities and the need to manage data responsibly and effectively.
- 3. AI Development:** Despite the current hype in the market for businesses to accelerate their AI development, our survey shows that improved data management and data quality for AI is nearly half that of efforts geared towards operational efficiency.

Despite general industry news headlines, improved data management to accelerate AI development follows operational efficiency and data culture priorities.

Figure 3: Current Data Management Priorities



Overall Data Management Maturity Level

Asking respondents to describe their current data management maturity reveals proportions consistent with expected adoption curves. This also indicates that other questions in the survey are predominately answered by companies in the early stages of basic data management maturity, with 21% initially reactive and 41% proactive in their efforts, as shown in Figure 4.

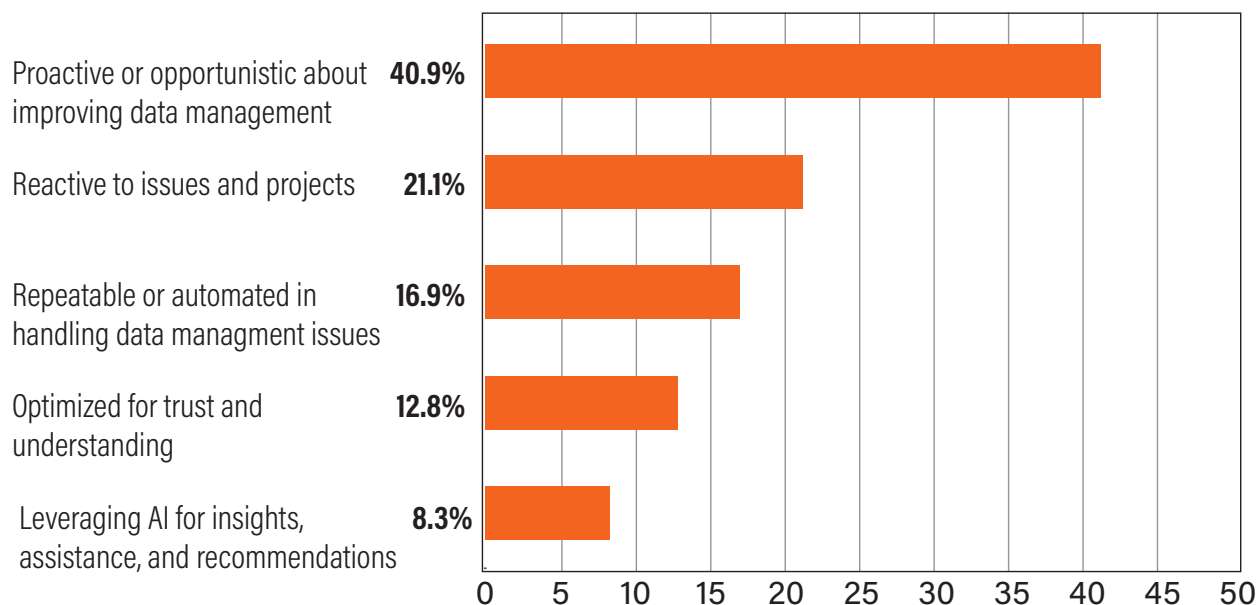
Majority at Basic Maturity: The largest proportion of organizations being either proactive or reactive, 62% of combined respondents, indicates that many are still in the early stages of developing more advanced data management capabilities.

Path to Optimization: A smaller fraction of organizations has reached stages where data management is either repeatable or optimized, highlighting a potential market need for tools and strategies that enhance data governance and operational efficiency.

Emergence of AI Utilization: The smallest percentage of organizations are at the highest maturity level, where AI is actively leveraged for insights and decision-making, suggesting a significant growth opportunity in AI adoption.

When combined with the data management priorities questions, we can state that most companies are actively building their data management programs and capabilities to improve business efficiency and operations.

Figure 4: Describe Overall Data Management Maturity Level



Current Data Management Environment

Several noticeable groupings are evident when respondents are asked about their current data management environments. For the most part, they are in line with prevailing trends for cloud adoption and data management.

Cloud Preference: The significant percentages for cloud-based environments (both centralized and decentralized) suggest a strong trend towards continued cloud adoption among businesses, highlighting the cloud's advantages in scalability and flexibility.

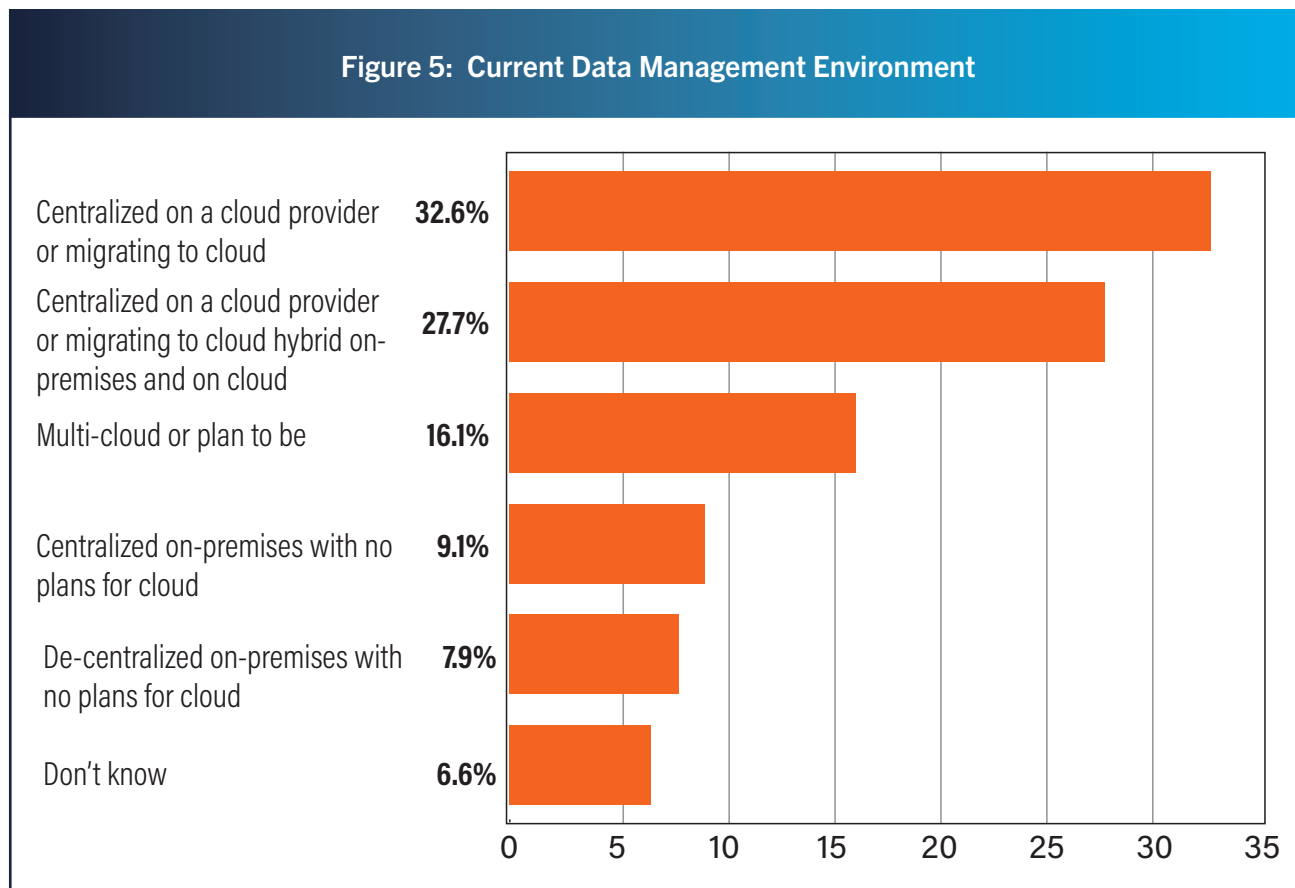
Hybrid Environments: The notable presence of hybrid environments indicates that many organizations are balancing on-premises control with cloud agility, possibly to satisfy specific regulatory or performance needs.

Resistance to Cloud: A smaller yet notable fraction of organizations, at 17% combined, remains exclusively on-premises with no plans for cloud migration, which could reflect industry-specific barriers or strategic choices focusing on data locality and security.

Planning for Multi-Cloud: The substantial interest of 16% in multi-cloud strategies underscores the importance of avoiding vendor lock-in and optimizing cloud capabilities across different providers. This capability should influence the selection of products from data management vendors.

Data Management Technologies in Use or Planned

Consistent with data management priorities, technologies to support data quality, data governance and data management platforms were the highest-ranked technologies in use or planned for 2024.



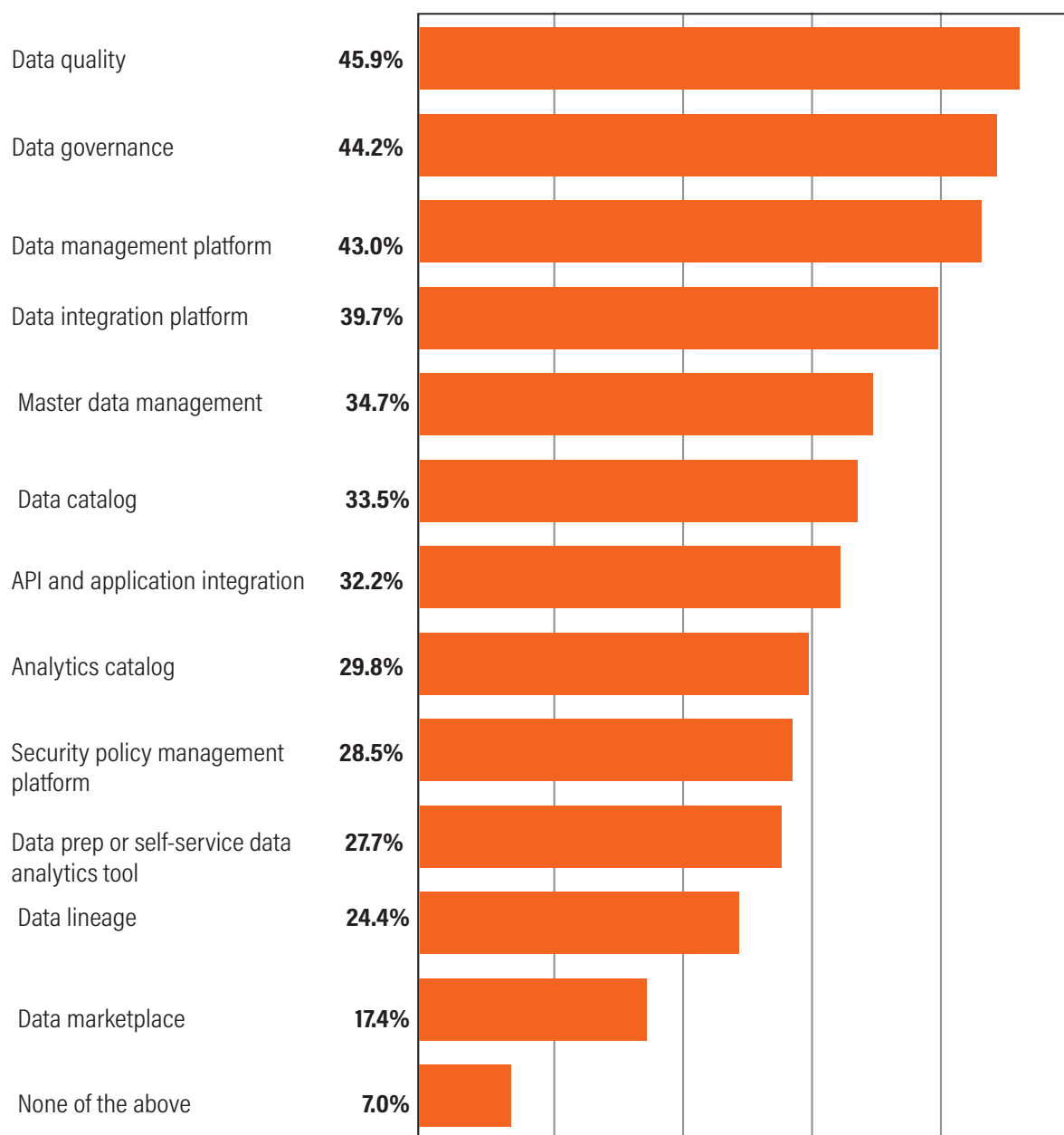
Focus on Data Quality and Governance: The highest percentages for data quality and governance technologies underscore their critical role in ensuring data integrity and regulatory compliance, reflecting ongoing concerns around data accuracy and usage standards.

Integration and Management Platforms: Strong emphasis on data management and integration platforms indicates a broad need for solutions that facilitate efficient data handling and accessibility across diverse systems and platforms.

Emerging Technologies: Lower but significant interest in newer technologies like data marketplaces and analytics catalogs points to evolving strategies that leverage data as an asset for insight generation and decision support.

A wide range of data management technologies were made available to respondents as a multi-select option in Figure 6 to understand ranking, grouping and relationships better. The amount of overlapping technologies suggests a strategic approach to building comprehensive data management ecosystems that support advanced analytics and business intelligence.

Figure 6: Data Management Technologies in Use or Planned in 2024



Focus Area for Improving Data Management

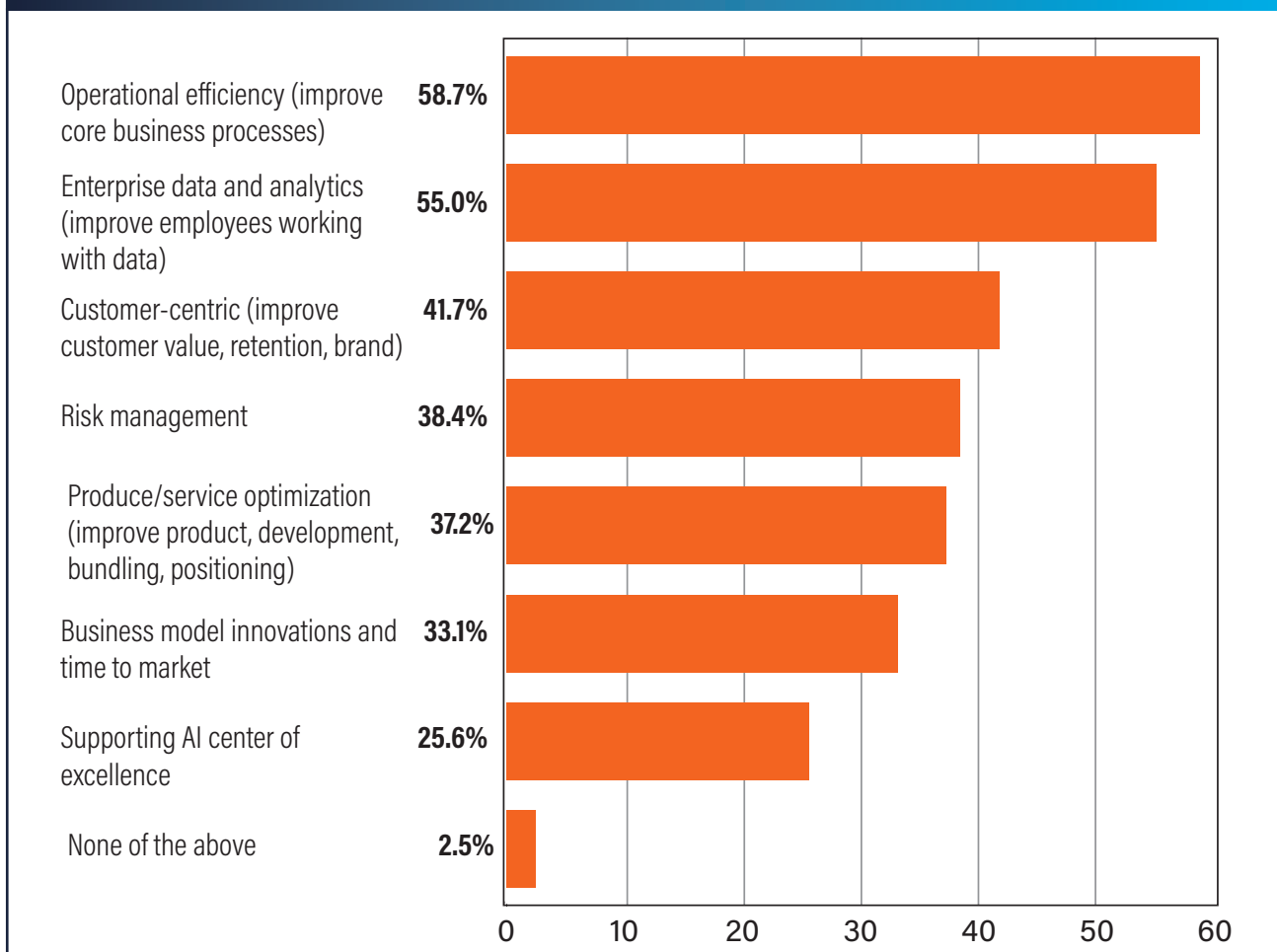
It's important to understand where businesses are focusing their data management improvements, the impact of these focus areas on overall business strategy and how organizations can align their data management practices with their strategic business goals. Companies in our survey are currently prioritizing their investments in data management technologies and practices in four key focus areas.

Priority on Operational Efficiency: The highest emphasis on operational efficiency underscores organizations' goal of streamlining processes and enhancing productivity, indicating a broad need for robust data management strategies supporting core business functions.

Focus on Analytics and Customer Centricity: Significant attention to improving enterprise data handling and customer-centric strategies reflects a strategic emphasis on leveraging data to drive better business outcomes and enhance customer relationships.

Innovation and Risk Management: A notable focus on innovation in business models and risk management suggests that organizations increasingly use data to adapt to market changes and mitigate potential threats.

Figure 7: Focus Area for Improving Data Management



Aspects to Build Trust and Understanding

This question was intended to gain insights into the aspects of data management associated with building trust and understanding by data consumers throughout the organization. These are key themes within business data strategies and survey results. Figure 8 captures a ranking of the critical areas where organizations focus on enhancing trust and understanding through data management. This understanding can guide businesses in prioritizing their investments in data management technologies and practices to foster a reliable and transparent data environment.

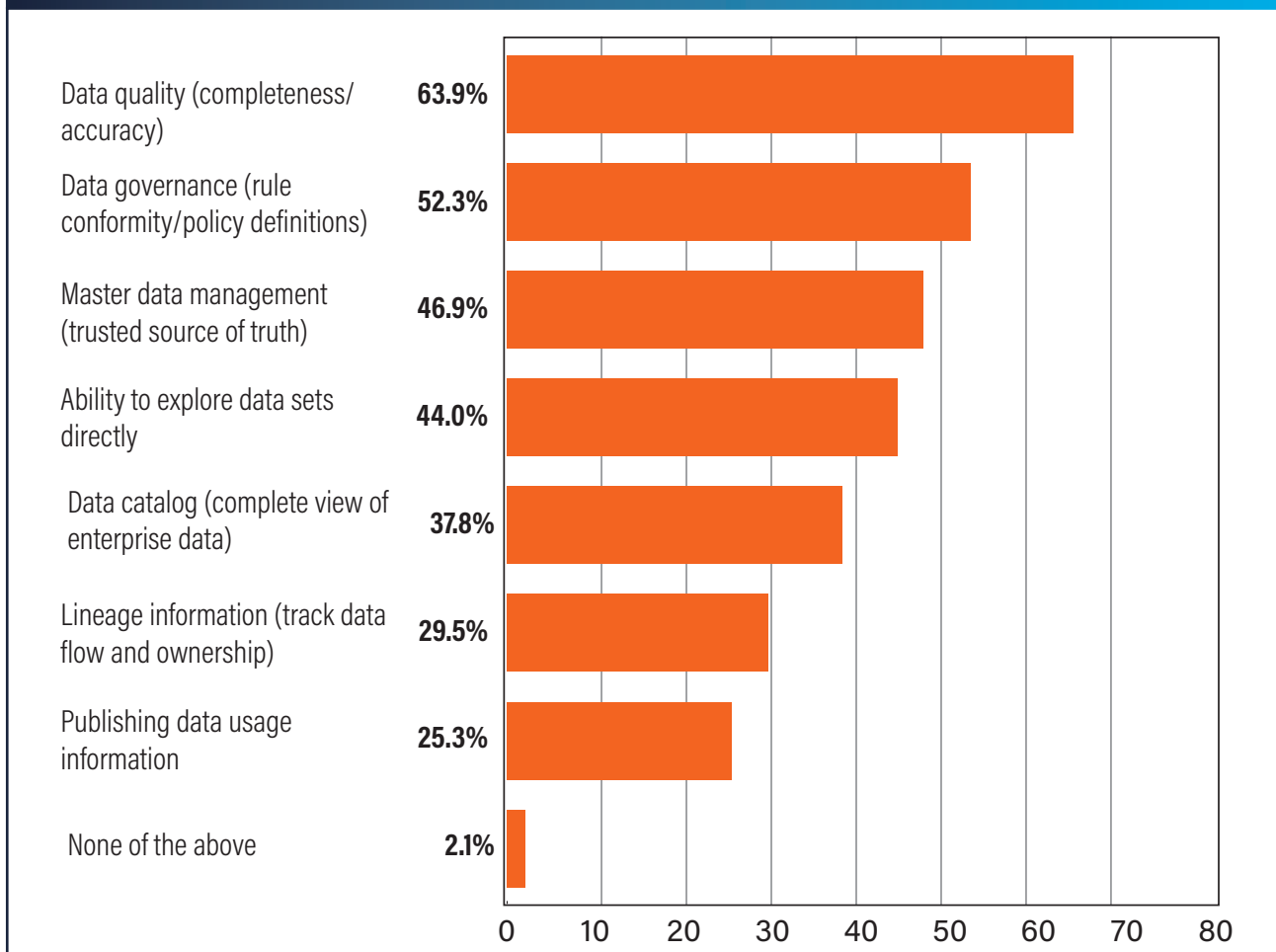
Building Trust from Data Quality: The highest ranking of data quality highlights its essential role in building trust and understanding, underscoring the need for accuracy and completeness in data to support reliable business decisions.

Significance of Data Governance: The strong emphasis on data governance indicates its importance in establishing clear policies and rules that ensure data is used appropriately and responsibly within organizations.

Importance of Master Data Management: Significant recognition of master data management as a trusted source of truth reflects its value in providing consistent, accurate and authoritative data sources across the enterprise.

Emerging Importance of Data Catalogs: The substantial score for data catalogs suggests an increasing awareness of their role in providing a comprehensive view of data assets and enhancing data discoverability and usability.

Figure 8: Aspects to Build Trust and Understanding



Role Intended to Benefit from Improving Data Management

Improved data management has wide-reaching benefits across various roles within an organization. However, our survey ranks the importance of investing in robust data management systems and practices to support a diverse range of data users (personas) and use cases, ultimately fostering a data-driven culture that enhances organizational efficiency and effectiveness—our highest-ranked data management priority. This analysis and Figure 9 can guide businesses in tailoring their data management strategies to meet the specific needs and expectations of different stakeholders within the company.

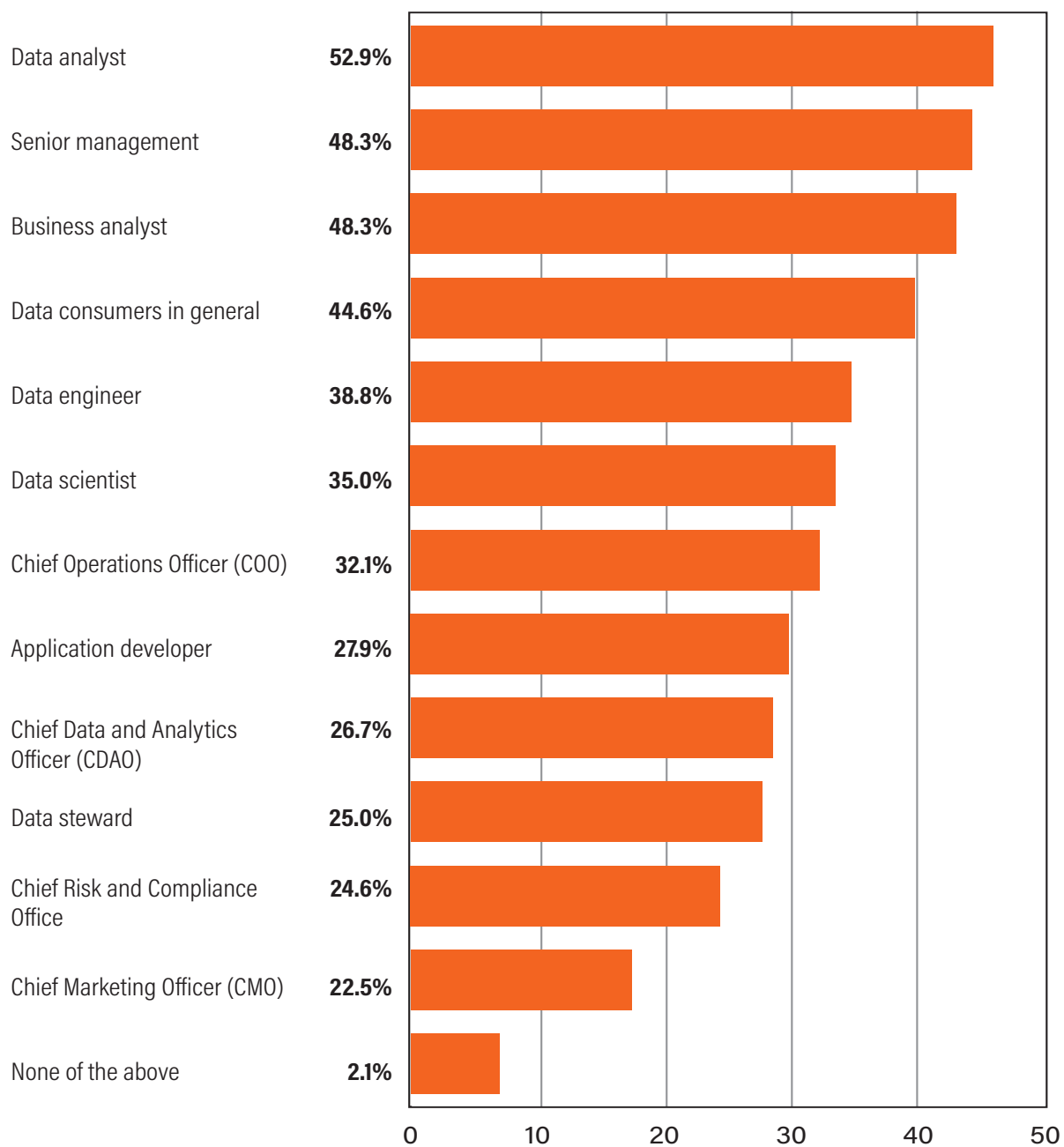
Data-Driven Decision-Making Across Roles: The highest ranking for data analysts and senior management underscores the pervasive need for accurate, accessible data at different decision-making levels within organizations.

Broader Organizational Impact: Significant percentages for business analysts and data consumers, in general, indicate a broad organizational impact of data management improvements, reflecting the importance of data in driving operational and strategic decisions.

Specialized Roles and Data Utilization: A notable focus on data engineers and data scientists illustrates the specialized demand for improved data management to support advanced data processing and analytical tasks.

Leadership and Strategic Focus: The substantial percentages for C-suite roles like chief data and analytics officers (CDAO), chief operating officers (COO), and chief marketing officers (CMO) reflect the strategic importance of data management in achieving business objectives and driving growth.

Figure 9: Role Intended to Benefit from Improving Data Management



Top Priorities of Data Management Programs

We drilled into the top priorities of data management programs and gained insights into some more specific projects and technologies hidden below the overall program.

These insights would be beneficial for readers in understanding where businesses are focusing their efforts within data management programs and how these priorities align with broader trends in technology and business strategies. This analysis can guide enterprises in prioritizing their investments in data management to enhance efficiency, compliance and value generation from their data assets.

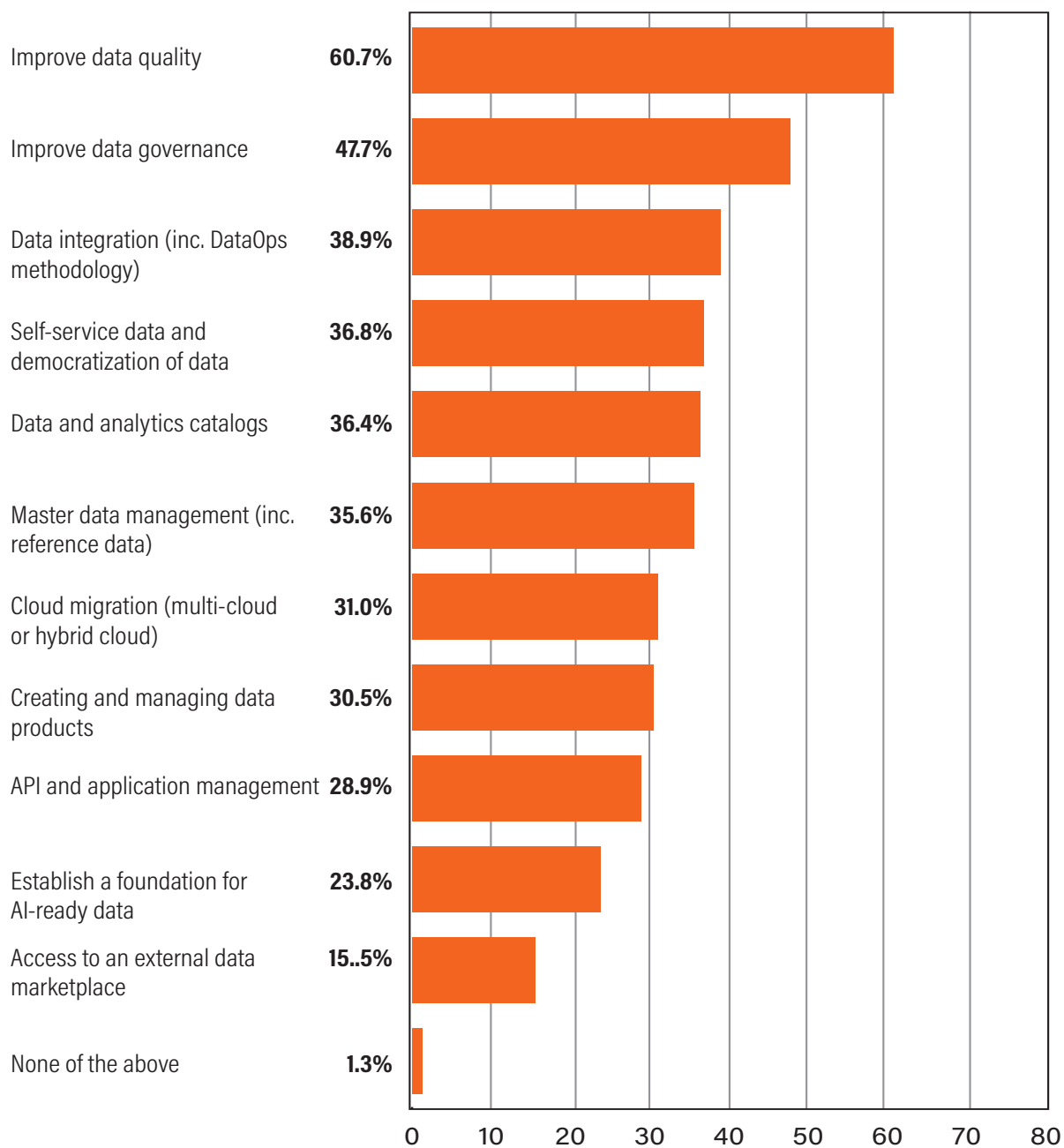
Critical Focus on Data Quality and Governance: The highest percentages for data quality and governance highlight these as foundational priorities, emphasizing the importance of accurate, reliable and well-governed data in supporting business decisions and operations.

Integration and Democratization: A strong emphasis on data integration and democratization indicates a significant focus on making data accessible and usable across the organization, which is necessary to foster a data-driven culture.

Emerging Priorities in Data Management: Considerable focus on cloud migration and managing data products suggests that organizations are actively looking to modernize their data platforms and create value through data-centric approaches.

Strategic Initiatives for AI and External Data: The attention towards AI readiness and external data marketplaces reflects forward-looking strategies to leverage advanced analytics and external data sources for competitive advantage.

Figure 10: Top Priorities of Data Management Program



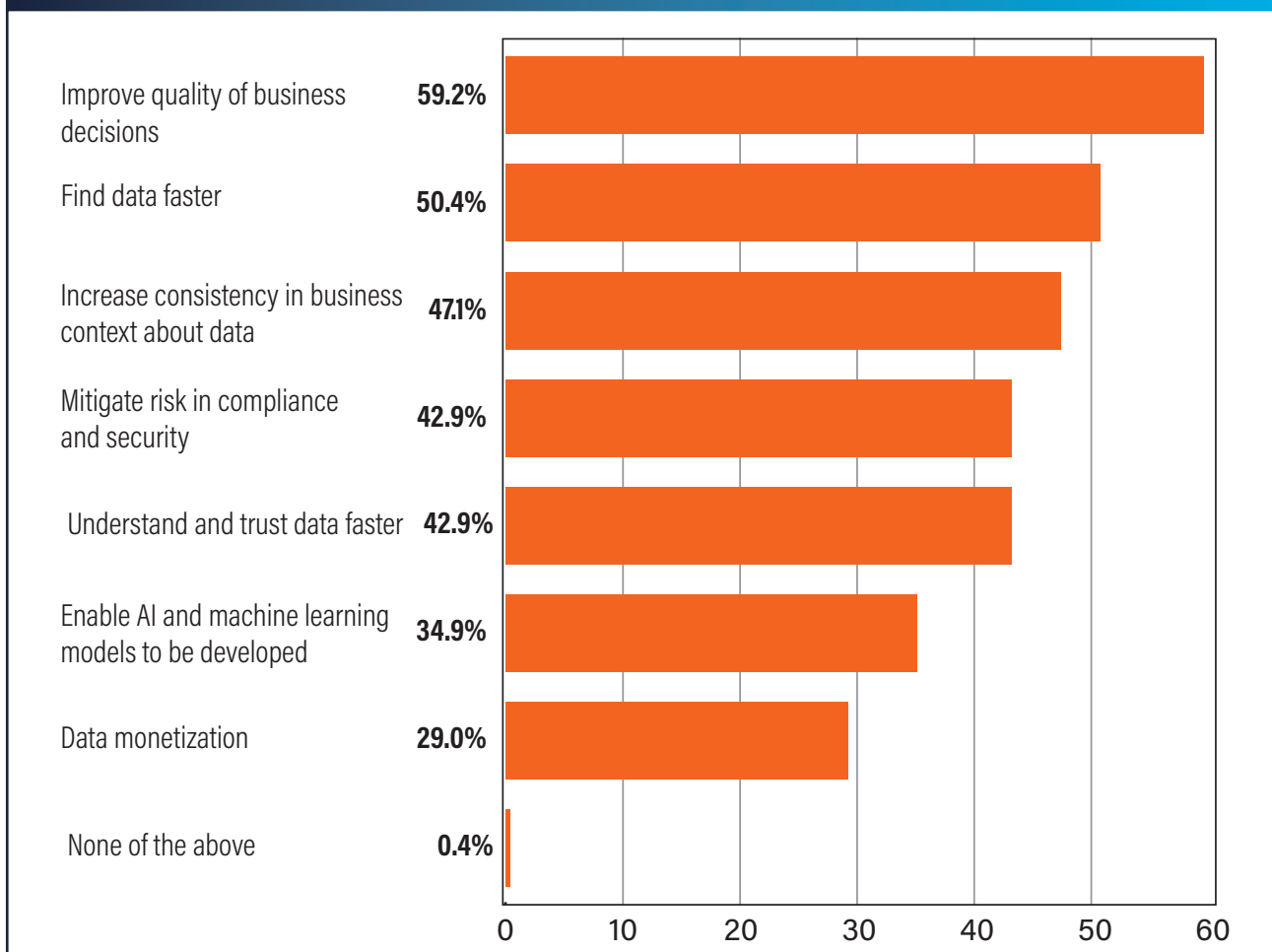
The Expected Benefits of Data Management

The survey results for the “Expected Benefits of Data Management” question in Figure 11 capture the key advantages organizations aim to gain through effective data management. The most significant benefit, as identified by 59.2% of respondents, is the improvement in the quality of business decisions, underscoring the critical role of accurate data in strategic decision-making. Other significant benefits include faster data retrieval (50.4%) and increased consistency in the business context (47.1%), which enhance operational efficiency and responsiveness.

Additionally, about 43% of respondents emphasize the importance of mitigating risks associated with compliance and security, highlighting a proactive stance towards regulatory challenges. The chart also strongly focuses on enabling AI and machine learning development (34.9%) and monetizing data (29.0%), pointing to the growing recognition of data as a strategic asset that can drive innovation and generate revenue.

These insights suggest that organizations increasingly depend on robust data management to improve efficiency, ensure security and leverage technological advancements for competitive advantage.

Figure 11: Expected Benefits of Data Management



Improve Decision-Making: The highest-ranked benefit, improving the quality of business decisions, underscores the critical role of accurate and actionable data in enhancing strategic decision-making capabilities. This highlights organizations' value on data quality as a fundamental driver of business intelligence and competitive advantage.

Operational Efficiency: The emphasis on finding data faster and increasing consistency in the business context suggests that organizations are keen on enhancing operational efficiency. Streamlined data access and standardized data contexts reduce time-to-insight, fostering more agile and responsive business operations.

Trust and Speed: Equal importance is given to understanding and trusting data quickly, which reflects an organizational need for rapid yet reliable data insights to support real-time decision-making.

Risk and Compliance: The significant focus on mitigating risks related to compliance and security indicates a proactive approach to addressing the regulatory challenges and threats in today's data-driven landscape. Effective data management practices help maintain compliance and secure sensitive information.

Technological Advancements: The drive to enable AI and machine learning model development through data management demonstrates a forward-looking approach, aiming to leverage advanced analytics for predictive insights and automation.

Economic Gains: The focus on data monetization shows an awareness of the potential to transform data into a revenue-generating asset, emphasizing the monetary value of effectively managed data.

Which Modern Data Architecture Are You Aligning to?

The survey results for “Which Modern Data Architecture are you aligning to?” found in Figure 12 reveal trends in data management's relation to modern data architecture trends, showing a marked preference for Cloud Data Warehousing, favored by 45.4% of respondents for its scalability and performance.

Data Lakes also emerged as a popular choice, embraced by 40.8%, highlighting the ongoing need to manage large volumes of raw and unstructured data. Additionally, the interest in Data Lakehouses and Real-time Unified Platforms indicates a shift toward architectures that merge traditional and modern data capabilities to meet complex data demands in business environments.

The variety in architecture preferences highlights that no one-size-fits-all solution exists; organizations have diverse architectural needs and must choose architectures based on specific business needs, data strategies and technological maturity.

Preference for Cloud Data Warehousing: The highest preference for cloud data warehousing suggests that many organizations are moving towards cloud-based solutions to benefit from scalability,

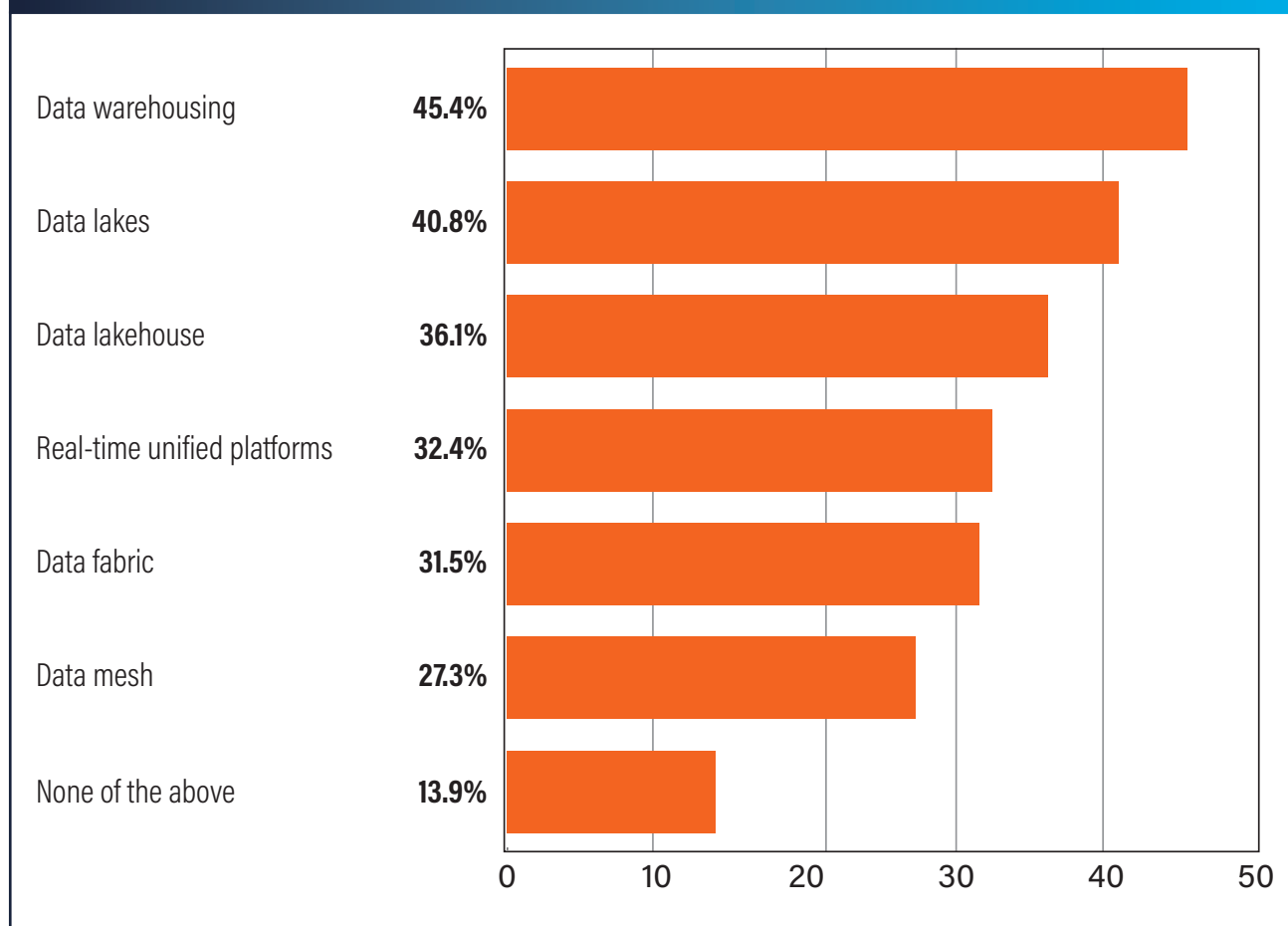
performance and reduced overhead costs associated with on-premises solutions.

Significant Interest in Data Lakes: The strong alignment with data lakes indicates that organizations value the flexibility to store vast amounts of unstructured data, which is essential for big data analytics and AI-driven applications.

Rising Popularity of Data Lakehouse: The interest in data lakehouses reflects a trend toward combining the cost-effectiveness and scalability of data lakes with the management features of data warehouses, providing a balanced approach to handling diverse data workloads.

Adoption of Advanced Architectures: Noteworthy percentages for real-time unified platforms, data fabric and data mesh architectures suggest a shift towards more complex, interconnected systems that facilitate data accessibility and interoperability across different business units and applications.

Figure 12: Which Modern Architecture Are You Aligning To?



Importance of Operational Metadata

The “Importance of Operational Metadata” survey results found in Figure 13 provide a perspective on how organizations prioritize operational metadata within their data management strategies. Key takeaways reveal a strong emphasis on analyzing and sharing data usage information (49.2%) and monitoring data governance and compliance (48.3%), highlighting the critical need for transparency and regulatory adherence in data practices.

Additionally, improving data pipeline execution and automating data management with AI are vital for enhancing operational efficiency and reducing manual efforts. Lesser priorities like optimizing financial aspects (FinOps) and data scoring suggest growing but still developing areas in the strategic use of metadata. These insights guide organizations in optimizing their data management to foster accountability, efficiency and value creation.

Data Usage and Governance: The highest priorities—analyzing and sharing data usage information and monitoring for data governance and compliance—indicate a significant emphasis on understanding how data is utilized within organizations and ensuring that this usage complies with regulatory standards. This focus reflects the growing need for transparency and accountability in data management.

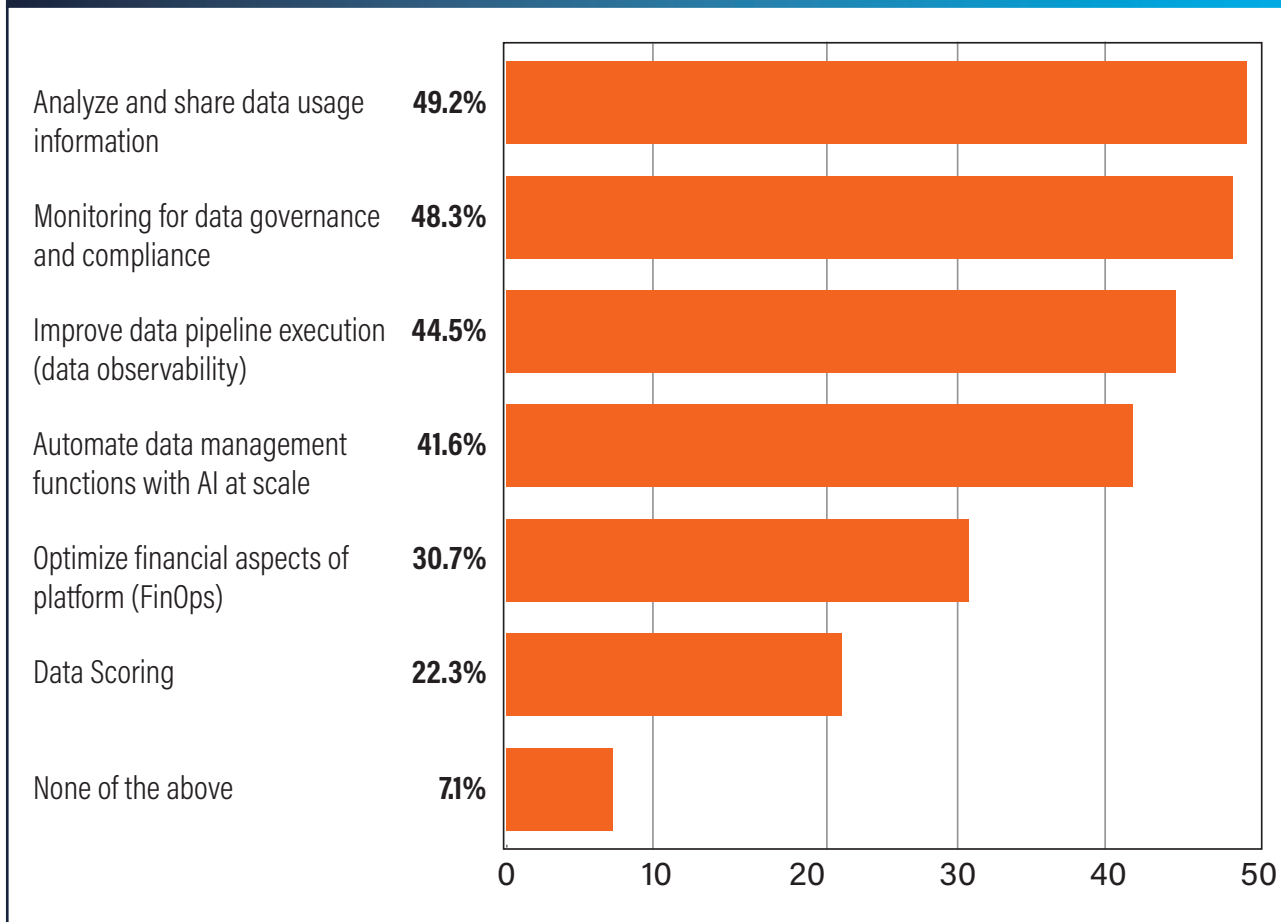
Operational Efficiency: The importance placed on improving data pipeline execution through observability suggests that organizations are keen on enhancing the efficiency and reliability of data operations, which is crucial for timely and accurate data delivery.

AI Integration: With over 40% of respondents prioritizing the automation of data management functions using AI, there is a clear trend towards leveraging AI technologies to scale data processes and reduce manual overhead, increasing efficiency and reducing errors.

Cost Management: The attention to optimizing financial aspects through FinOps highlights an awareness of the need to manage costs effectively in data platform operations, ensuring that investments in data management yield positive ROI.

Emerging Focus on Data Scoring: While data scoring is less prioritized than other areas, its presence reflects an emerging interest in quantifying data quality or value, which can significantly impact business strategies and outcomes.

Figure 13: Importance of Operational Metadata



Data Fabric Survey Results

The survey results from “Data Fabric - General Impression” and “Data Fabric - Understood & Consistent” shown in Figures 14 and 15 reveal correlations that can be inferred between organizational understanding of data fabric and their general impressions of its utility. A notable correlation is observed where a predominant neutral stance towards data fabric aligns with a general lack of detailed understanding, suggesting that apprehension or cautious optimism might be rooted in insufficient detailed knowledge and a lack of case studies available.

Conversely, as understanding improves, even at a conceptual level, there’s a noticeable increase in positive perceptions about the potential of data fabric for IT data management and business analytics. These insights underscore the crucial role of education and clarity in transforming skepticism into an acknowledgment of the data fabric’s strategic value, highlighting the need for targeted educational initiatives to enhance understanding and foster informed adoption.

Neutral Stance and Understanding Levels: The high percentage of neutral impressions (52%) could correlate with the general lack of detailed understanding of data fabric technology (only 1% understand it at a detailed level). This suggests that uncertainty or cautious optimism about data fabric might stem from insufficient knowledge or clarity about how to implement and benefit from it effectively.

Positive Impressions and Improving Understanding: The positive impressions of data fabric for IT data management (26%) and business analytics (6%) might correlate with the segments that report their understanding is improving (33%) and those who understand it at a conceptual level (11%). This suggests that as organizations’ understanding of data fabric improves, even if just conceptually, they can better recognize its potential benefits.

Concerns About Risks and Limited Understanding: The concern related to data governance and security (11%) could be linked to the low percentage of detailed understanding. A lack of deep knowledge about data fabric could lead to perceptions of risk, particularly concerning data security and compliance. This reflects a cautious approach by organizations that are aware of potential issues but not fully equipped to address them due to limited understanding.

Dismissiveness and Surface-Level Knowledge: The small percentage that dismisses data fabric as just vendor marketing or hype (4%) might be associated with the 15% who do not understand it. This indicates that a lack of understanding or exposure to compelling use cases of data fabric can lead to skepticism regarding its value, viewing it merely as a buzzword without substantive benefits.

Figure 14: Data Fabric – General Impression

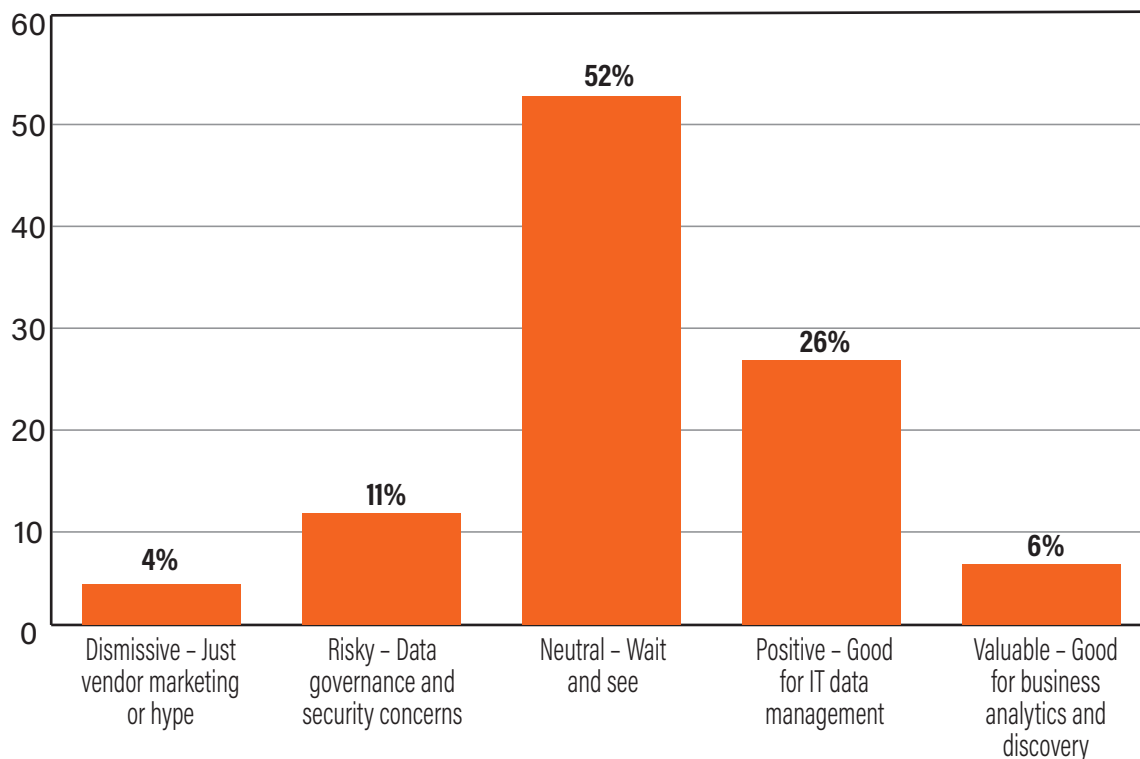
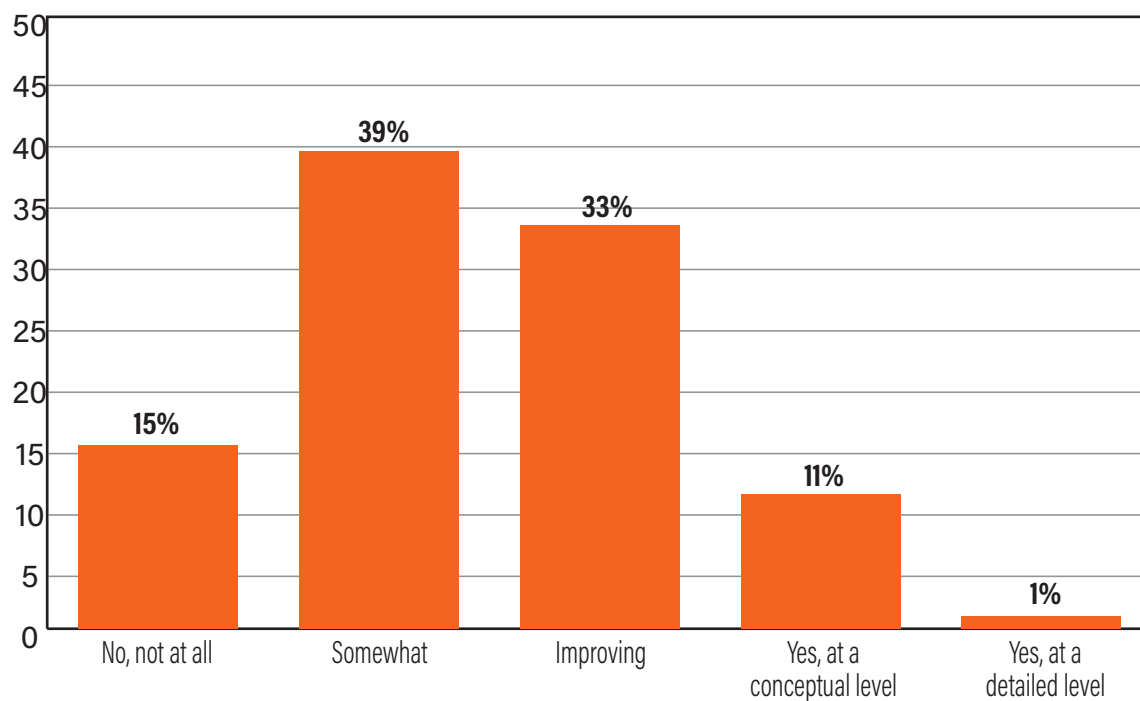


Figure 15: Data Fabric – Understood and Consistent



Data Fabric Perceived Business Value Outcomes and Challenges to Overcome

The survey results on “Data Fabric - Challenges to Overcome” and “Data Fabric - Business Value Outcomes” found in Figures 16 and 17 reveal a nuanced understanding of the hurdles and advantages of implementing data fabric technologies. The contrast between significant challenges, such as migration from legacy systems and adopting new technologies against the substantial benefits like improved data accessibility and insights, underscores a complex landscape.

Organizations recognize that while the transition involves considerable effort, particularly in data governance and tool compatibility, the potential for enhanced analytical capabilities and operational efficiencies holds significant promise. These findings emphasize the importance of strategic planning and robust support systems to successfully navigate the intricacies of data fabric adoption and ensure that the transformative potential of these technologies is fully realized.

Figure 16: Data Fabric – Challenges to Overcome

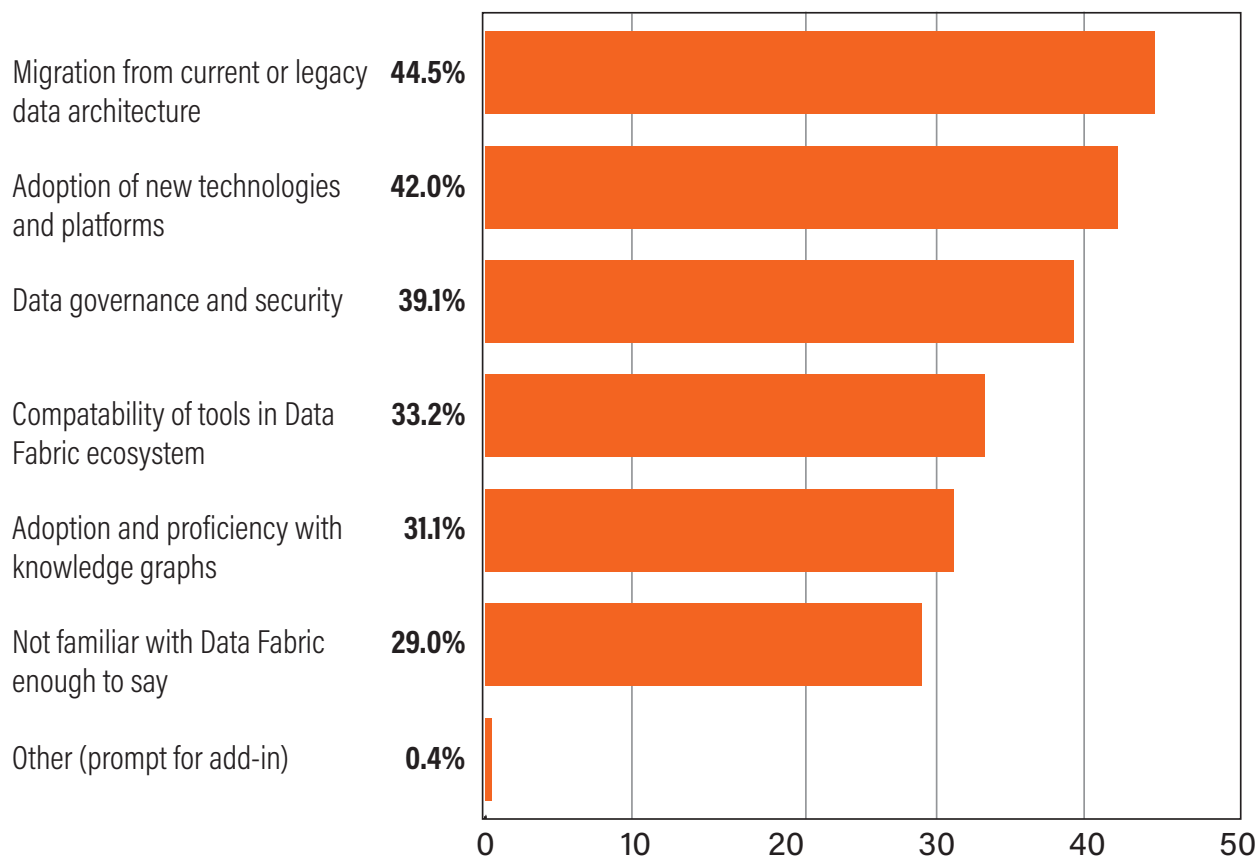
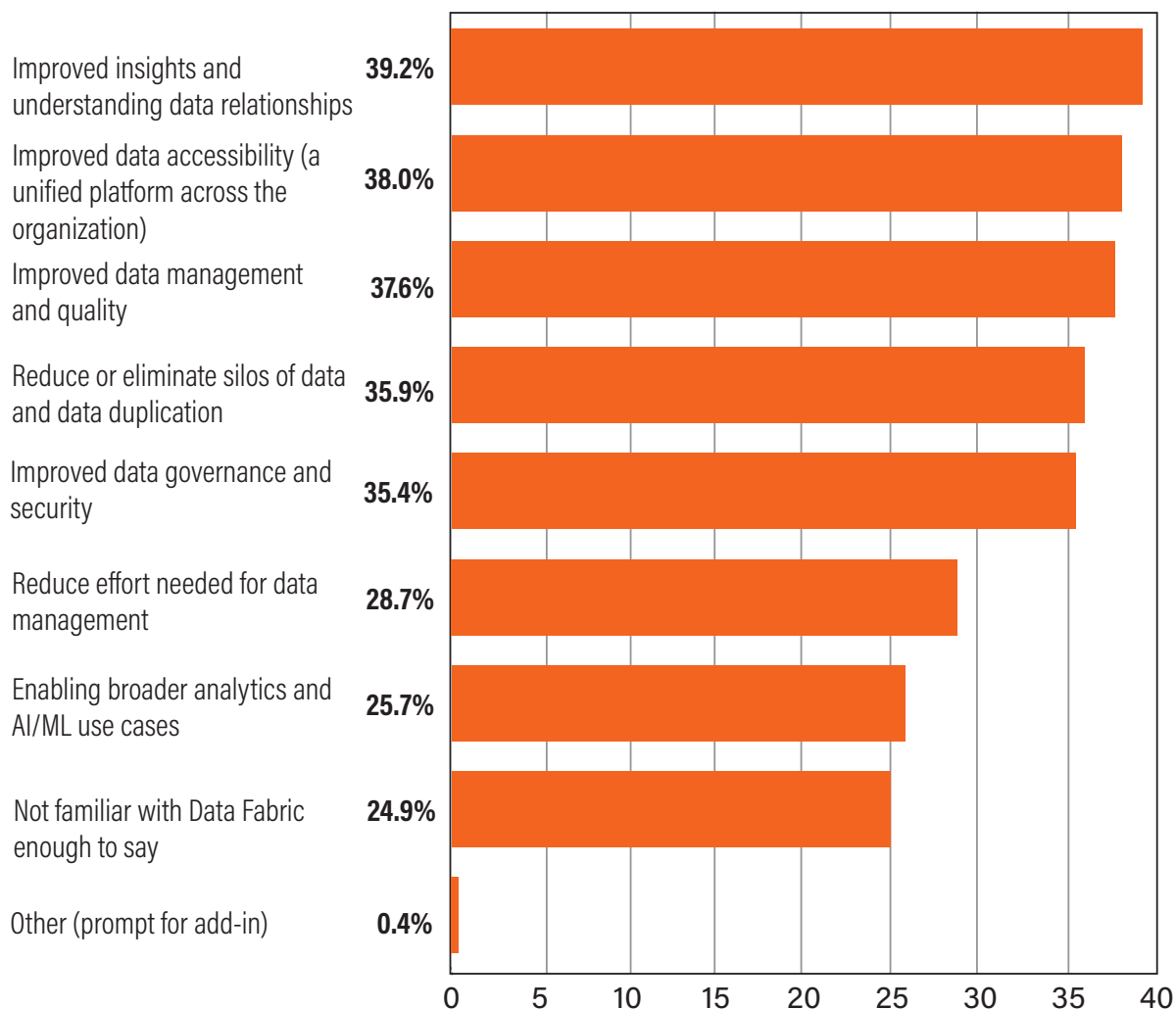


Figure 17: Data Fabric – Believe to be Business Value Outcomes



The challenges of migration and adopting new technologies correlate strongly with the benefits related to improved data accessibility and management. This suggests that overcoming these initial hurdles can lead directly to significant operational improvements.

Data governance and security concerns mirror the anticipated benefits in the same areas. Organizations likely recognize that addressing these challenges through data fabric can lead to robust governance frameworks and enhanced security measures.

Organizations should plan strategic migrations considering technological and human factors, ensuring smooth and well-supported transitions to the data fabric. Investment in training for new tools and technologies, especially around advanced features like knowledge graphs, is crucial to fully leveraging

the potential of the data fabric. Given the dual emphasis on security as both a challenge and a benefit, prioritizing this aspect from the outset can help realize the complete value of data fabric implementations.

These insights suggest that while adopting data fabric involves significant challenges, the benefits of improved data handling, security and insights can substantially outweigh the initial difficulties, leading to more informed and agile business operations.

Data Fabric Components Believed to be Necessary

The survey results in Figure 18 underscore the complexity and multifaceted nature of data fabric solutions. Organizations aiming to leverage data fabric effectively must understand and strategically invest in a broad spectrum of technologies that support robust, scalable and intelligent data ecosystems. This approach ensures that the data fabric supports current operational needs and drives innovation and competitive advantage in an increasingly data-driven world.

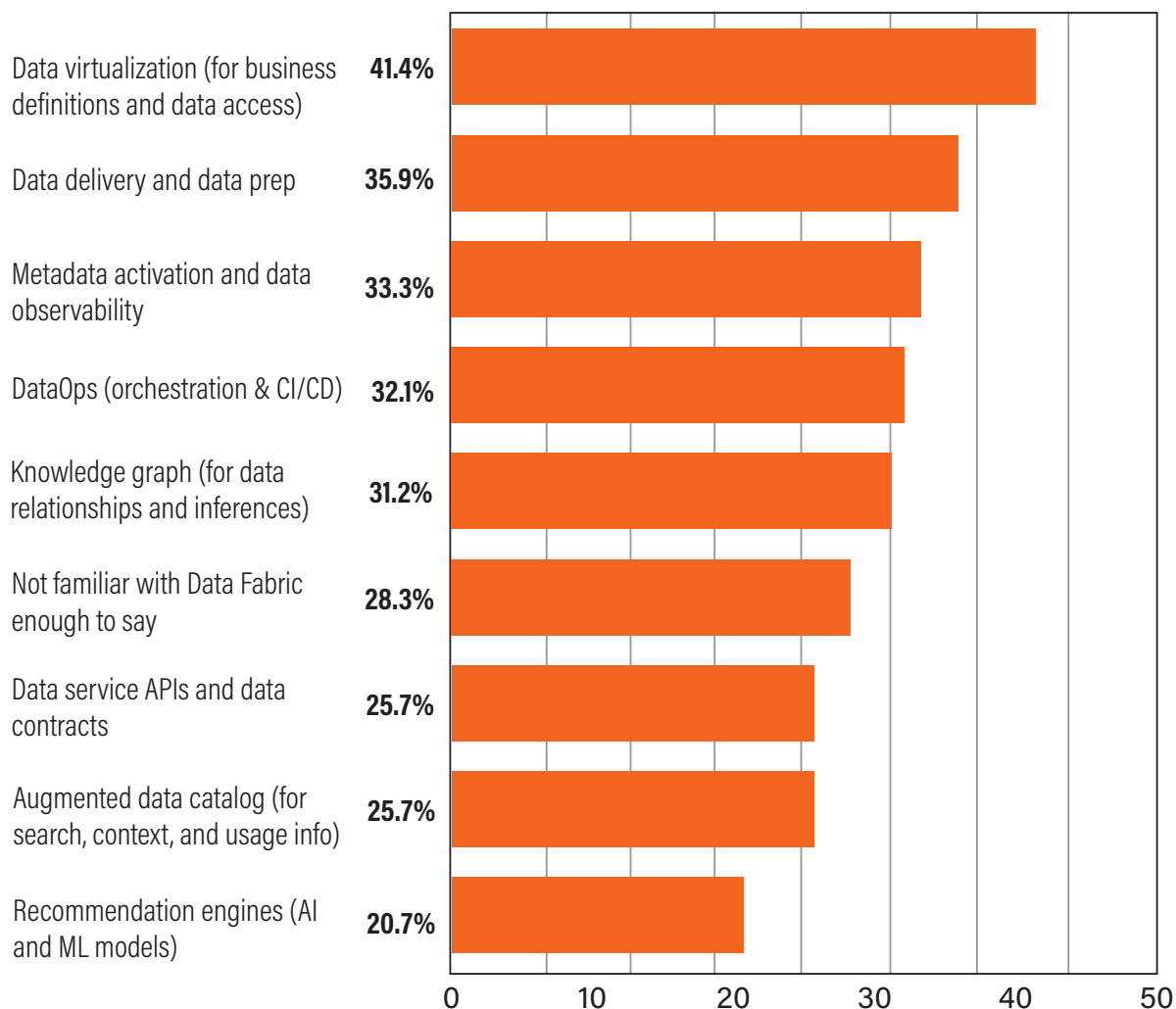
Holistic Approach Required: The variety of components deemed necessary reflects a comprehensive approach to data fabric implementation. Organizations recognize that no single technology suffices; instead, a careful and holistic integration of multiple technologies enhances data utility and accessibility.

Focus on Flexibility and Efficiency: The emphasis on data virtualization and DataOps suggests a strategic focus on not only making data accessible but also ensuring that it is managed efficiently and scalable. This indicates the shift towards more agile data environments that rapidly adapt to changing business needs.

Importance of Metadata and Governance: A significant percentage of respondents highlighted metadata activation and data observability, underscoring the critical role of governance and transparency in data management. This aligns with broader trends emphasizing data quality, security and compliance.

Emerging Technologies and Innovation: Interest in knowledge graphs and AI-driven recommendation engines suggests an investment in advanced technologies that provide deeper insights and predictive capabilities, pushing the boundaries of traditional data management.

Figure 18: Data Fabric – Components Believed to be Necessary



- ▶ **Data Virtualization (41.4%):** This component, perceived as the most necessary, indicates a high value placed on flexible data access and business definition integration, supporting agile and scalable data environments.
- ▶ **Data Delivery and Data Prep (35.9%):** This emphasizes the importance of efficient data management workflows, which enable timely and actionable insights.
- ▶ **Metadata Activation and Data Observability (33.3%):** This reflects a strong need for enhanced data understanding and the ability to track data lineage and usage, which are pivotal for governance and analytics.

- ▶ DataOps (32.1%) and Knowledge Graphs (31.2%): These components highlight the growing emphasis on operational efficiency and complex data relationship mapping, respectively, essential for dynamic and context-rich data systems.
- ▶ Data Service APIs, Data Contracts (25.7%) and Augmented Data Catalogs (25.7%): Acknowledge the necessity for robust interfaces and enriched data discovery capabilities.
- ▶ Recommendation Engines (20.7%): These are the least cited but still significant, showcasing the evolving role of AI and ML in enhancing decision-making processes.

Data Quality Platform Benefits and Challenges to Overcome

The survey results in Figures 19 and 20 on “Data Quality Platform Expected Benefits” and “Challenges” uncover a dynamic interplay between the significant advantages and prevalent barriers associated with implementing data quality platforms. Organizations recognize the critical role of these platforms in improving operational processes and enabling stakeholder engagement in data management. However, they encounter substantial challenges, including technical integration issues and difficulty securing budget approvals. These findings highlight the need for enhanced technical solutions, robust stakeholder training and a clear demonstration of business value. Addressing these hurdles is crucial for organizations to capitalize on the transformative potential of data quality platforms, leading to more reliable, efficient and compliant data operations.

Data Quality Platform Expected Benefits

- ▶ Improve operational system processes for data quality (48.1%): This top benefit underscores the critical need for data quality platforms to enhance the efficiency and reliability of operational processes.
- ▶ Enable business stakeholders to manage data quality rules (36.1%): Highlights the importance of giving non-technical users the tools to contribute to data quality, enhancing ownership and accountability.
- ▶ Provides visibility to data quality metrics and trending (33.9%): Reflects the need for transparency in data quality initiatives, helping organizations measure progress and identify issues.
- ▶ Handles changes to data quality rules faster (32.6%): Indicates agility in responding to evolving data needs and regulatory requirements.

Data Quality Platform Challenges to Overcome

- ▶ Difficulties with data ingestion, integration, or publishing (38.2%) were the most significant challenges, pointing to technical barriers that hinder effective data quality management
- ▶ Developing a business case for budget approval (35.6%): This shows the difficulty in justifying the cost of data quality solutions, which can be seen as a non-revenue generating expense.
- ▶ Lack of processes to manage data quality rules (33.0%): Suggests an organizational gap in establishing consistent, effective procedures for data quality.

Key Takeaways for Data Quality Platforms

1. Enhance Technical Integration: Simplifying the technical aspects of data quality platforms can help overcome the primary challenge of data ingestion and integration, thus unlocking the benefits of improved operational processes.
2. Focus on Change Management: Effective change management strategies are crucial to increase engagement from business stakeholders and drive the adoption of data quality management practices.
3. Quantify Business Impact: For business case development, it is crucial to quantify how improvements in data quality affect business outcomes, such as increased customer satisfaction, reduced operational costs and compliance with regulations.

These insights emphasize that while data quality platforms offer significant potential benefits, realizing these depends critically on overcoming integration complexities, engaging stakeholders effectively and demonstrating the business value of investing in such solutions.

Figure 19: Data Quality Platform Expected Benefits

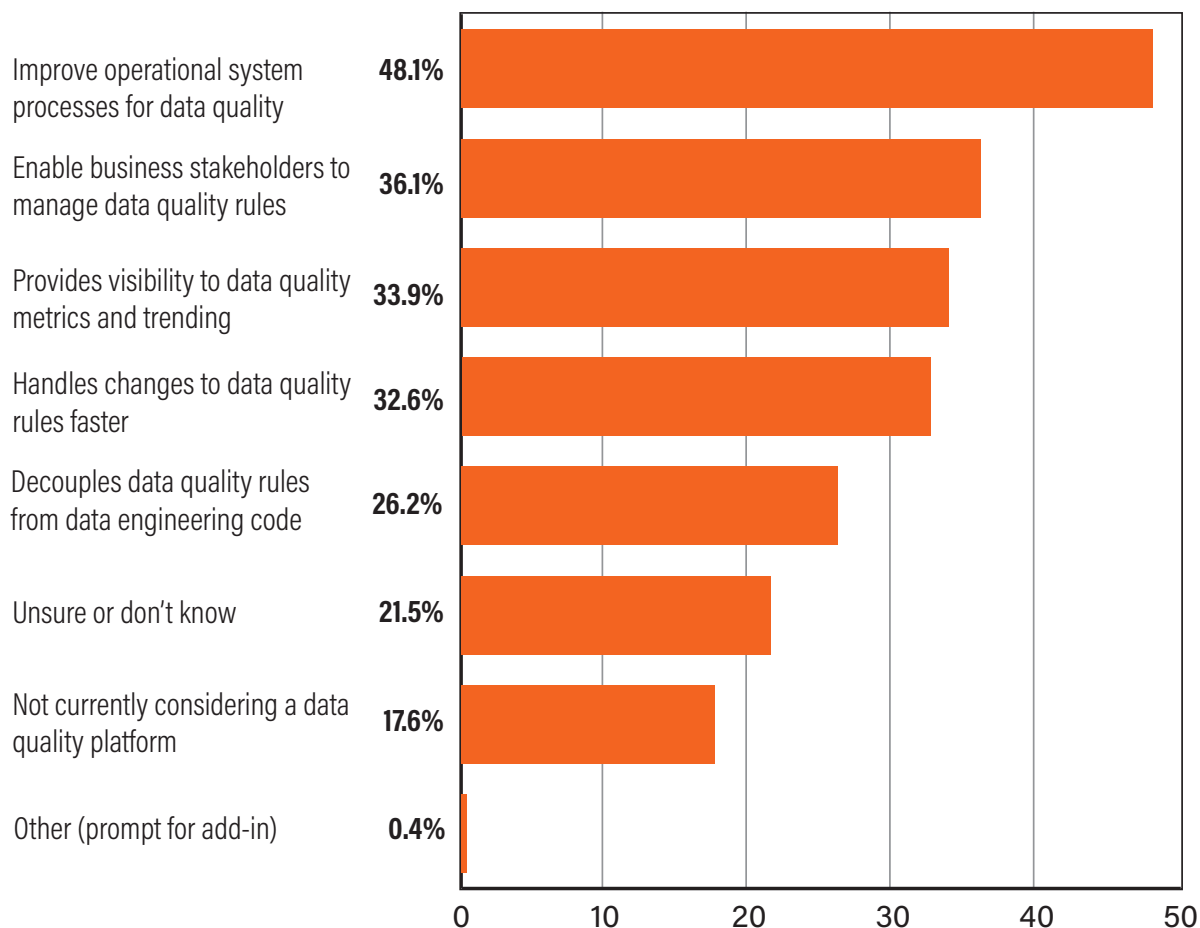
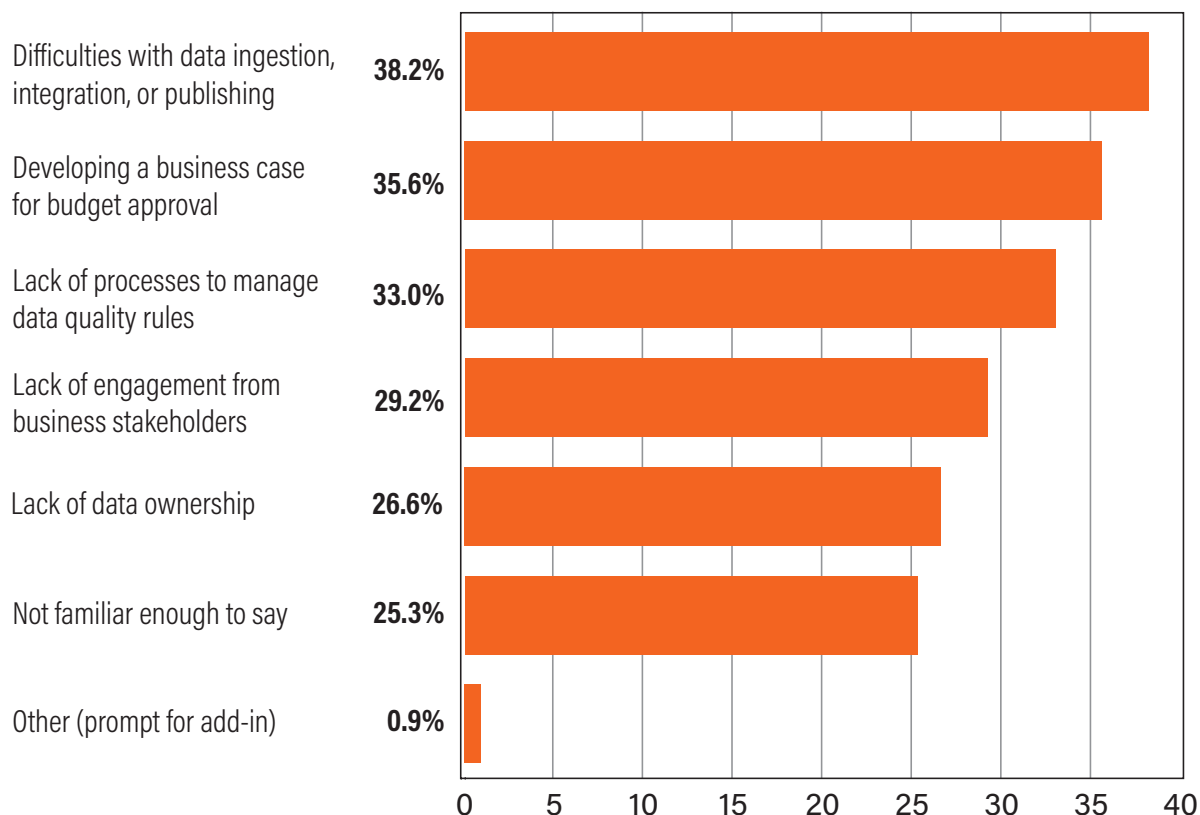


Figure 20: Data Quality Platform Challenges to Overcome



Master Data Management Benefits and Challenges to Overcome

The survey results in Figures 21 and 22 on master data management (MDM) reveal a clear correlation between the recognized benefits and the prevailing challenges of MDM implementations. Organizations value MDM for its ability to create a unified view of essential data and enhance operational efficiency. However, they often struggle with technical complexities and stakeholder engagement, which impede successful deployment. These challenges highlight the need for better communication of MDM benefits, simplified integration techniques and strategic planning to ensure stakeholder buy-in. Addressing these barriers is crucial for leveraging MDM to its full potential, thus transforming data management practices to foster more informed and effective business decisions.

Master Data Management Expected Benefits

- Building a 360-degree view and single source of truth for critical domains (44.9%): This top benefit highlights the essential role of MDM in providing comprehensive views of critical data areas such as customers, products and suppliers, which is crucial for accurate decision-making.

- ▶ Ability to master multi-domain and cross-domain relationships (40.2%): Reflects the importance of MDM in managing complex data relationships across different business areas, enhancing data consistency and reliability.
- ▶ Synchronizing operational systems for process efficiency (39.7%): Indicates MDM's role in aligning various business processes, which can lead to improved operational efficiency.
- ▶ Feed high-quality, trusted data for analytics (38.9%): Underlines the necessity of MDM in ensuring data quality and trustworthiness, which are vital for effective analytics.

Master Data Management Challenges to Overcome

- ▶ Difficulties with data ingestion, integration, or publishing (39.3%) pointed to technical obstacles in managing data within MDM systems.
- ▶ Implementations are considered too complex and costly (33.8%), Reflecting concerns about the resources and expertise required to deploy MDM systems.
- ▶ Lack of engagement from business stakeholders (32.9%): Indicates a common hurdle in MDM initiatives, where buy-in from key stakeholders is often lacking, potentially due to a lack of understanding of MDM's benefits.
- ▶ Developing a business case for budget approval (30.8%) highlights the challenge of justifying the cost of MDM projects to decision-makers.

Key Takeaways for MDM Initiatives

1. Invest in Stakeholder Education: Enhancing stakeholders' understanding of the benefits of MDM can increase engagement and support for these initiatives.
2. Simplify Integration Techniques: Developing more straightforward data ingestion and integration methods can reduce MDM implementations' perceived complexity and cost.
3. Highlight Long-Term Value: Focusing on the long-term gains from improved data quality and operational efficiency can help build a stronger business case for MDM projects.

These insights emphasize that while the potential benefits of master data management are substantial, realizing these benefits requires overcoming significant technical and organizational challenges. Addressing these obstacles calls for strategic planning, stakeholder education and an emphasis on the tangible business value derived from successful MDM implementation.

Figure 21: Master Data Management Expected Benefits

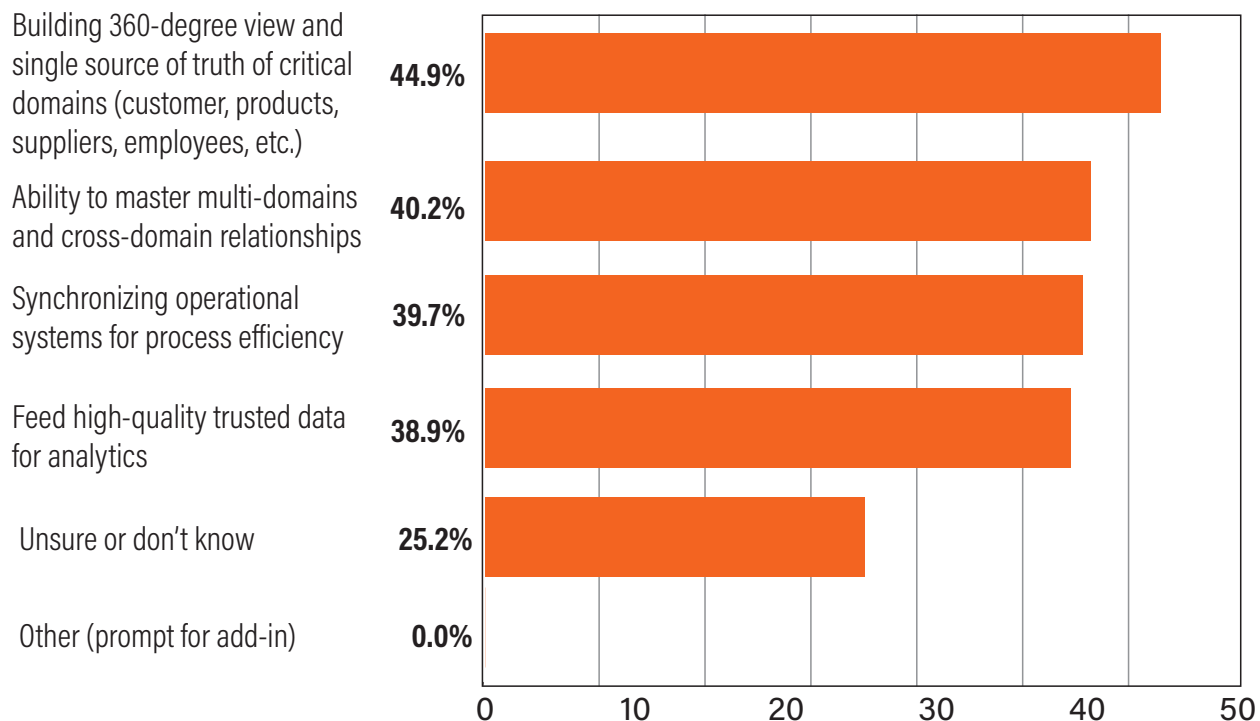
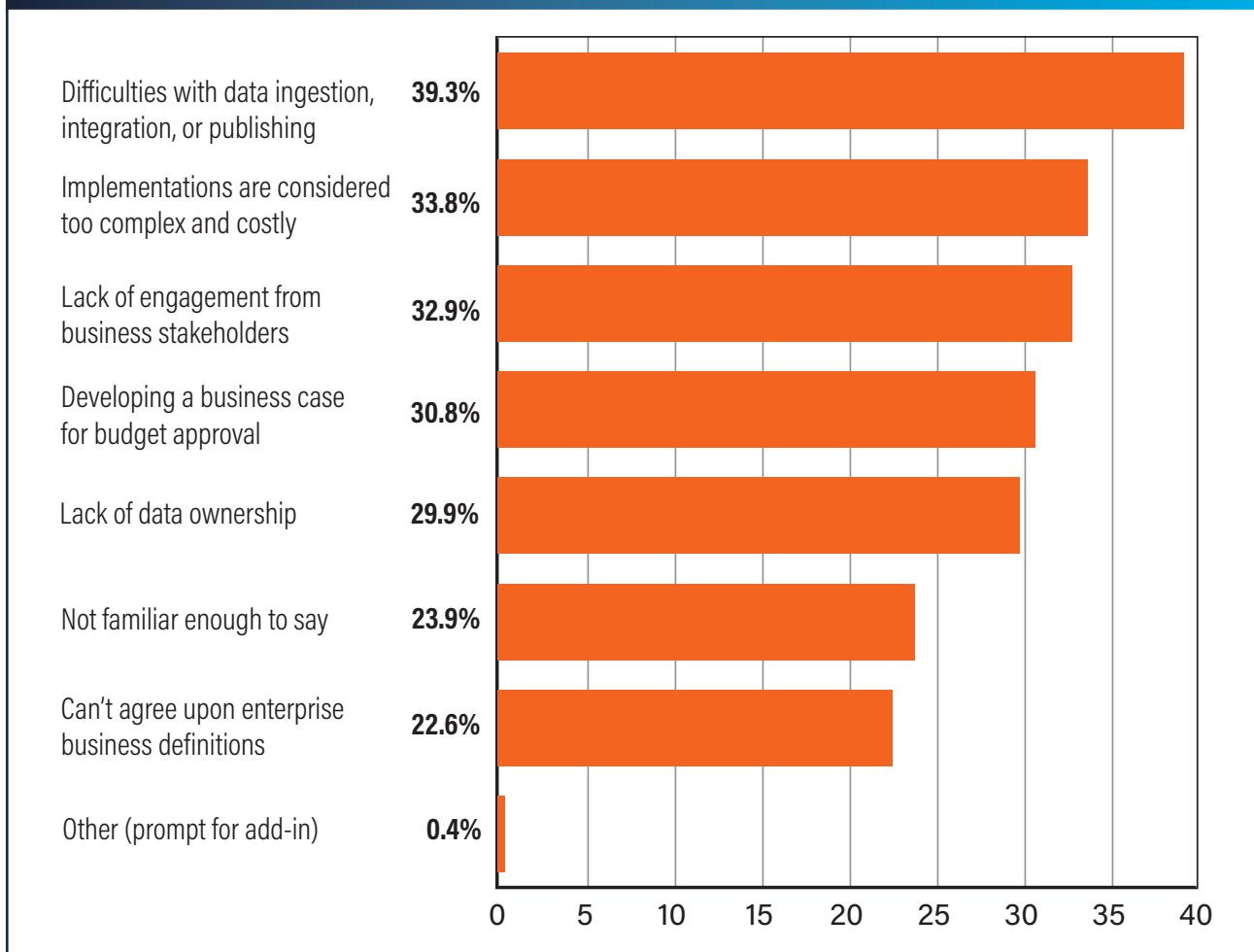


Figure 22: Master Data Management Challenges to Overcome



Data Catalog Benefits and Challenges to Overcome

The survey results found in Figures 23 and 24 on “Data Catalog Benefits” and “Data Catalog Challenges” offer a deep dive into the pivotal role of data catalogs in modern data management, addressing their substantial benefits against significant implementation challenges. The results underscore the importance of data catalogs in enhancing data literacy and governance, streamlining access for AI and analytics and managing risk. However, these benefits are often tempered by challenges such as user adoption, data literacy and the time required to realize value. This correlation highlights the necessity for focused training and strategic deployment to overcome barriers and harness the full potential of data catalogs, emphasizing that success hinges on both technological solutions and human factors integration.

Data Catalog Benefits

- ▶ Helps users understand data context and governance: 38.0% appreciate this benefit, highlighting data catalogs' role in enhancing data literacy and management.
- ▶ Finding the right data for AI and analytics initiatives: 37.1%, underscoring the importance of data discoverability in powering advanced analytics.
- ▶ Manages data exposure, risk and compliance: 35.4%, indicating the value of data catalogs in maintaining data security and adhering to regulatory standards.
- ▶ Shares usage information about datasets: 32.9%, facilitating better collaboration and utilization of data across the organization.

Data Catalog Challenges

- ▶ User adoption (awareness and training): 36.3% find this the most significant challenge, reflecting the need for practical training and change management.
- ▶ Time to value: 31.2% are concerned about the speed at which data catalogs deliver tangible benefits, highlighting expectations for quick wins.
- ▶ Low data literacy and discomfort with working with data: 30.8%, suggesting that underlying skills deficits can hinder effective use of data catalogs.

Key Takeaways for Data Catalogs

1. **Focus on Training and Change Management:** Organizations must invest in comprehensive training programs to enhance user adoption and ensure staff can fully leverage data catalog functionalities.
2. **Enhance Data Literacy:** Developing data literacy across the organization is crucial for effectively using data catalogs and fostering an environment where data-driven decisions are the norm.
3. **Strategic Implementation:** To overcome the challenge of time to value, organizations should strategically plan the implementation of data catalogs, ensuring they are quickly integrated and aligned with business goals to provide immediate benefits.

These findings illustrate the crucial role of data catalogs in modern data management strategies and highlight the importance of addressing technological and human factors to maximize their benefits.

Figure 23: Data Catalog Benefits

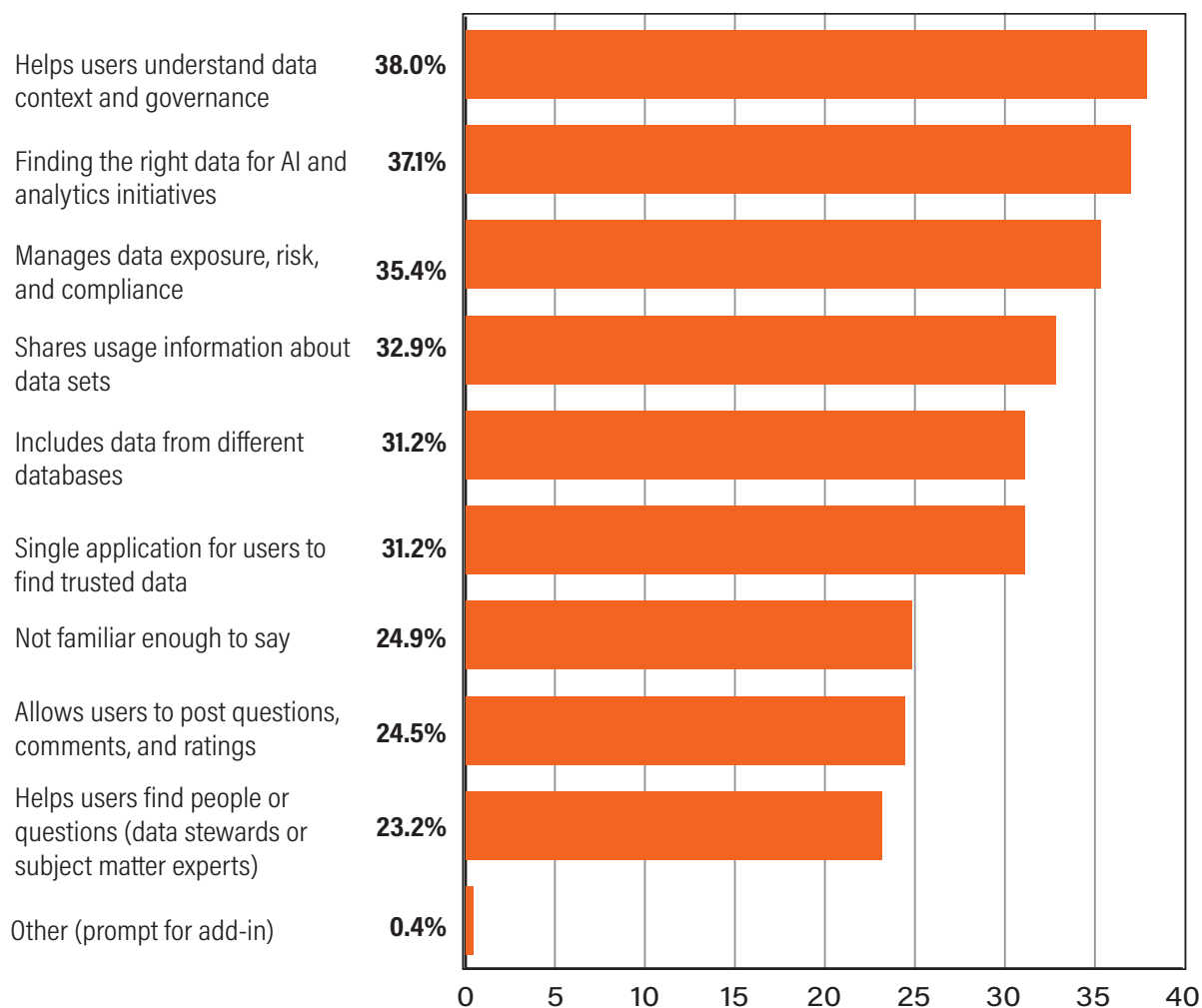
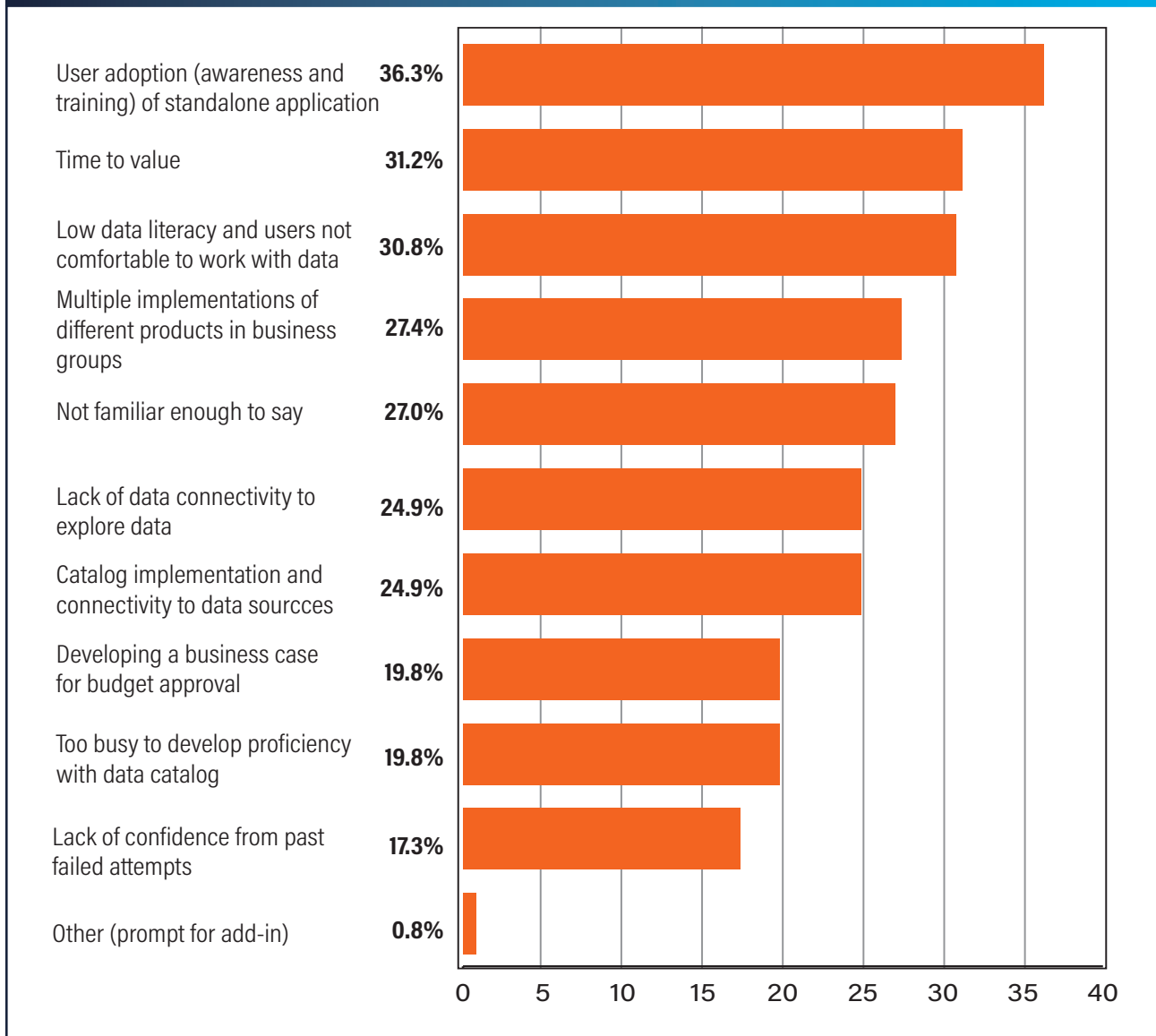


Figure 24: Data Catalog Challenges to Overcome



Analytics Catalog Benefits and Challenges to Overcome

The survey results shown in Figures 25 and 26 on “Analytics Catalog Benefits” and “Challenges” recognize the perceived advantages and obstacles encountered in implementing analytics catalogs in organizations. While analytics catalogs are highly valued for centralizing access to reports and enhancing data governance, significant challenges such as user adoption and low data literacy impede their effective utilization. The correlation between these benefits and challenges highlights a need for focused educational initiatives and improved integration strategies to bridge the gap between capability and usage.

Organizations must prioritize overcoming these barriers through comprehensive training and seamless technological integration to leverage analytics catalogs’ efficiencies and governance enhancements fully.

Analytics Catalog Benefits

- ▶ Helps users search for reports and dashboards in one application: Recognized by 40.5% of respondents, this feature underscores the convenience and efficiency of centralized access
- ▶ Helps users understand context and governance: Cited by 40.1%, this reflects the catalog’s role in enhancing data comprehension and regulatory adherence.
- ▶ Includes all BI tools: This is valued at 34.6%, indicating the importance of integration across various platforms to streamline analytics processes.
- ▶ Shares usage information about reports and dashboards: Noted by 32.5%, which helps organizations optimize their data resources.

Analytics Catalog Challenges

- ▶ User adoption and awareness: At 33.5%, this is the primary challenge, indicating a significant need for training and promotion of the catalog’s capabilities.
- ▶ Low data literacy and user comfort with reports: At 27.1%, this highlights the broader issue of data skills within organizations.
- ▶ Implementation and connectivity to BI tools: 26.7% of respondents are concerned about integrating and connecting BI tools, which complicates the effective use of analytics catalogs.

Key Takeaways for Analytics Catalogs

1. **Emphasize Training and Awareness:** Organizations should invest in targeted training programs that promote analytics catalogs and enhance overall data literacy to overcome adoption barriers.

2. **Focus on Integration Capabilities:** Ensuring that analytics catalogs can effectively integrate with existing BI tools is crucial for maximizing their utility and user satisfaction.
3. **Leverage for Governance and Efficiency:** Analytics catalogs should be positioned as tools for data access and essential components for data governance and operational efficiency.

These insights suggest that while analytics catalogs offer significant potential benefits, realizing these depends on overcoming associated challenges through strategic training, integration efforts and promoting a culture of data proficiency.

Figure 25: Analytics Catalog Benefits

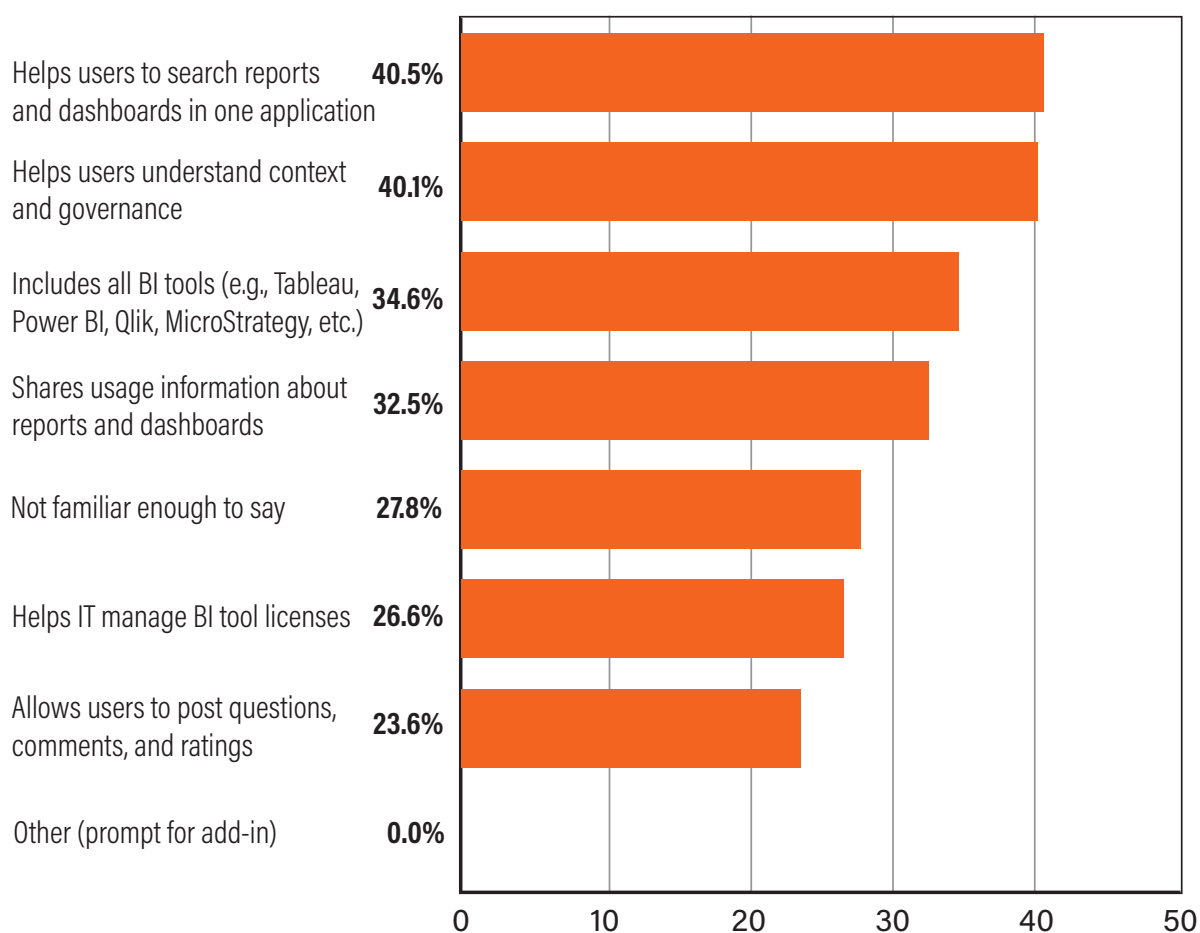
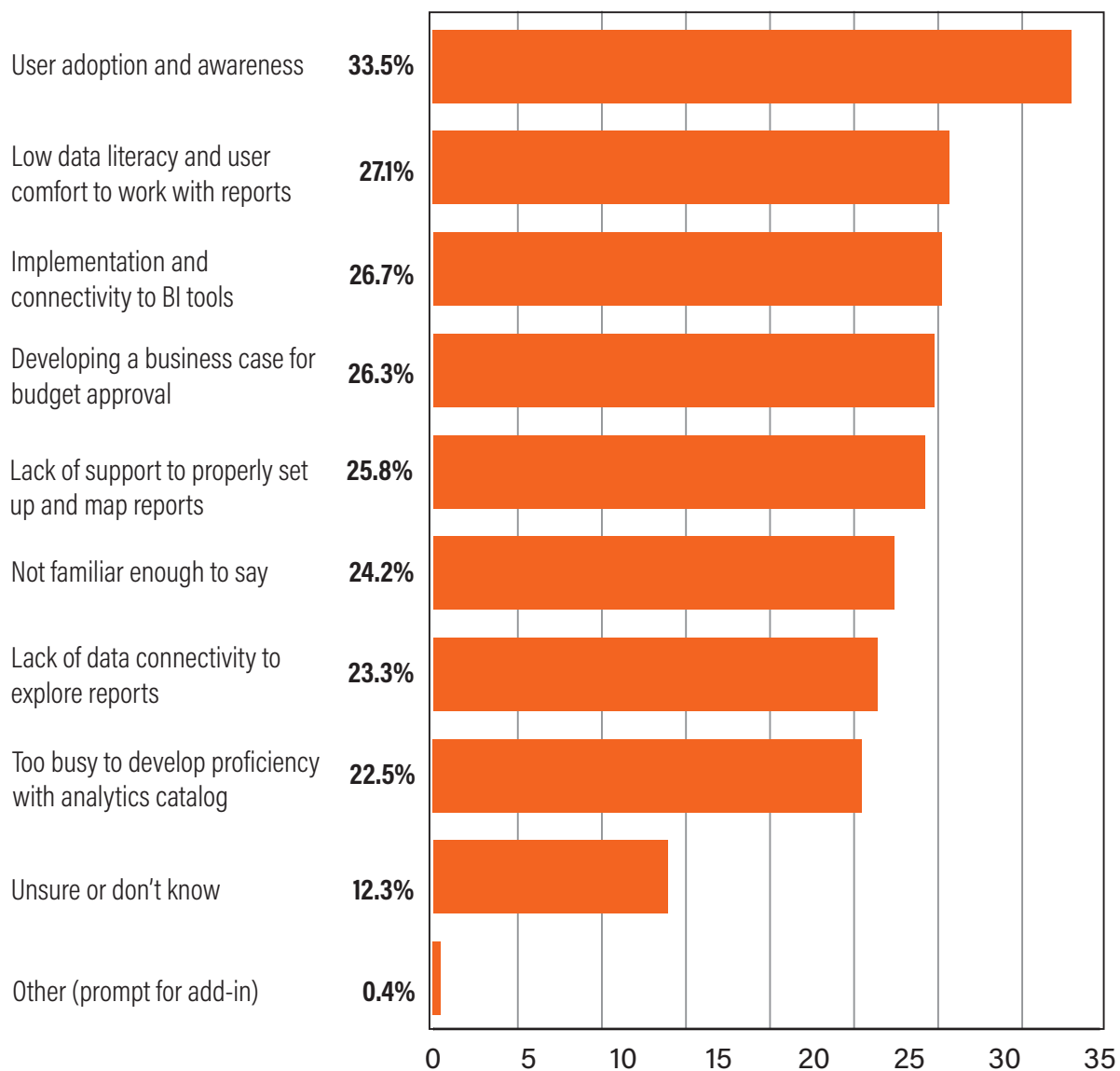


Figure 26: Analytics Catalog Challenges to Overcome



Active Metadata and Data Observability Benefits and Challenges to Overcome

The survey results shown in Figures 27 and 28 on “Active Metadata & Data Observability Benefits” and “Challenges” reveal a nuanced landscape where the potential advantages of metadata are recognized but not fully realized due to prevalent challenges. While organizations value active metadata to enhance governance, increase data quality and uncover hidden data relationships, they struggle with a lack of expertise, insufficient standards and operational integration.

These findings highlight the need for targeted educational programs, more evident standards and better integration strategies to leverage the full capabilities of metadata. Addressing these gaps is crucial for organizations to harness metadata’s potential to effectively improve data trust, quality and insights.

Active Metadata and Data Observability Benefits

- ▶ Improve data governance monitoring and intervention (36.3%): This top benefit highlights the importance organizations place on enhancing their ability to monitor and manage their data governance practices actively.
- ▶ Improve data quality monitoring and intervention (35.5%): This closely follows, indicating the critical role of metadata in maintaining high data quality standards.
- ▶ Increase trust in data with processing information (35.5%): This is equally rated, illustrating that metadata contributes significantly to making data processing transparent and trustworthy.
- ▶ Gain insights and inferences about hidden relationships in data (34.6%): This indicates that metadata helps unveil complex patterns and connections crucial for advanced analytics.

Active Metadata and Data Observability Challenges

- ▶ Lack of knowledge in analyzing operational metadata for benefits (34.2%) is the most significant challenge, pointing to a skills gap that prevents organizations from fully leveraging metadata.
- ▶ Lack of standards and definitions about operational metadata to capture (32.5%): This challenge underscores a need for more straightforward frameworks and guidelines to standardize metadata usage.
- ▶ Getting data engineers to capture operational metadata in pipelines (30.8%): Reflects operational challenges in embedding metadata practices into daily workflows.

Key Takeaways for Active Metadata and Data Observability

1. **Invest in Training and Development:** To overcome the knowledge gap, organizations must prioritize training programs that enhance the ability to analyze and leverage metadata effectively.
2. **Develop Clear Standards:** Creating and adopting clear standards and definitions for metadata usage will help standardize practices across industries and within organizations, facilitating easier adoption and more effective management.
3. **Embed Metadata in Daily Operations:** Integrating metadata practices into daily data engineering workflows is crucial to realize its benefits, from improving data quality to enhancing governance and gaining deeper insights.

These insights underscore the potential of active metadata and data observability to transform data management practices by enhancing governance, trust and insight capabilities. However, realizing these benefits depends critically on addressing the existing skills gap, standardization issues and operational integration challenges.

Figure 27: Active Metadata & Data Observability Benefits

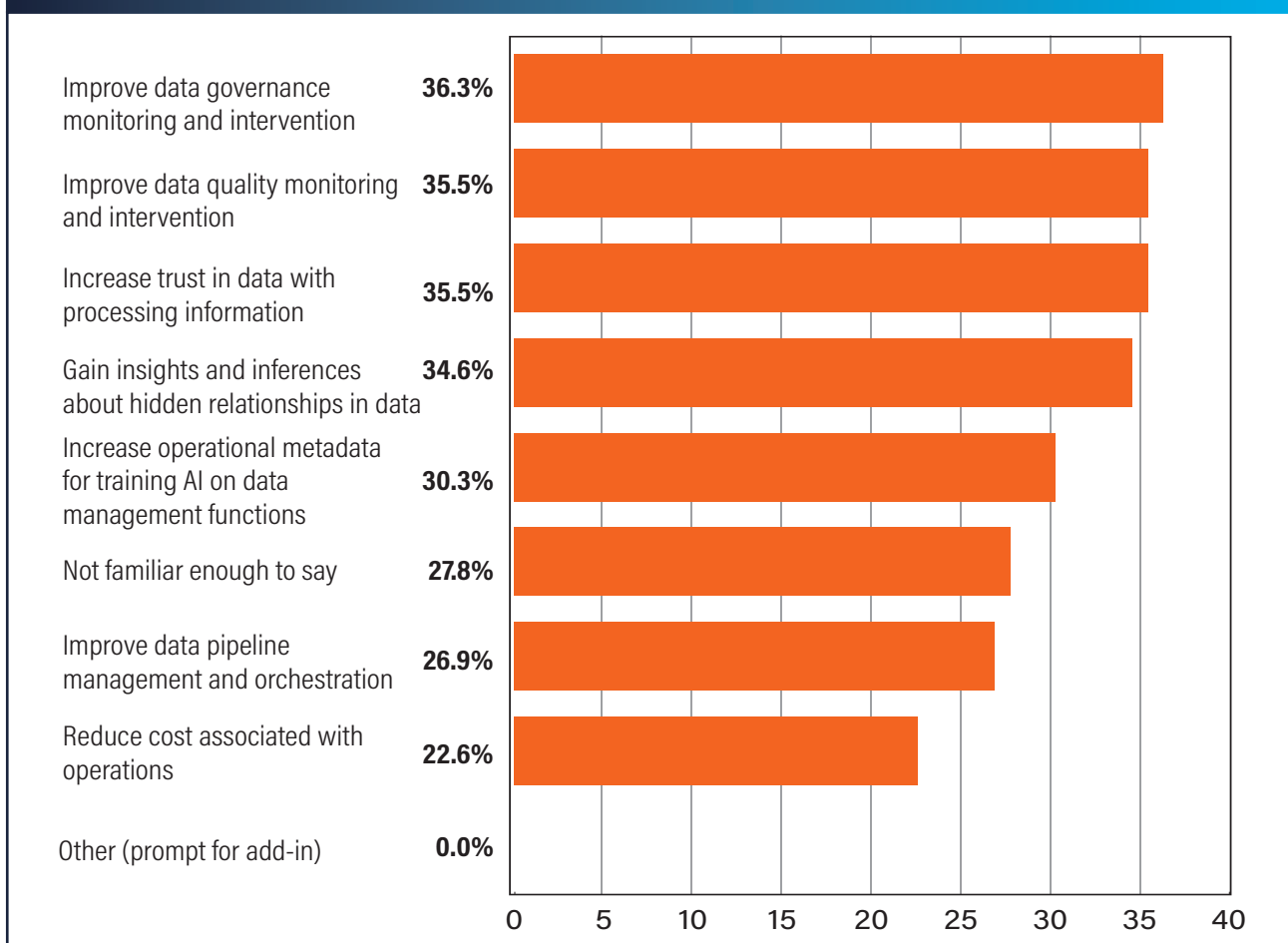
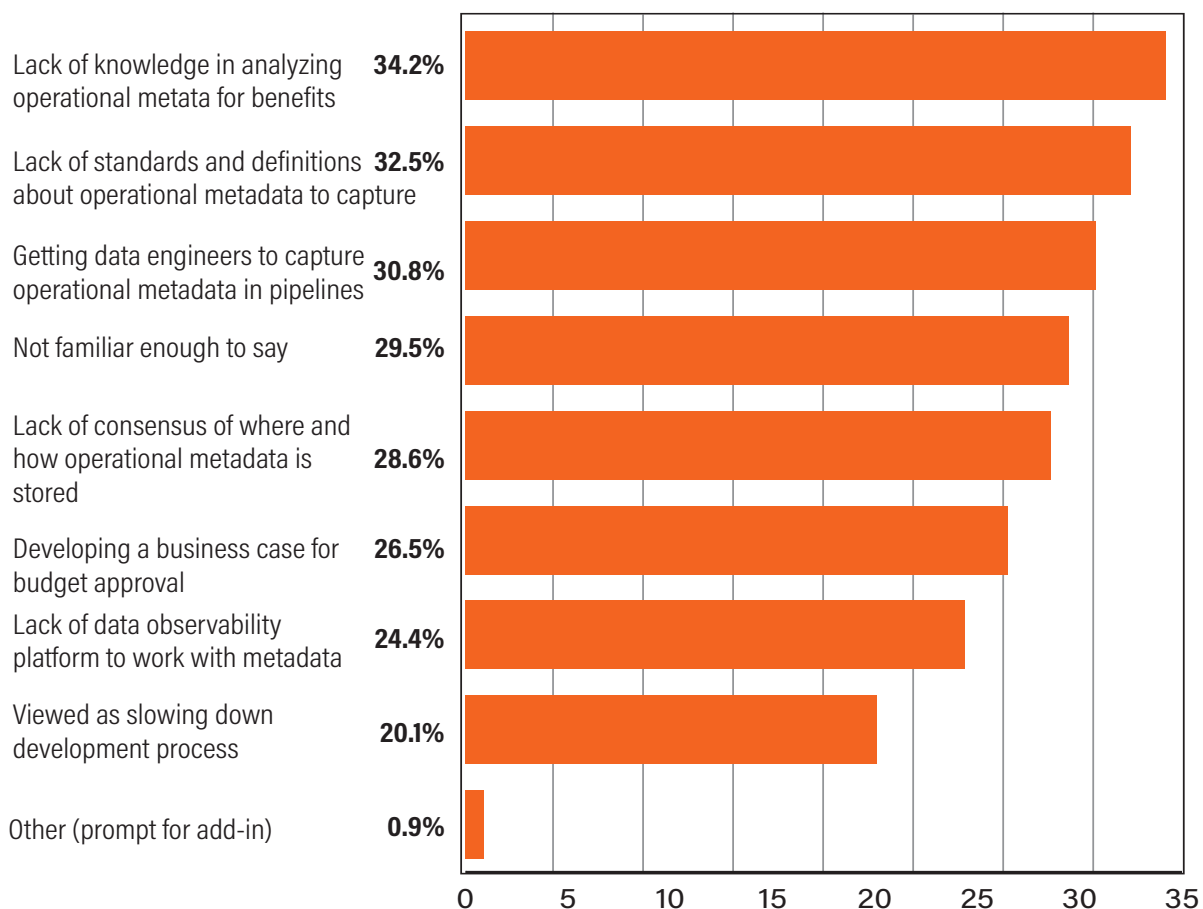


Figure 28: Active Metadata & Data Observability Challenges to Overcome



Embracing a Distributed Data Landscape



Some surveys have indicated that enterprises may use hundreds of data sources per day. Data volumes at organizations are growing between 60 – 100% per month. Numerous enterprises nowadays function within a distributed computing framework, where data and operations are spread across a variety of on-premises systems, multiple cloud platforms, and edge devices. Within such a complex setup, locating and managing data becomes increasingly challenging, let alone making data available for analytics, data science, and machine learning (ML). A key pillar of a modern data strategy is embracing this distributed data landscape.

A Logical Data Strategy

Logical data architectures and management enable access to multiple, diverse data sources while appearing as one “logical” data source to users. They are centered around unifying data that is stored and managed across multiple data management systems, including traditional data sources like databases, enterprise data warehouses, data lakes, and more, and other data sources like applications, big data files, web services, and the cloud, to meet practically every possible analytics use case. Logical data management enables practices like data discovery, access, security, integration, and sharing to be performed through a logical (or virtual) representation instead of directly on each physical source system. The logical approach to data integration and data management, supporting data fabric, data mesh, and data hub architectures, is realized by data virtualization.

Benefits of logical data strategy include:



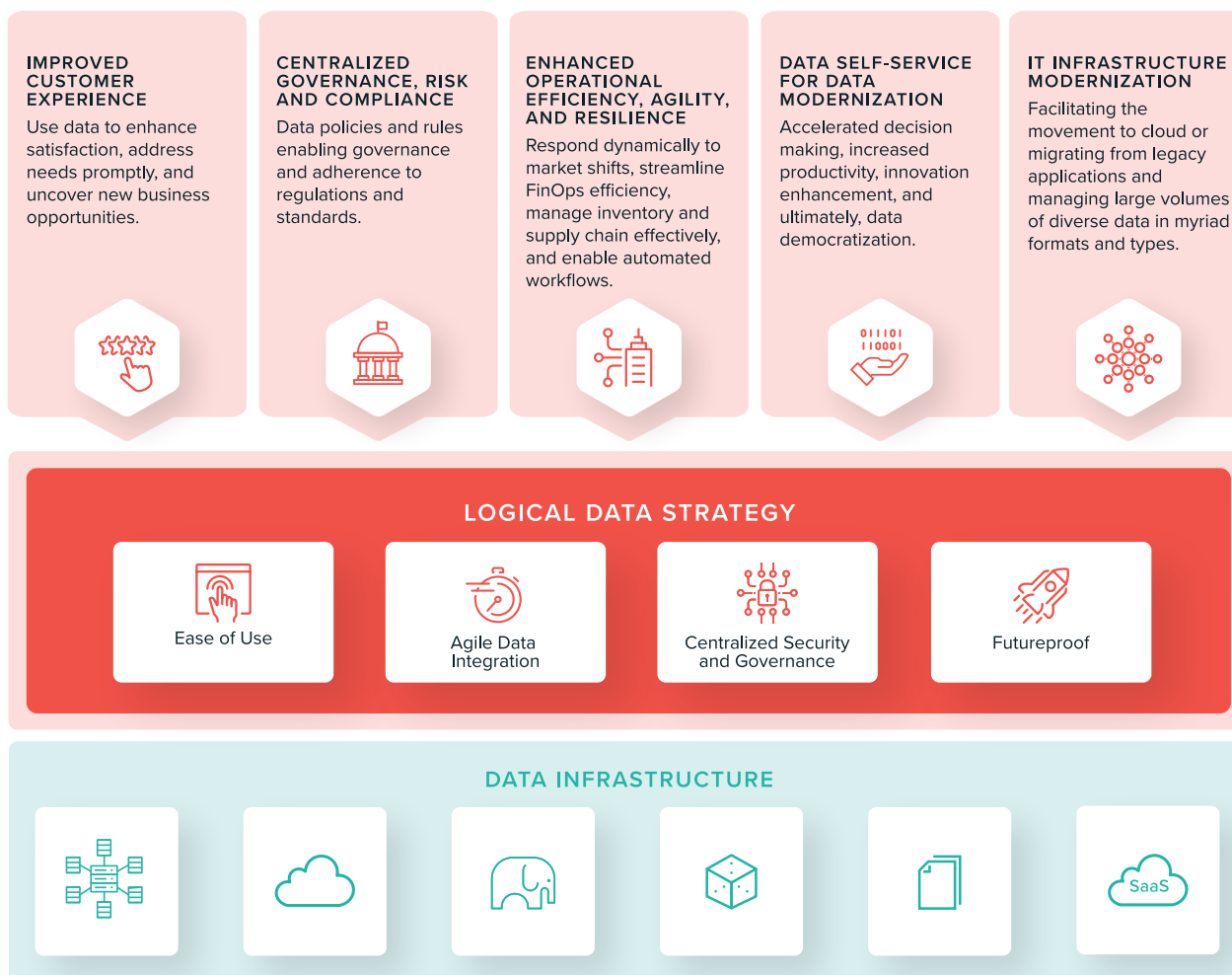
Real-time access to all data through any analytics tool or data API without having to move or copy it.



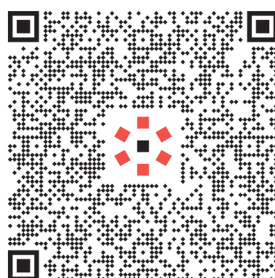
Rapid development, low maintenance, flexible data delivery and management, providing end-to-end visibility.



Self-service data discovery and access with governance and security.

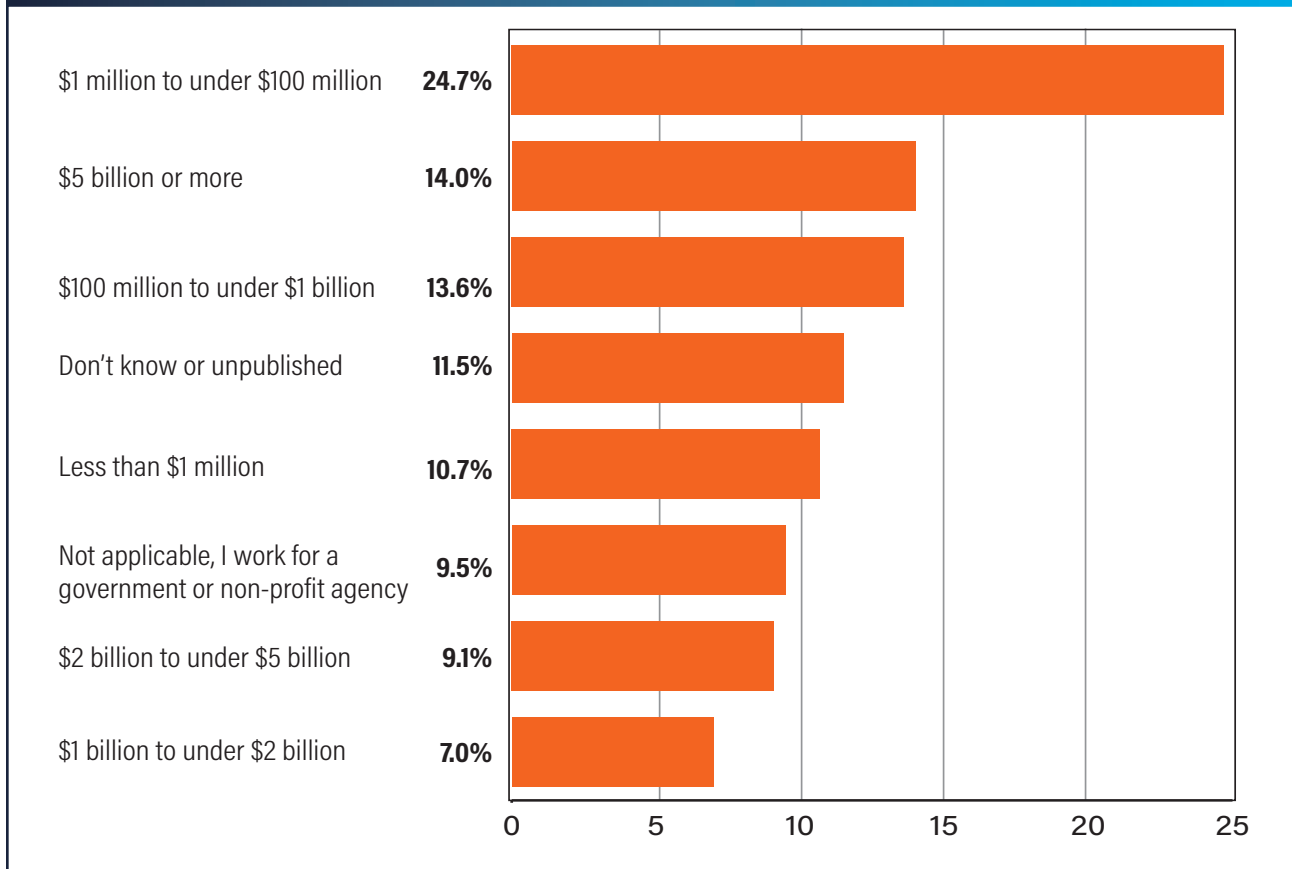


Such a logical data strategy should provide a comprehensive blueprint that outlines the necessary technology, procedures, personnel, and guidelines vital for overseeing an entity's information resources over an extended period. It should operationalize the organization's overarching vision concerning the acquisition, retention, dissemination, and utilization of its data resources. **Scan the QR code or download the whitepaper** to learn how the infrastructure resulting from such a strategy should streamline data handling at each stage of the organization's journey, facilitating accessibility for all stakeholders. The end goal is to provide the business with the data it needs for competitive advantage and success.



Respondent Demographic Results

Figure 29: Respondents' Organization Annual Sales Revenue



Respondent Demographic Results

Figure 30: Respondents' Organization Annual Sales Revenue

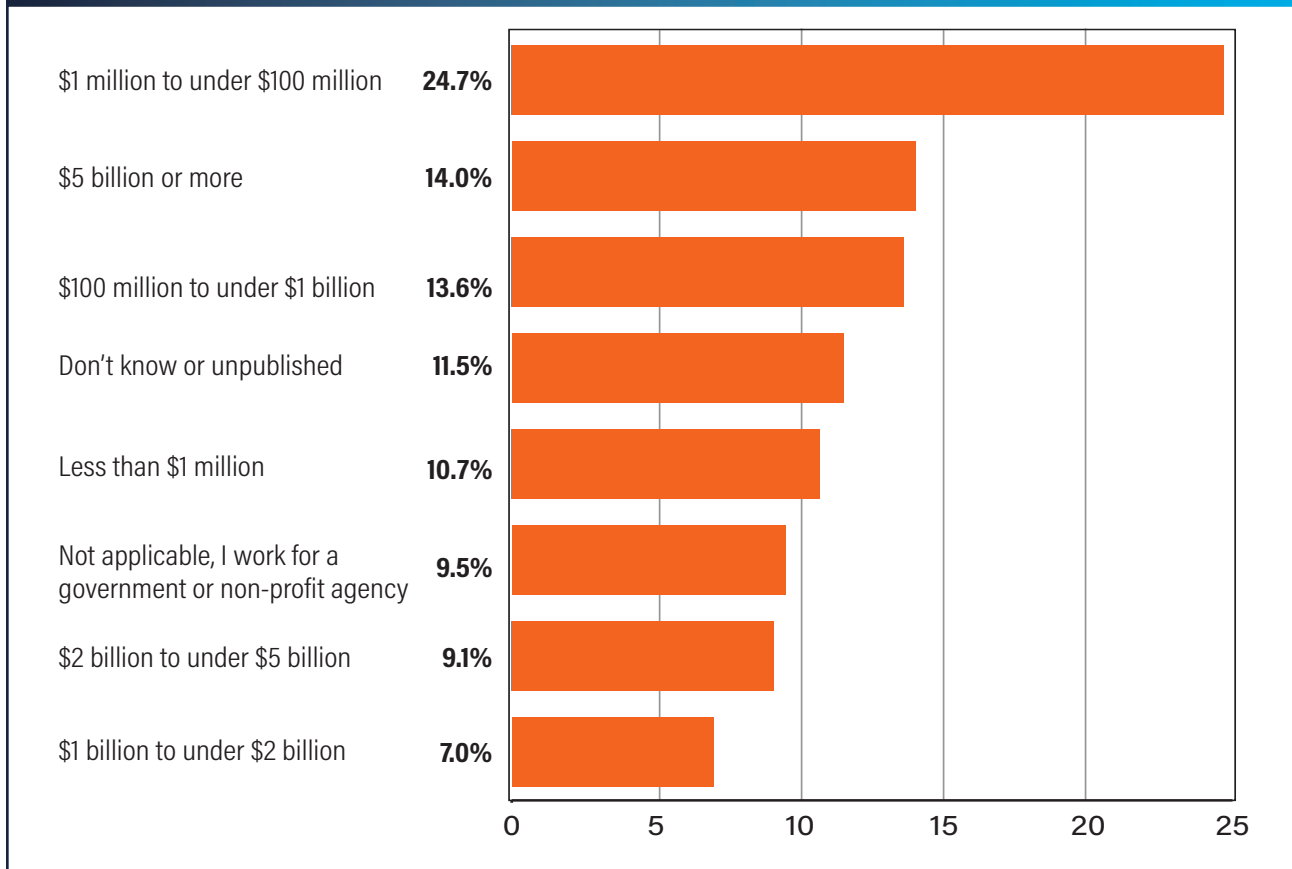


Figure 31: Respondents' Company Primary Industry

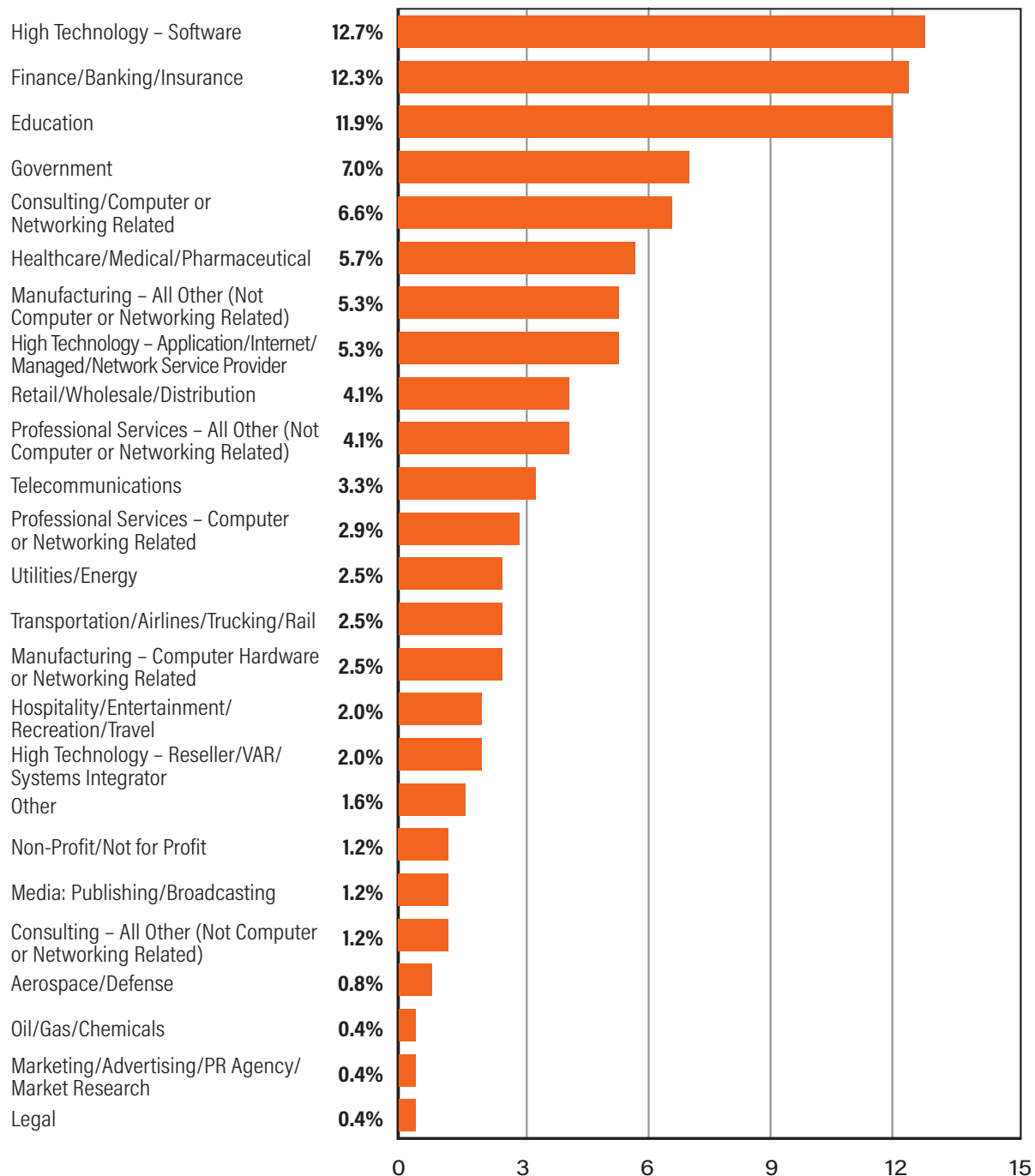


Figure 32: Respondents' Company Regional Operations

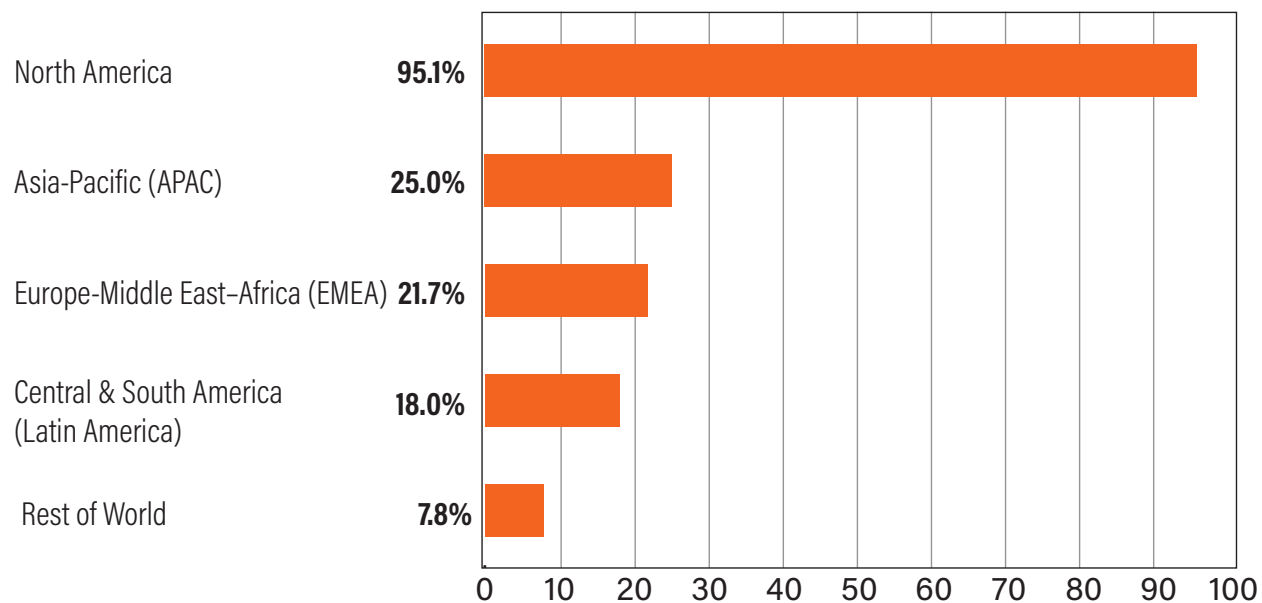


Figure 33: Worldwide Company Employee Count

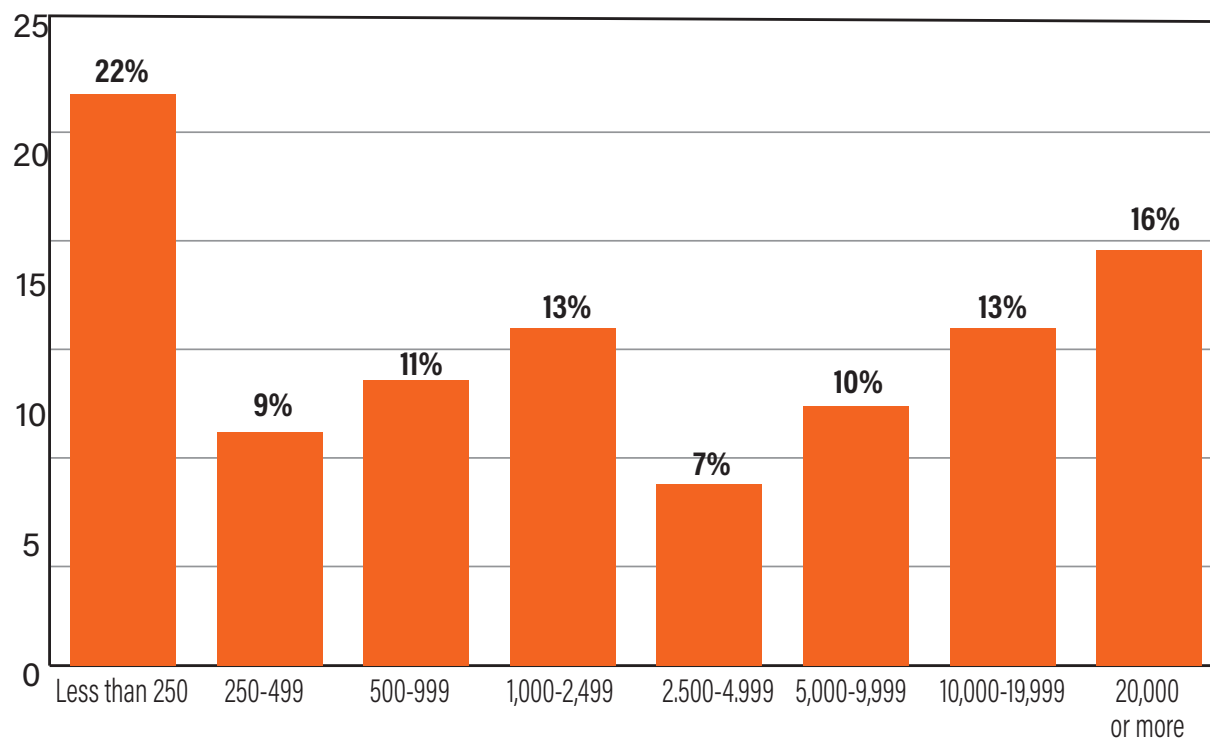


Figure 34: Respondents' Department or Functional Area

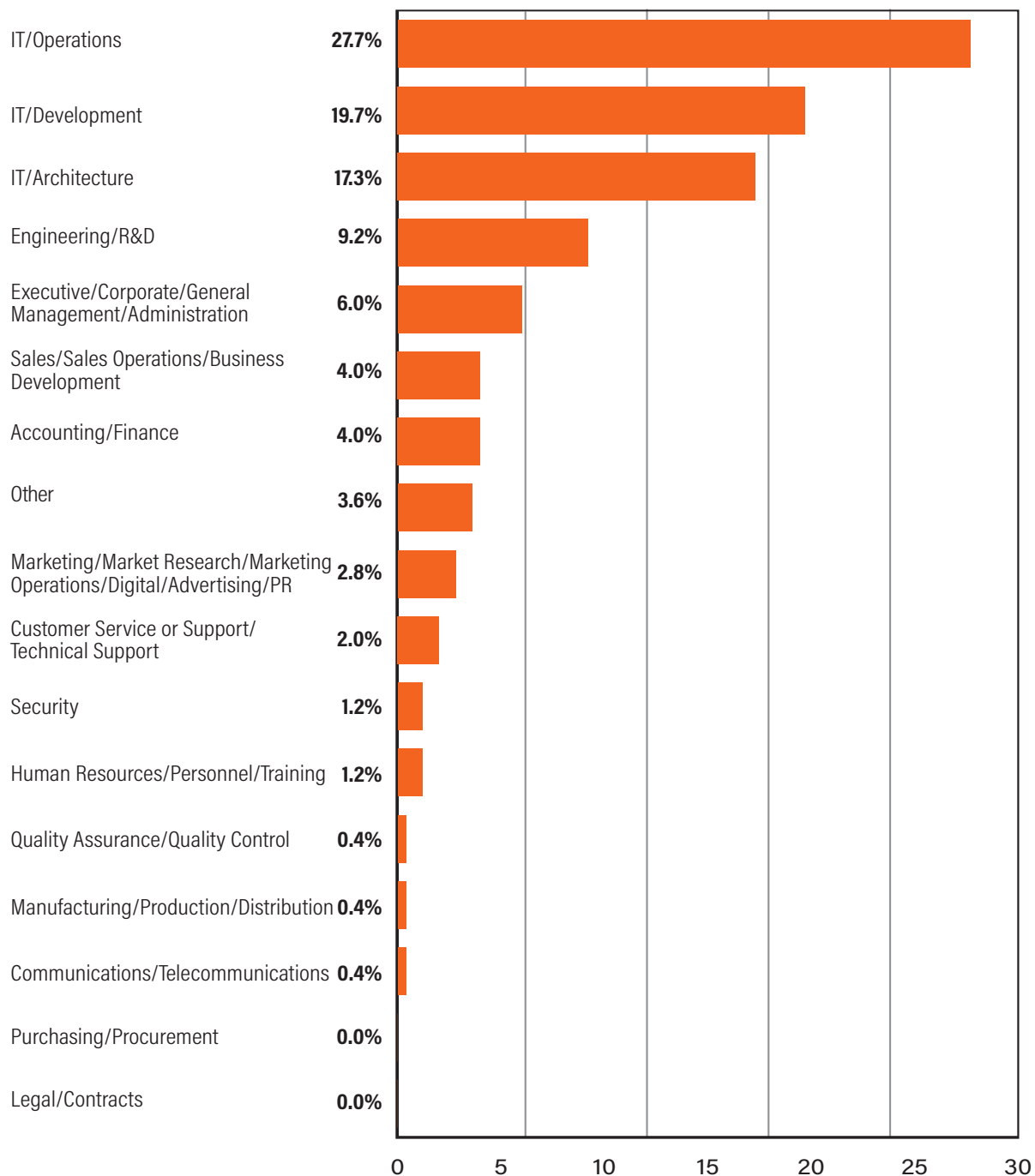


Figure 35: Respondents' Organizational Roles

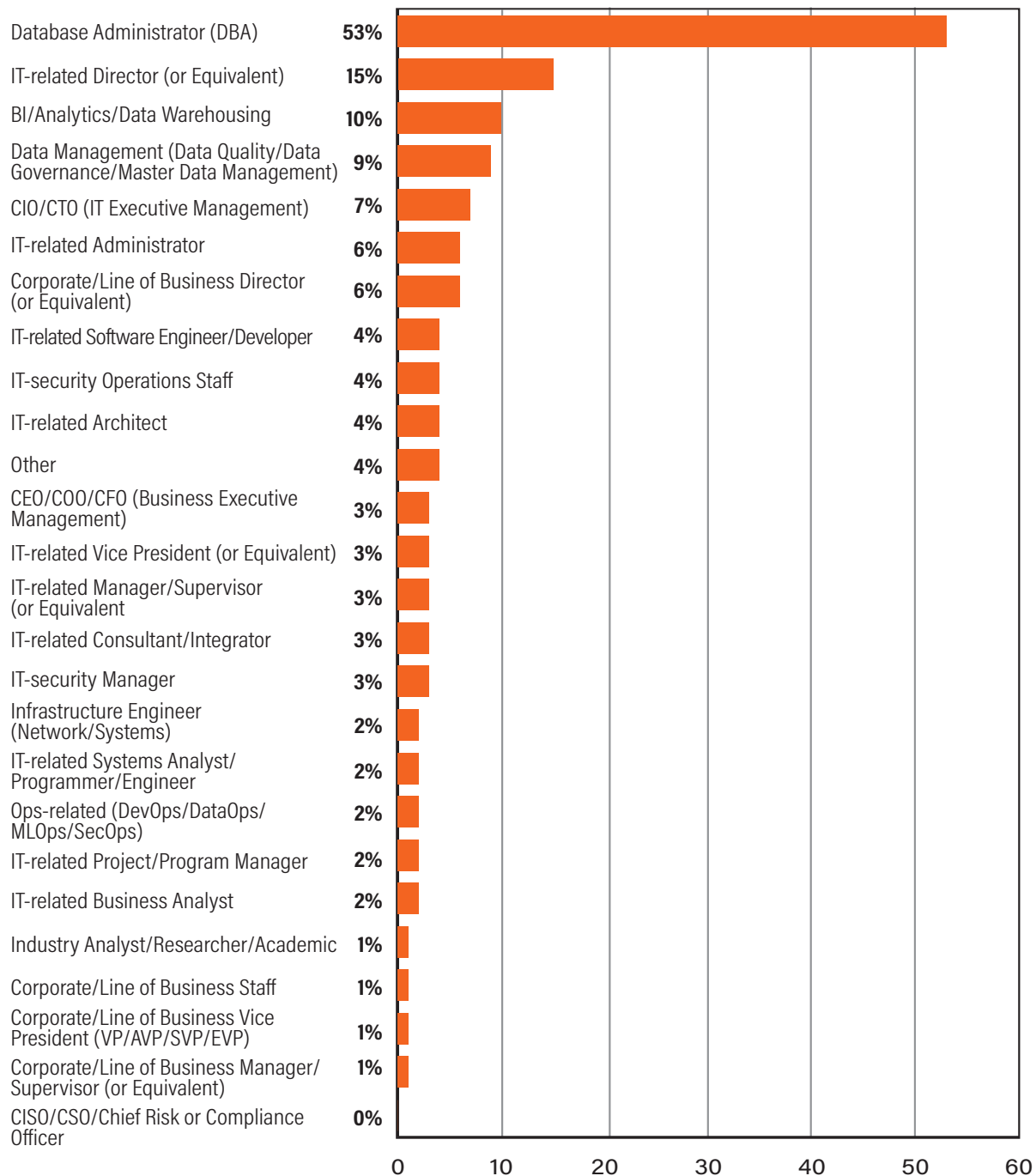


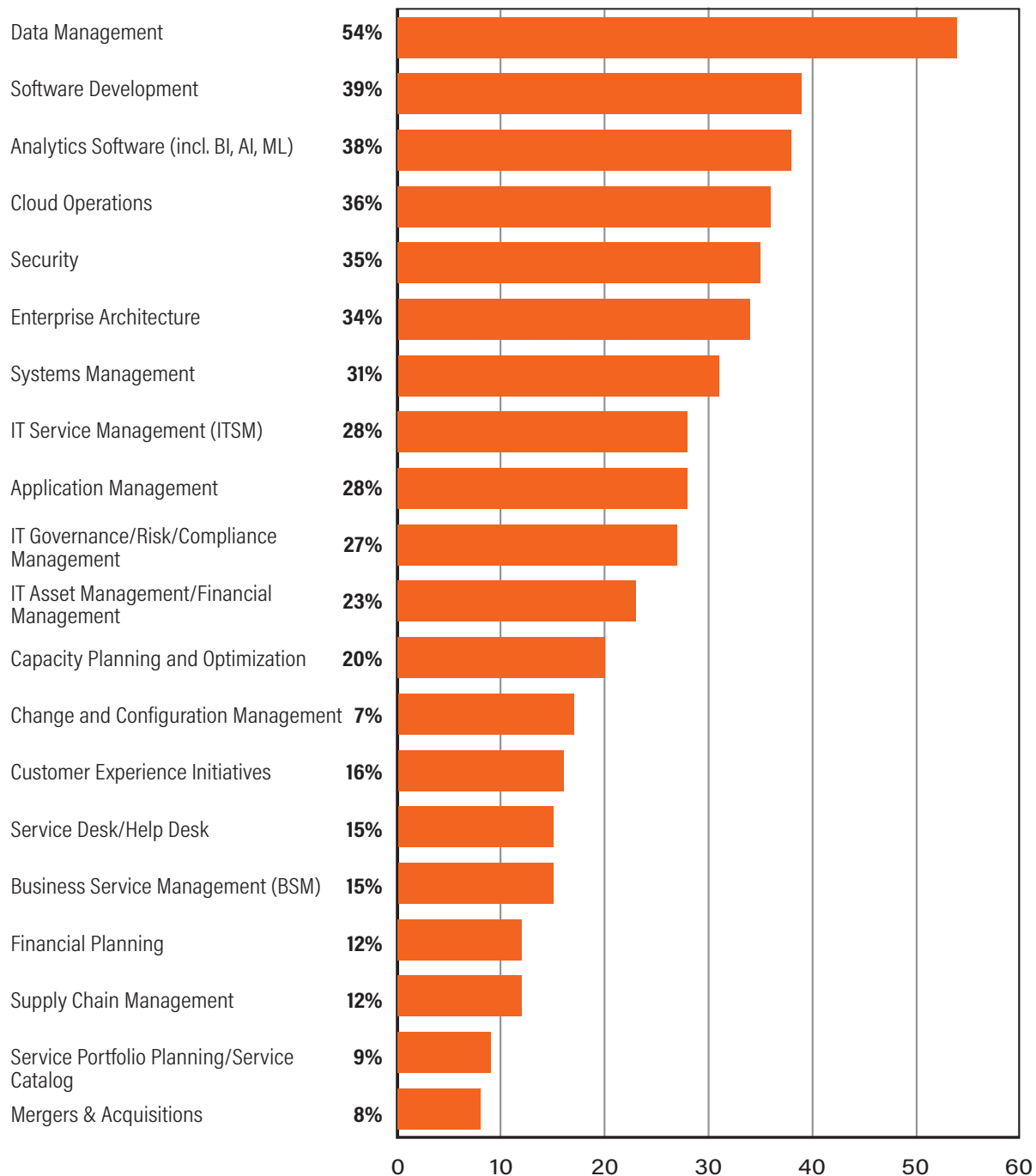
Figure 36: Respondents' Direct Involvement in or Working Knowledge of


Figure 37: Respondents' Activities Involved With

