ESG RESEARCH REPORT

The Evolution of Intelligent Data Management

From Data Backup to Data Intelligence

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ESG conducted an in-depth survey of 360 IT professionals responsible for data protection and data management technology decisions for their organization. Survey participants represented midmarket (250 to 999 employees) and enterprise-class (1,000 employees or more) organizations in North America (United States and Canada).

Based upon the data gathered as part of this project, the report illustrates:

- **Most now claim to better understand data management.** Most IT professionals now report that they understand the concept of data management, likely at least partially a consequence of increased exposure to digital transformation initiatives, which squarely place the focus on data and data-related processes overall. Among the "must-have" data management capabilities, cloud-based management and storage stand out, suggesting that modern/intelligent data management is at a minimum hybrid in nature. Since end-users will likely continue to integrate intelligent data management initiatives into their cloud strategy, providers of such solutions must be cloud-friendly.

- **In the data deluge, cloud is king.** The combination of accelerating data growth and copies of that data is creating a deluge, inundating the IT infrastructure with more complexity, cost, and cyber-risk from an expanded attack surface. This has resulted in the market for cloud services as a secondary data copy destination gaining significant traction over the last two years. Additionally, ESG expects to see technology vendors not only continue to innovate with technologies that optimize the management, cost, and placement of this existing pool of data, but also provide data reduction solutions.

- **Data is the business.** It has become obvious that data is central to all businesses in one form or another, with one in five organizations being purely data-fueled in their core business. As such, organizations should treat data as an asset that must be de-risked, protected, made compliant, and leveraged. Data-centricity should therefore drive decisions and investments, both for IT and at the business level.

- **Organizations are gaining confidence in their compliance management capabilities.** Organizations are becoming more focused on making data compliant, including for the purposes of data reuse. Data sanitization is a key step before secondary data usage, and most organizations are doing it today. ESG has observed significant increases in the levels of confidence organizations have in their ability to pass a compliance audit, which is especially pronounced among those organizations that sanitize their data.

- **Data classification is becoming more pervasive and data reuse is improving.** The vast majority of organizations are already classifying their data or will be doing so within the next 24 months. In addition to multiple storage efficiency-related uses cases, data classification helps in understanding the cyber-protection side of the complex data equation. Secondary data reuse generates broad benefits beyond just IT, including proactively generating more business intelligence or new data-based products and helping to fortify cyber-resiliency measures.

- **Intelligent data management is at the heart of digital transformation.** More than three-quarters of organizations are satisfied to some extent with their secondary data reuse strategies. It is therefore not surprising that intelligent data management has become a top five priority for two-thirds of organizations relative to other data protection and management initiatives. This prioritization is even more pronounced among those organizations that report having mature digital transformation initiatives in place.

Introduction

Research Objectives

Intelligent data management solutions and use cases are transforming the traditional data protection and storage spaces. As end-users continue on their digital transformation journeys, the need to efficiently reuse compliant data is adding data management challenges to an already complex IT infrastructure landscape. At the same time, significant business benefits can be derived from successful intelligent data management implementations.

In order to understand the benefits and challenges of IT initiatives in this space, establish the current state of deployments, identify gaps, and highlight future expectations, ESG surveyed 360 IT professionals at organizations with 250 or more employees in North America (US and Canada) personally responsible for data protection and data management technology decisions for their organization. This research aimed to understand IT professionals' grasp of and sentiment toward intelligent data management, including the identification of the most successful business and technical use cases for data reuse.

This study sought to answer the following questions:

- How well do IT professionals believe they know the concept of data management? Which data management capabilities do they find most applicable to their environment?

- What is the approximate total volume of data organizations have stored on corporate servers, storage systems, backup media, public cloud services, etc.? What is the approximate annual growth rate of these data volumes?

- Do organizations send secondary copies to public cloud infrastructure services for non-protection purposes like development/test, analytics, etc.? What benefits have organizations realized as a result of sending secondary copies to public cloud services for non-protection purposes?

- In the context of data reuse, if subjected to a regulatory compliance audit, how confident are organizations that they could satisfy the data requirements of the inquiry?

- Do organizations currently leverage any data classification tools or processes? For what reasons do organizations use or plan to implement data classification tools or processes?

- In addition to traditional backup copies made for operational recoveries, for what other business or technology purposes do organizations currently use secondary data? What business benefits have organizations realized or do they expect to realize from reusing secondary data?

- Are organizations satisfied with the amount of secondary data they use for business (i.e., non-protection) purposes, such as test/development/staging, analytics, etc.?

- How much of an investment priority are intelligent data management/data reuse strategies relative to other aspects of data protection and management over the next 18-24 months?

Survey participants represented a wide range of industries including manufacturing, financial services, retail, technology, and healthcare, among others. For more details, please see the Research Methodology and Respondent Demographics sections of this report.

Research Findings

Most Now Claim to Better Understand Data Management

As the intelligent data management market matures, organizations are aligning their technology choices with business requirements and learning how to achieve real results. In a significant change from 2019, most IT professionals now report that they understand the concept of data management (see Figure 1). ESG believes this is a consequence of increased exposure to digital transformation initiatives, which squarely place the focus on data and data-related processes overall. Likely another reason for this marked improvement, vendors have increased efforts to educate end-users and the market at large during this timeframe.

Figure 1. Most Understand What Is Meant by 'Data Management'

Which of the following statements most closely aligns with your opinion of the term data management? (Percent of respondents)

■ 2019 (N=359) ■ 2021 (N=360)
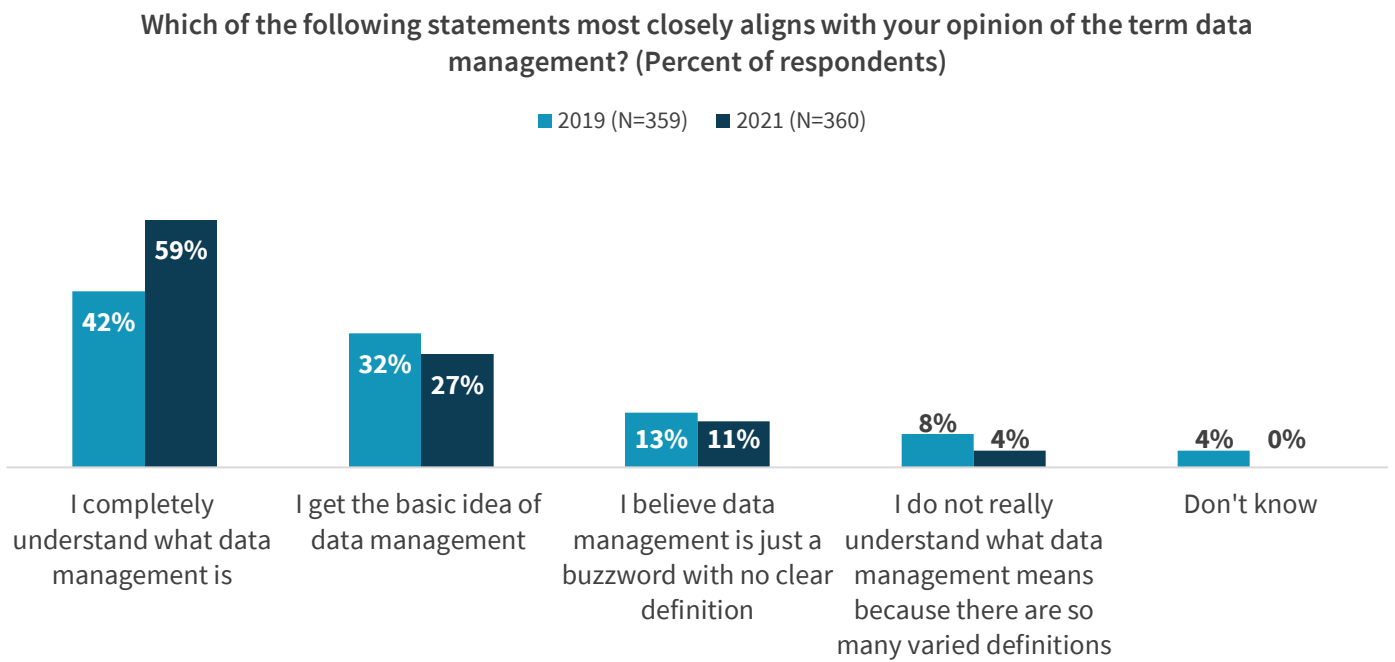
Source: ESG, a division of TechTarget, Inc.

Data management solution selection can be a complex and multidisciplinary effort across IT since many parts of the organization "touch" data during its lifecycle, including within the context of data reuse. Among the "must-have" capabilities, cloud-based management and storage decisively shine, which is not only a reflection of the broader evolution of IT toward hybrid and distributed cloud topologies, but also a suggestion that modern/intelligent data management is at a minimum hybrid in nature (see Figure 2). This means that end-users should integrate intelligent data management initiatives into their cloud strategy, and that providers of such solutions must be cloud-friendly.

Figure 2. Many Associate Their Data Management Efforts with the Cloud

Of the following data management capabilities, which do you find applicable to your environment? Which capability do you find most compelling? (Percent of respondents, N=360)

Capability	Most compelling	All applicable
Cloud-based management of cloud and on-premises data sets	14%	39%
Utilize cloud storage as part of a data management strategy	12%	39%
Monitor and enforce protection policies	9%	33%
Provide data governance/control of data for compliance purposes	9%	33%
Ability to support cyber-resilience efforts	9%	33%
Enable copies/access to data for non-data protection goals	6%	31%
Reduced infrastructure costs	9%	31%
Ensure compliance for non-protection usage	6%	30%
Automation/workflow to provide secondary use/access	6%	27%
Track number of copies, locations, and repository types	6%	27%
Integrate tactical backup and strategic BC/DR within solution architecture	5%	27%
Searchable catalog for discovery/utilization	4%	27%
Consolidation of various data protection tools into a single solution	4%	24%
Don't find any data management capabilities to be compelling	1%	1%
Don't know	1%	1%

Legend:
- ■ Most compelling data management capability
- ■ All applicable data management capabilities

Source: ESG, a division of TechTarget, Inc.

In the Data Deluge, Cloud Is King

Data growth has become a constant in modern IT environments (see Figure 3 and Figure 4). But it is not just data growth that is an issue; it is data "multiplication" (i.e., copies of production data that are used for other purposes). This combination of accelerating data growth and copies of that data is creating a deluge, inundating the IT infrastructure with more complexity, cost, and cyber-risk from an expanded attack surface.

According to Figure 5, ESG expects to see technology vendors not only continue to innovate with technologies that optimize the management, cost, and placement of this existing pool of data, but also provide data reduction solutions. While it makes sense that there should be more than one copy of data, do end-users really need to multiply their production data endlessly?

Figure 3. 7.7 PB Total Volume of Data on Average

To the best of your knowledge, what is your immediate organization's approximate total volume of data stored on corporate servers, storage systems, backup media, public cloud services, etc.? (Percent of respondents, N=360)

16%	41%	24%	20%
Less than 500 TB	500 TB to 4.999 PB	5 PB or more	Don't know
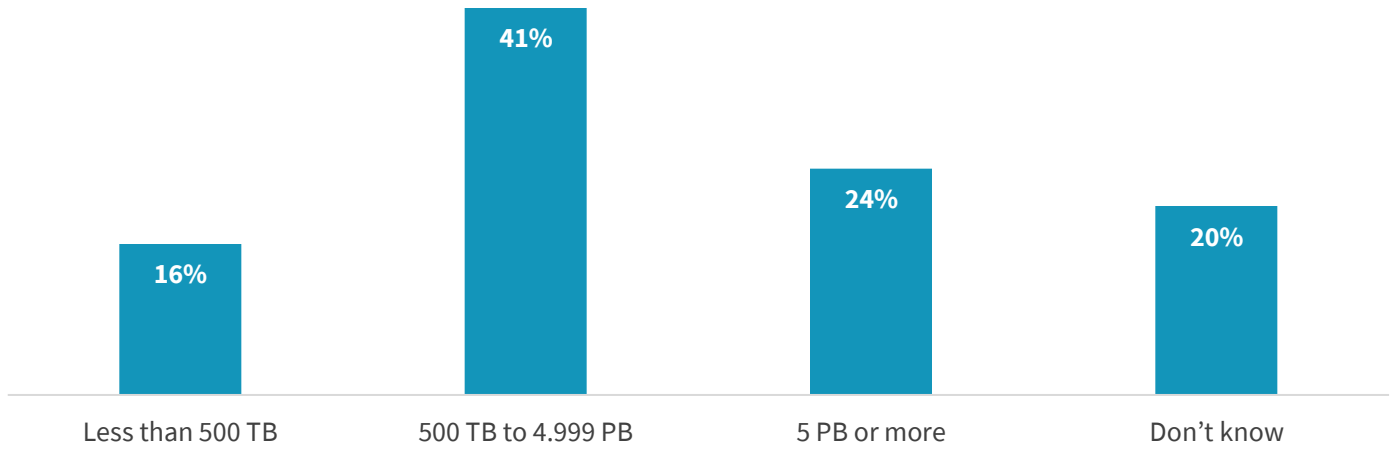
Source: ESG, a division of TechTarget, Inc.

Figure 4. 35% Overall Data Growth (Up from 27% in 2019)

At approximately what rate do you believe your organization's total volume of data is growing annually? (Percent of respondents, N=360)

39%	31%	28%
20% or less annually	21% to 50% annually	More than 50% annually
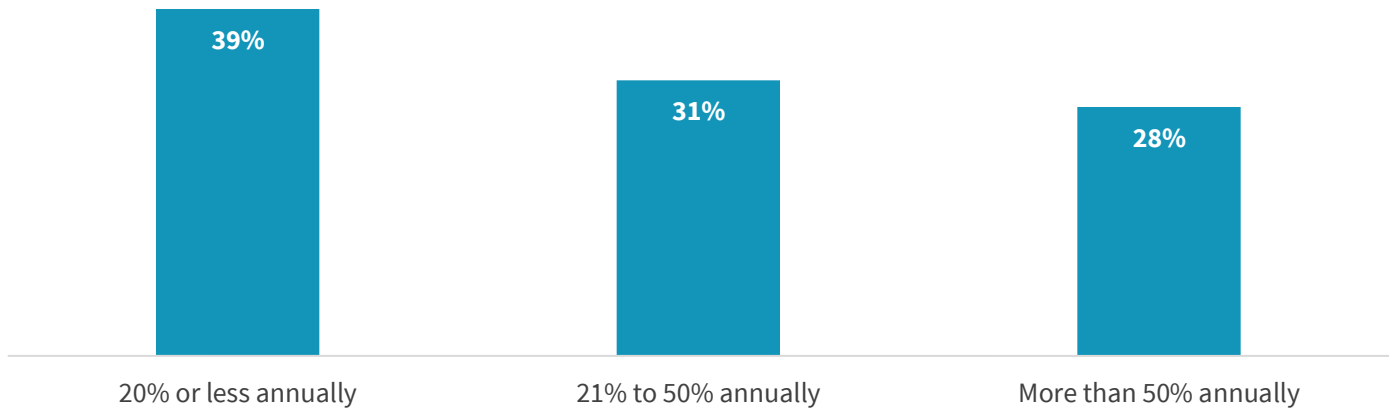
Source: ESG, a division of TechTarget, Inc.

Figure 5. 5 TB of Secondary Data Generated by 1 TB of Production on Average

For every 1 TB of production data, how many TB of secondary/protection data do you typically require for data protection purposes, including backups (including dailies, weeklies, monthlies, etc.), snapshots, replicas, archives, etc.? How many TB of secondary/protection data do you typically require for non-production/non-protection purposes, such as test/development/staging, analytics, etc.? (Percent of respondents, N=360)

■ Total amount of secondary data for data protection purposes (e.g., backups, snapshots, replicas, archives, etc.)

■ Total amount of secondary data for non-production/non-protection purposes (e.g., test/dev, analytics, etc.)

	1 TB (i.e., equal to your production data)	2 TB (i.e., double your production data)	3 TB	4 TB	5 TB	6-8 TB	9-10 TB	More than 10 TB	Don't know
Data protection	12%	14%	13%	13%	15%	11%	8%	11%	4%
Non-production/non-protection	12%	16%	16%	6%	15%	11%	11%	8%	5%

Source: ESG, a division of TechTarget, Inc.

In only two years, the market for cloud adoption as a secondary data copy destination has gained significant traction (see Figure 6). This extreme acceleration is consistent with the top solution requirements outlined earlier an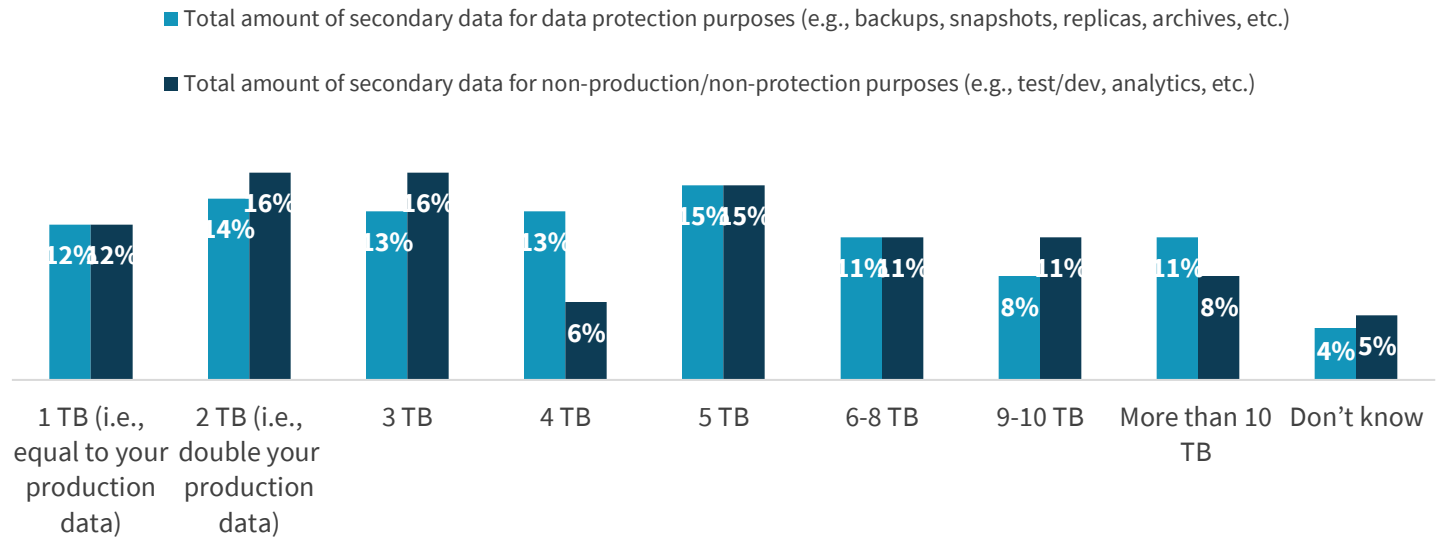d confirms that data reuse (for non-backup/protection purposes) and public cloud are intertwined. This also means that topologies and solutions that will be deployed by organizations for secondary data use will be vastly cloud-based. It is ESG's view that this dramatic shift is likely a consequence of accelerated digital transformation efforts and support for the broader trends around accelerating cloud adoption.

According to Figure 7, as organizations deploy more sophisticated data management solutions, multiple options exist. The massive and accelerated adoption of public cloud is evident, but its emergence at the top of preferred deployment methods is also to be noted. Indeed, leveraging a SaaS offering for data management is the second most popular methodology right behind cloud infrastructure. The adoption of as-a-service solutions across many IT and business functions has been accelerating and is, not surprisingly, also present in data management. The ease of use and outsourced nature of an as-a-service or managed service solution make these offerings attractive given the amount and complexity of data to manage. While cloud solutions top the list, organizations still have appetites for "traditional" hardware and software. This means that vendors in this space that want to deliver hybrid solutions should consider offering their technology with different deployment options, including some flavor of a cloud service.

Figure 6. Cloud Is Used Extensively for Data Reuse

Does your organization send secondary copies to public cloud infrastructure services for non-protection purposes (e.g., development/test, analytics, etc.)? (Percent of respondents)

■ 2019 (N=338)   ■ 2021 (N=355)

- Yes: 37% (2019), 83% (2021)
- No: 56% (2019), 17% (2021)
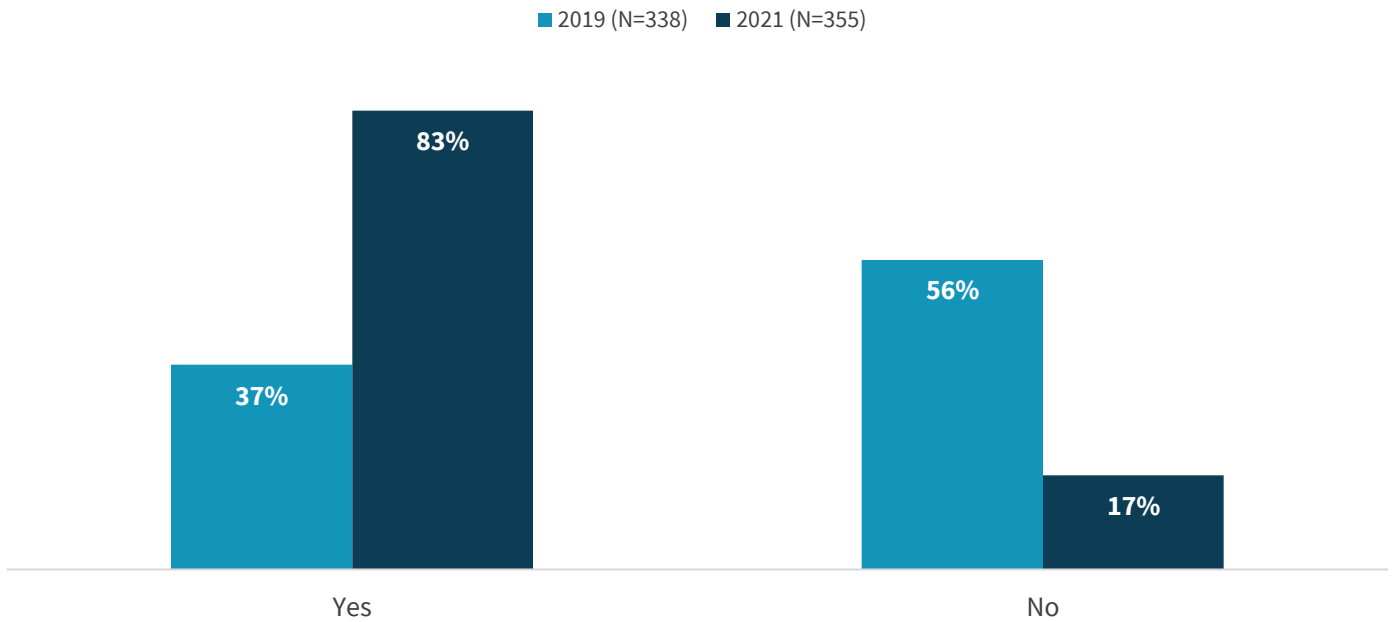
Source: ESG, a division of TechTarget, Inc.

Figure 7. Cloud Is Used Extensively for Intelligent Data Management

Which of the following methods would your organization consider using to deploy a data management solution? (Percent of respondents, N=360, multiple responses accepted)

- Cloud-based infrastructure service: 52%
- SaaS offering: 49%
- Managed service: 42%
- Hyperconverged solution: 33%
- Extension of existing backup/archive solution (software only): 31%
- Purpose-built data management solution (software only): 31%
- Turnkey virtual appliance: 20%
- Turnkey physical appliance: 19%
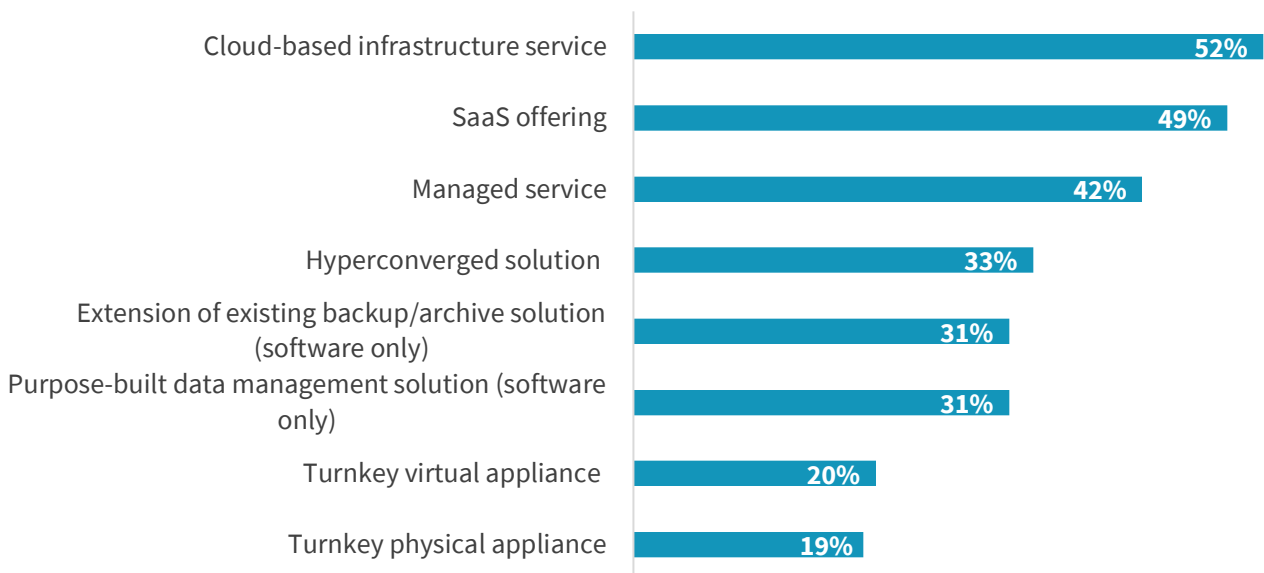
Source: ESG, a division of TechTarget, Inc.

Cloud topologies can deliver against expectations at scale. IT professionals have spoken: Leveraging cloud for intelligent data management (for example, using secondary copies for analytics) provides organizations with many compelling benefits of an operational nature. Data management must be as dynamic as the data volumes it handles, which is why availability, elasticity, and performant end-user support at scale are all atop the list of realized benefits (see Figure 8. Cloud Benefits Abound). While there may be ambivalence on security matters at times in IT, in the case of cloud-based data reuse, the general sentiment is that organizations have realized better security compared to on-premises environments. As such, ESG expects to see a continuing reallocation from on-premises deployments to cloud platforms for intelligent data management. This being said, due to varying governance and compliance mandates, not all secondary data will ever be in the cloud.

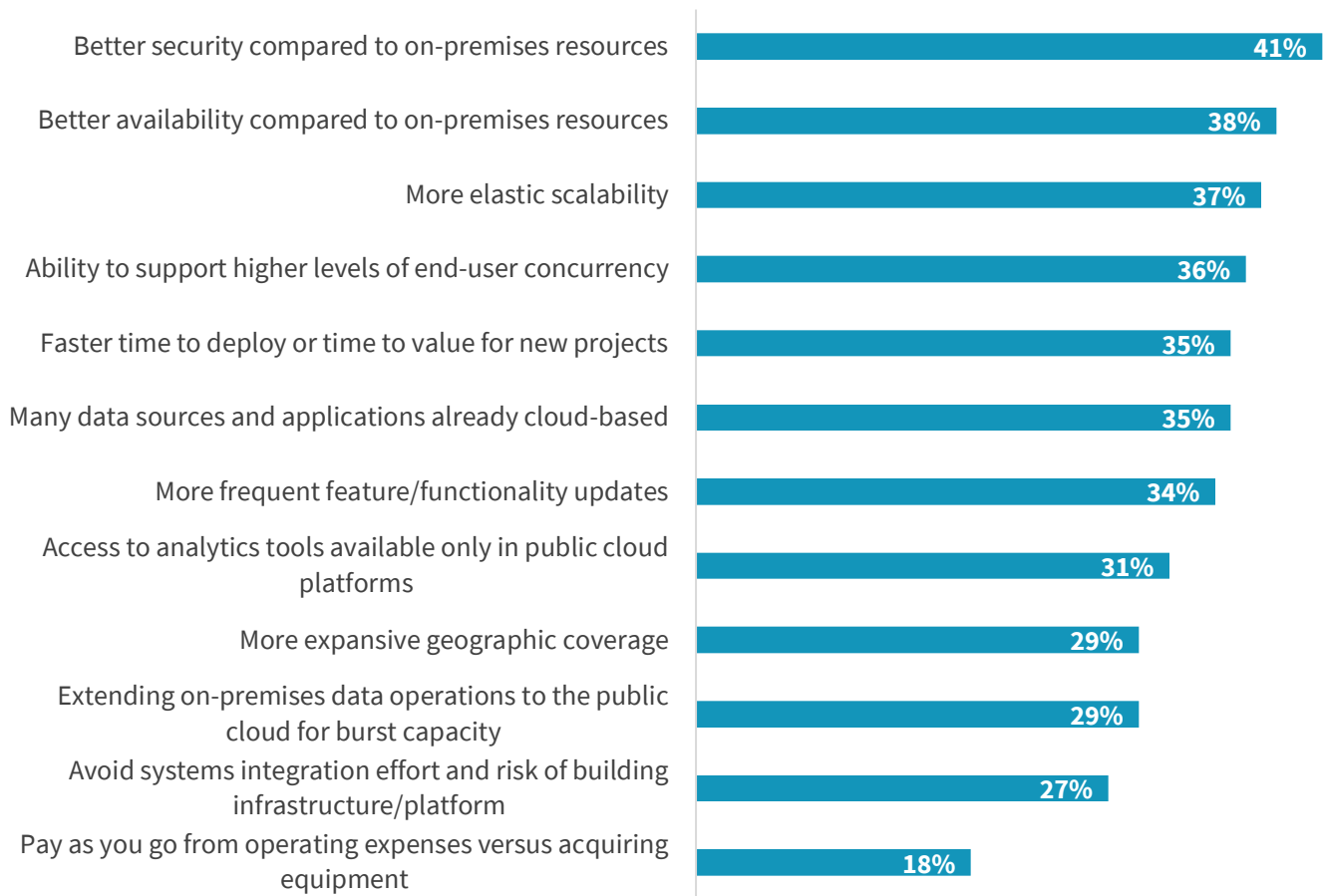**Figure 8. Cloud Benefits Abound**

What benefits has your organization realized as a result of sending secondary copies to public cloud services for non-protection purposes (e.g., test/development, analytics, etc.)? (Percent of respondents, N=295, multiple responses accepted)

Benefit	Percent
Better security compared to on-premises resources	41%
Better availability compared to on-premises resources	38%
More elastic scalability	37%
Ability to support higher levels of end-user concurrency	36%
Faster time to deploy or time to value for new projects	35%
Many data sources and applications already cloud-based	35%
More frequent feature/functionality updates	34%
Access to analytics tools available only in public cloud platforms	31%
More expansive geographic coverage	29%
Extending on-premises data operations to the public cloud for burst capacity	29%
Avoid systems integration effort and risk of building infrastructure/platform	27%
Pay as you go from operating expenses versus acquiring equipment	18%

Source: ESG, a division of TechTarget, Inc.

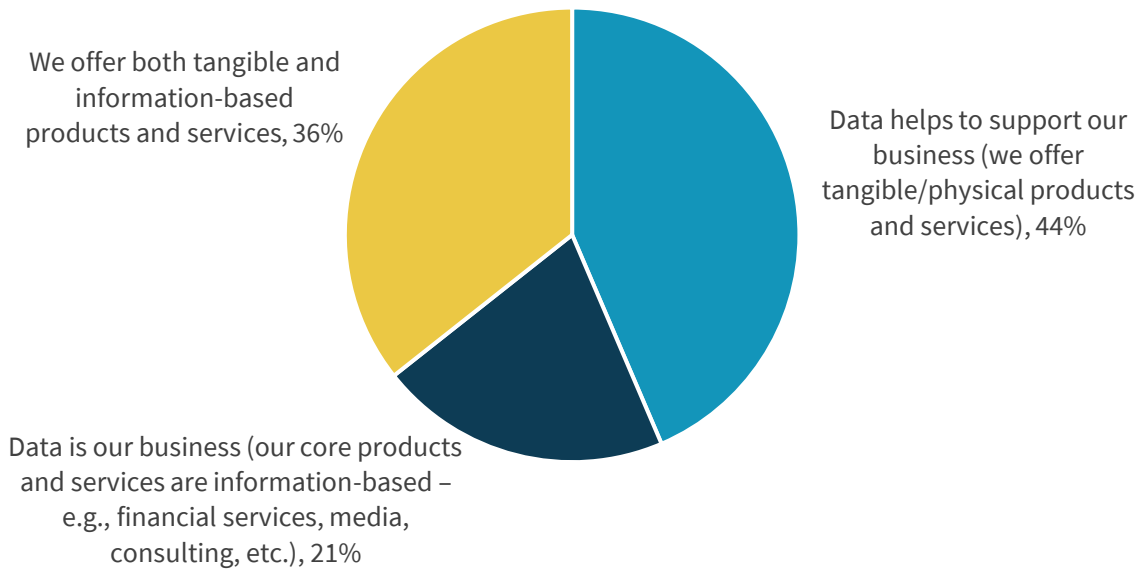## Data Is the Business

As organizations continue on their digital transformation paths, it has become obvious that data is central to all businesses in one form or another, with one in five (21%) organizations being purely data-fueled in their core business (see Figure 9). If data is the business, then organizations should treat data as an asset that must be de-risked, protected, made compliant,

and leveraged. Data-centricity should therefore drive decisions and investments, both for IT and at the business level. Data management has never been as important.

In this most recent research effort, ESG identified that the creation of new data-centric offerings is showing a significant uptick in the past two years, reinforcing the notion that digital transformation is in full swing (see Figure 10). This in turn generates more demands on the data infrastructure and highlights the need to deploy solutions that can support business growth objectives. This presents a tremendous opportunity for vendors in this market.

Figure 9. Majority of Organizations Now Offer Information-based Products or Services

Which of the following statements best describes your organization's perspective on data? (Percent of respondents, N=360)

We offer both tangible and information-based products and services, 36%

Data helps to support our business (we offer tangible/physical products and services), 44%

Data is our business (our core products and services are information-based – e.g., financial services, media, consulting, etc.), 21%

Source: ESG, a division of TechTarget, Inc.

Figure 10. New Data-centric Services Accelerating

Do you expect that your organization will develop and offer new data-centric products and services (i.e., either selling data or insights based on that data) in the next 24 months? (Percent of respondents)
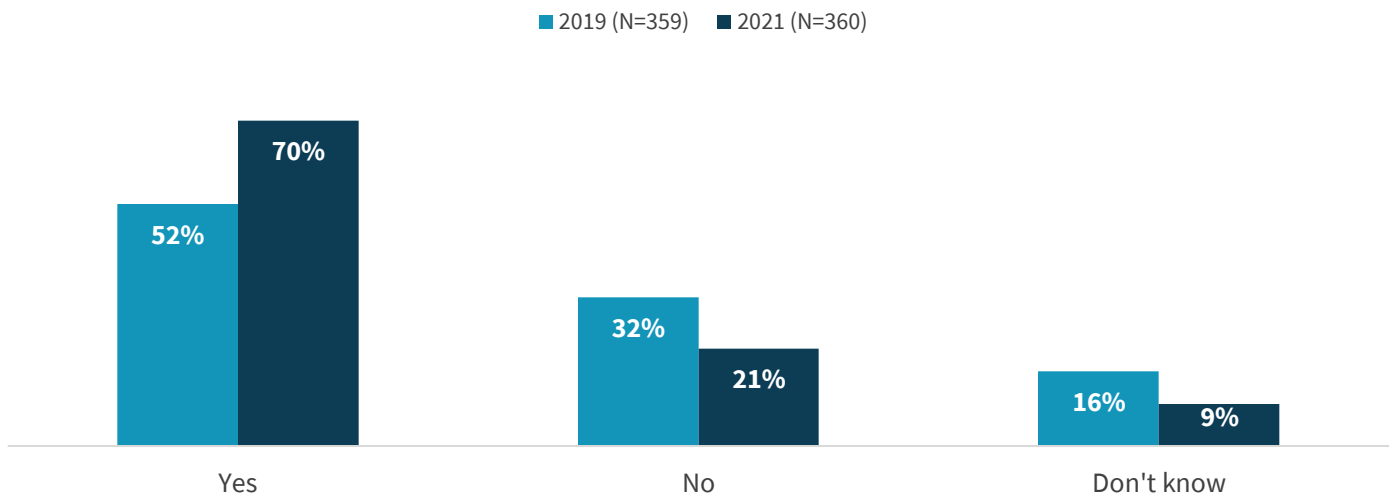
■ 2019 (N=359) ■ 2021 (N=360)

Source: ESG, a division of TechTarget, Inc.

Organizations Are Gaining Confidence in Their Compliance Management Capabilities

The ability to cleanse data for the purpose of compliance or privacy mandates is critical. Put simply, you can't reuse or leverage data that is not compliant as that could perpetuate non-compliance exposures across the organization. Data sanitization is therefore a key step before secondary data usage, and according to Figure 11, most organizations are doing it today. Given the incredible pressures recent privacy regulations are placing on public and private entities around the world, there is still more to do.

Figure 11. More Organizations Are Sanitizing Their Secondary Data Prior to Usage

When secondary copies of production data are created for non-production purposes (e.g., data mining/analytics/reporting or DevOps/testing), does your organization have the ability to scrub or sanitize the data of personally identifiable or business-confidential information prior to its secondary use? (Percent of respondents, N=360)
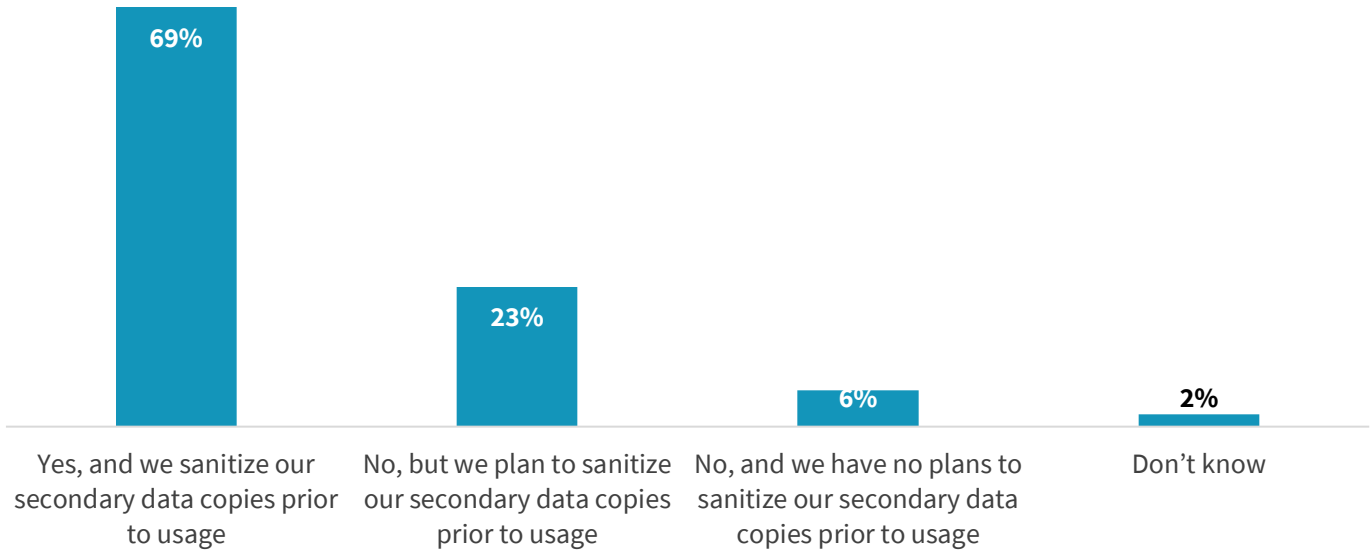
69%	Yes, and we sanitize our secondary data copies prior to usage
23%	No, but we plan to sanitize our secondary data copies prior to usage
6%	No, and we have no plans to sanitize our secondary data copies prior to usage
2%	Don't know

Source: ESG, a division of TechTarget, Inc.

Organizations are becoming more focused on making data compliant, including for the purposes of data reuse. According to Figure 12, in only two years, ESG has observed significant increases in the levels of confidence organizations have in their ability to pass a compliance audit, which can often result in significant fines should issues be uncovered. Since data sanitization yields direct benefits in terms of the ability to satisfy dreaded compliance audits, it follows that these confidence levels are even more pronounced among those organizations that actively sanitize their secondary data (see Figure 13). This means less risk for the organization and reduced financial exposures to fines and other consequences of non-compliance.

Figure 12. Markedly More Confidence in Regulatory Compliance Aptitude…

In the context of data reuse, if subjected to a regulatory compliance audit (e.g., GDPR) tomorrow, how confident are you that your organization would be able to satisfy the data requirements of the inquiry? (Percent of respondents)

■ 2019 (N=359) ■ 2021 (N=282)

	Extremely confident	Confident	Not that confident	Not at all confident
2019	17%	65%	13%	2%
2021	48%	44%	7%	1%
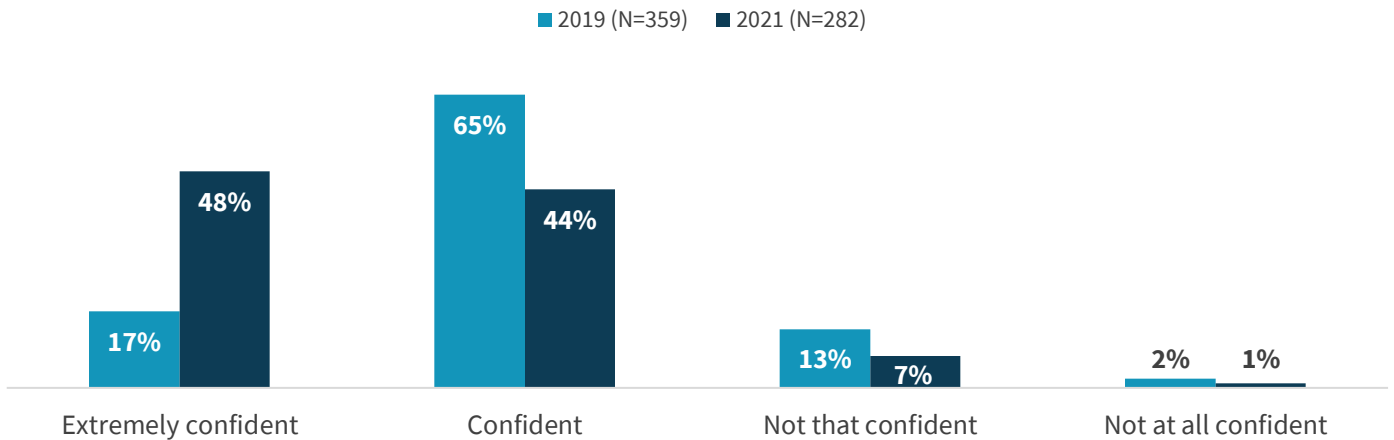
Source: ESG, a division of TechTarget, Inc.

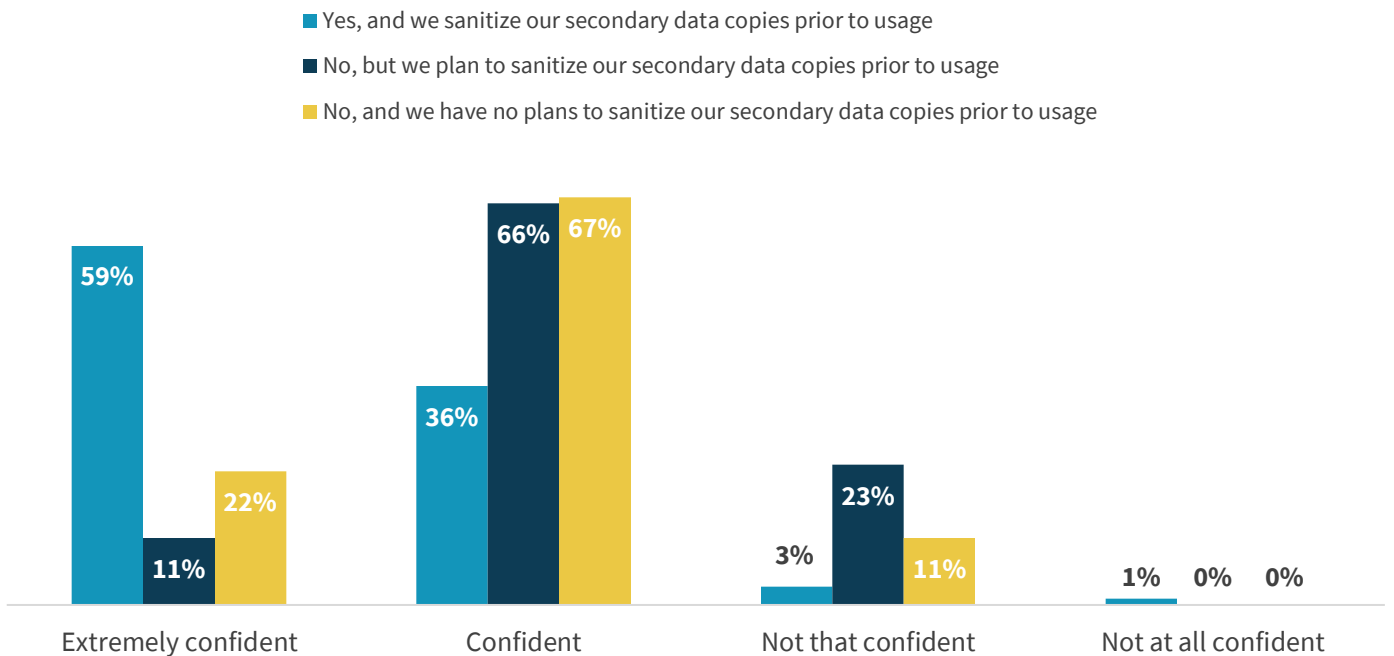**Figure 13. … Especially among Data Sanitizers**

Level of confidence in the ability to satisfy the data requirements of a regulatory compliance audit by current data sanitization position. (Percent of respondents, N=282)

■ Yes, and we sanitize our secondary data copies prior to usage
■ No, but we plan to sanitize our secondary data copies prior to usage
■ No, and we have no plans to sanitize our secondary data copies prior to usage

	Extremely confident	Confident	Not that confident	Not at all confident
Yes, and we sanitize	59%	36%	3%	1%
No, but we plan	11%	66%	23%	0%
No, and we have no plans	22%	67%	11%	0%

Source: ESG, a division of TechTarget, Inc.

Data Classification Is Becoming More Pervasive and Data Reuse Is Improving

Understanding data is key not only for compliance risk mitigation, but also to identify what should be done about it. That's why data classification is becoming a best practice among more organizations. If businesses understand the context of the data and its content, then it becomes manageable, able to be sanitized, reusable, or a candidate for deletion to offset costs

and improve efficiencies. Indeed, as seen in Figure 14, ESG expects that the vast majority of organizations will be classifying data within 24 months. Furthermore, as is often the case in technology conversations, the devil is in the details and not every classification effort may be equally well executed.

Figure 14. A Growing Interest in Data Classification

**Does your organization currently leverage any data classification tools or processes?
(Percent of respondents, N=360)**
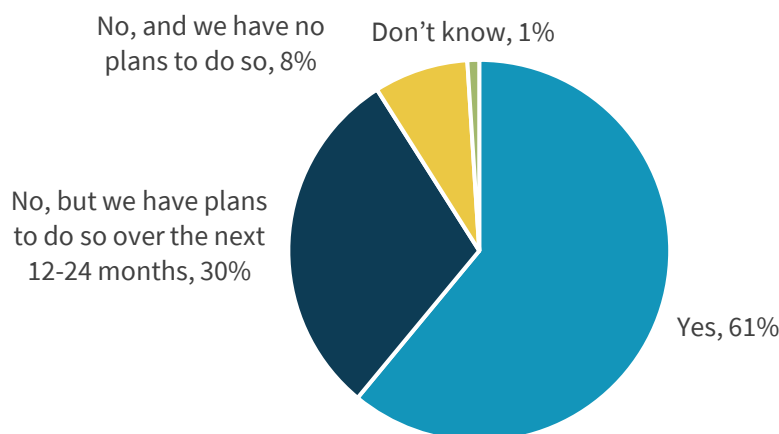
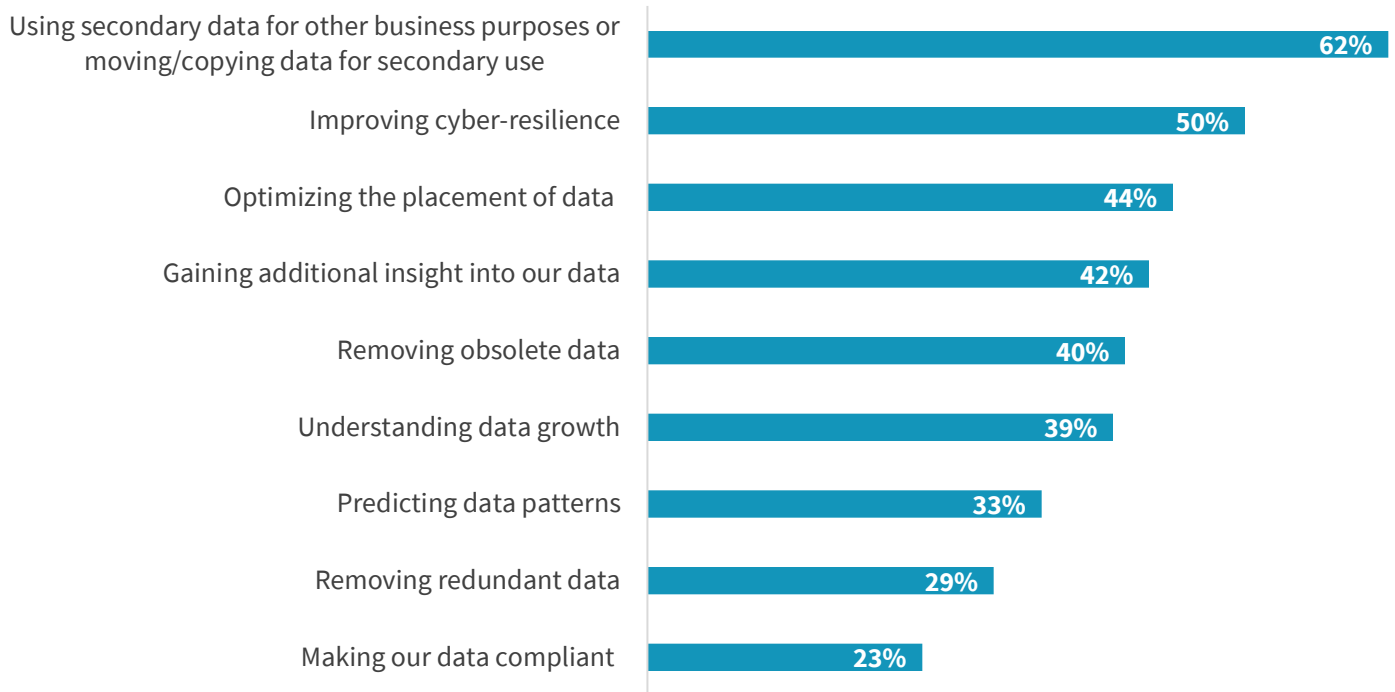*Source: ESG, a division of TechTarget, Inc.*

Data classification opens up many opportunities to add value to IT and the business at large, with a wide range of options. It can help with basic storage optimization, it can be a tool for cyber-resiliency, and it is the fundamental function to get to data reuse and intelligent data management. A common theme that keeps percolating in the news and in ESG's research is cyber-resilience. Data classification also helps in understanding the cyber-protection side of the complex data equation.

Additionally, Figure 15 shows that there are multiple storage efficiency-related uses cases, denoting the tremendous pressure IT is under to manage the "data deluge," while data reuse is the most sought-after use case that data classification can enable. This duality of "meta" objectives is key to understanding the complexity of truly enabling intelligent data management: Data is needed, but there is too much of it, and it must be managed and understood.

Data reuse is evolving with a notable emphasis on cyber-resilience (see Figure 16). The variety of use cases for data reuse is notable because it helps in understanding how complex it can be to deploy intelligent data management across an enterprise—supporting DevOps is vastly different from supporting the security operations or analytics teams (let alone the BC/DR team). Many different personas, as well as different technical and business objectives, can easily lead to competing priorities within IT. It is also challenging for vendors that seek to supply intelligent data management solutions: They have to deal with different and sometimes competing buyer personas, while trying to be a unifier across data reuse initiatives. ESG expects that this dynamic is in its infancy and will keep maturing in the next few years with the potential to generate an evolution of ecosystem and channel partnerships to cover a wider spectrum of solutions.

Figure 15. The Wide Range of Data Classification Use Cases

For which of the following reasons does your organization use or plan to implement data classification tools or processes? (Percent of respondents, N=325, multiple responses accepted)

Using secondary data for other business purposes or moving/copying data for secondary use	62%
Improving cyber-resilience	50%
Optimizing the placement of data	44%
Gaining additional insight into our data	42%
Removing obsolete data	40%
Understanding data growth	39%
Predicting data patterns	33%
Removing redundant data	29%
Making our data compliant	23%

Source: ESG, a division of TechTarget, Inc.

Figure 16. Data Reuse Increasingly Dominated by Preparing for Cyber Threats

In addition to traditional backup copies made for operational recoveries, for which of the following other business or technology purposes, if any, does your organization currently use secondary data? (Percent of respondents, multiple responses accepted)

	2021 (N=360)	2019 (N=359)
Cybersecurity testing/sandboxing	53%	42%
Data copies for use by application developers	51%	41%
Data compliance testing and reporting	45%	39%
Preserved copies or versions for long-term retention or compliance	41%	43%
Data mining of offline copies	35%	32%
Proactive patch testing	31%	26%
BC/DR testing	29%	26%
Replicas for data survivability or resiliency	27%	25%
eDiscovery	24%	16%
None of the above	2%	3%

Source: ESG, a division of TechTarget, Inc.

Secondary data reuse generates broad benefits that are not just for IT. While it may not be surprising that improved dat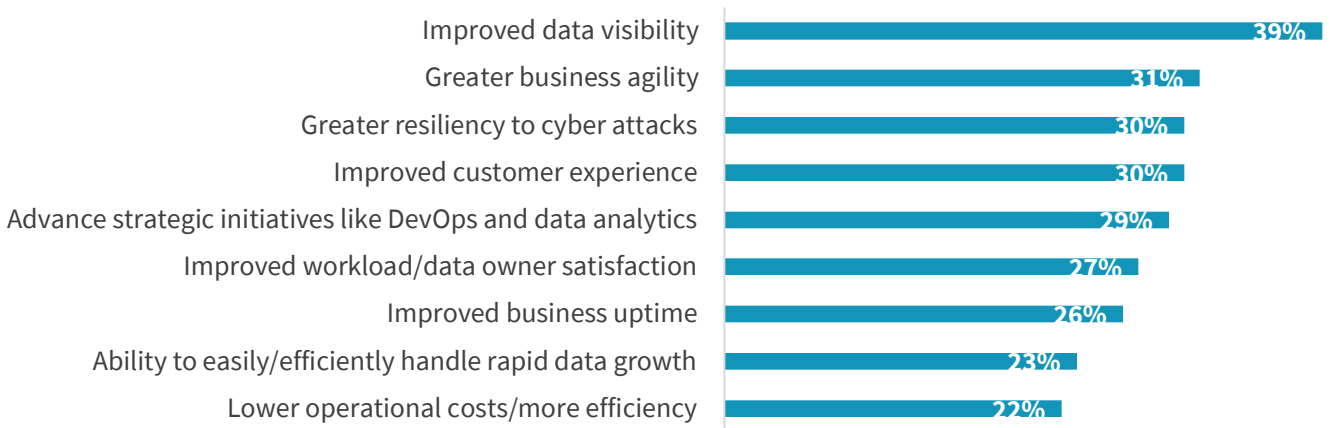a visibility is a top benefit, the strategic nature of the top five benefits must be highlighted (see Figure 17). In the context of heightened global competition and digital transformation efforts, delivering more agility to the business and improving customer experience is fundamental. It's also worth noting the impact of cyber criminals, which have generated a defensive posture for many organizations. Every day, the news reminds us of this existential data risk. Secondary data reuse can be used *offensively* to proactively generate more business intelligence or new data-based products, or *defensively* for advanced cyber-resiliency use cases.

Figure 17. Significant Improvement in Secondary Data Reuse Generates Broad Business Benefits

What business benefits has your organization realized or does it expect to realize from reusing its secondary data? (Percent of respondents, N=360, three responses accepted)
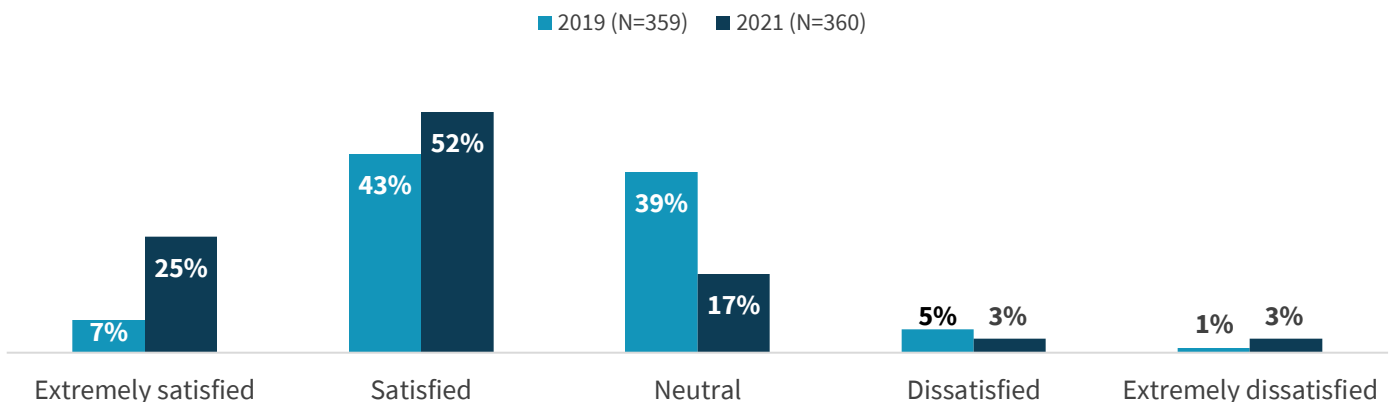
Benefit	Percent
Improved data visibility	39%
Greater business agility	31%
Greater resiliency to cyber attacks	30%
Improved customer experience	30%
Advance strategic initiatives like DevOps and data analytics	29%
Improved workload/data owner satisfaction	27%
Improved business uptime	26%
Ability to easily/efficiently handle rapid data growth	23%
Lower operational costs/more efficiency	22%

Source: ESG, a division of TechTarget, Inc.

Intelligent Data Management Is at the Heart of Digital Transformation

As shown in Figure 18, the intelligent data management category is showing signs of becoming more mature as a market, with more than three-quarters (77%) of respondents indicating their organization is satisfied to some extent with its secondary data reuse. Notably, the number of organizations that are *extremely satisfied* has nearly quadrupled since 2019.

Figure 18. Level of Satisfaction with Usage of Secondary Data for Business Purposes

Is your organization satisfied with the amount of secondary data it uses for business (i.e., non-protection) purposes, such as test/development/staging, analytics, etc.? (Percent of respondents)

■ 2019 (N=359) ■ 2021 (N=360)

	Extremely satisfied	Satisfied	Neutral	Dissatisfied	Extremely dissatisfied
2019	7%	43%	39%	5%	1%
2021	25%	52%	17%	3%	3%

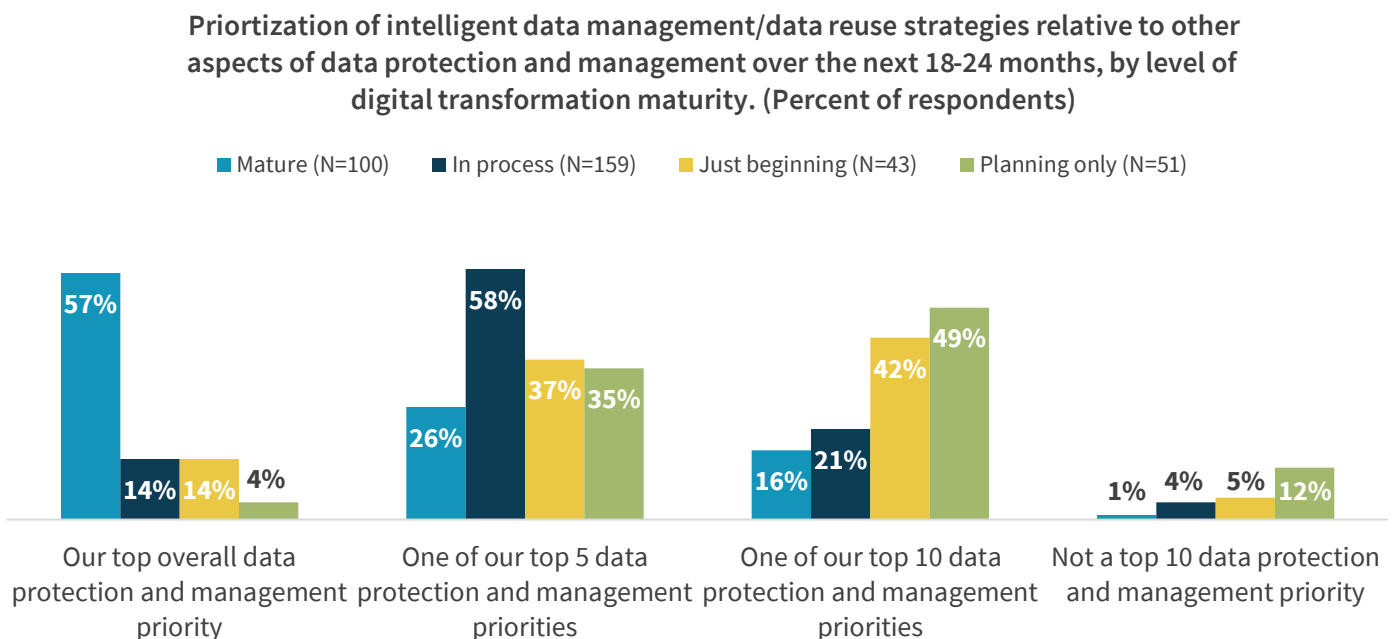*Source: ESG, a division of TechTarget, Inc.*

Based on this and its evolution from merely a data asset optimization solution to one that's capable of managing risk in terms of compliance and cyber-resilience, it follows that over that same time period, intelligent data management has become a top five priority for two-thirds of organizations relative to other data protection and management initiatives (see Figure 19). According to Figure 20, this prioritization is even more pronounced among those organizations that report having mature digital transformation initiatives in place. This confirms the tremendous opportunity end-users are seizing to transform their business, often accompanied by service providers and key vendors that are adding intelligent data management capabilities to their solutions. This acceleration is real and consistent with ESG's predicted trajectory.

Figure 19. Intelligent Data Management Is a Top Priority…

How much of an investment priority is your organization's intelligent data management/data reuse strategy relative to other aspects of data protection and management over the next 18-24 months? (Percent of respondents)

■ 2019 (N=359) ■ 2021 (N=360)

	Our top overall data protection and management priority	One of our top 5 data protection and management priorities	One of our top 10 data protection and management priorities	Not a top 10 data protection and management priority	Don't know
2019	6%	29%	38%	18%	9%
2021	24%	43%	26%	5%	2%

Source: ESG, a division of TechTarget, Inc.

Figure 20. …Especially among More Digitally Mature Organizations

Priortization of intelligent data management/data reuse strategies relative to other aspects of data protection and management over the next 18-24 months, by level of digital transformation maturity. (Percent of respondents)

■ Mature (N=100) ■ In process (N=159) ■ Just beginning (N=43) ■ Planning only (N=51)

	Our top overall data protection and management priority	One of our top 5 data protection and management priorities	One of our top 10 data protection and management priorities	Not a top 10 data protection and management priority
Mature	57%	26%	16%	1%
In process	14%	58%	21%	4%
Just beginning	14%	37%	42%	5%
Planning only	4%	35%	49%	12%

Source: ESG, a division of TechTarget, Inc.

Conclusion

The past two years have fundamentally changed our society and its relationship with technology. They have accelerated the digital transformation of most private and public entities, resulting in a focus on data—protecting it better, making it more compliant, and reusing it to generate more value and business opportunities.

These trends combined and accelerated against a backdrop of seemingly unstoppable data growth to get us across the chasm of intelligent data management. But there is still much work to do on both the vendor side and the end-user side.

This data deluge does not help, yet it is a motivation to improve IT infrastructure, enable better processes for data classification and sanitization, and leverage the power of data in support of the business.

The adage of "data is the business" could not be more critical for IT leaders who need to adapt their infrastructure to support an accelerated business transformation. Looking ahead, ESG sees intelligent data management as the next stage of data protection, with a strong "flavor" of cyber-resilience.

Time is of the essence. The market is shifting rapidly based on ESG's historical data points, which means that some organizations will be left behind. To support business transformation in a data-centric fashion, IT professionals should:

- **Identify and inventory** *all* **data sources, including cloud-based data.** Existing tools and new tools are available to do so. This might sound like a Herculean effort, and it probably is if the organization is starting from scratch. However, it is the most fundamental step because you can't manage something you can't measure or don't even know about.

- **Start or expand data sanitization and classification efforts, even if on a small scale.** Focusing on mission-critical data assets to ensure compliance and safe reuse is where to start.

- **Accept that the job is changing.** IT leaders are now data asset guardians, providers, and cyber-threat targets. IT processes and personnel will need to adapt to new workflows and business demands. The tools IT organizations use will matter greatly against a backdrop of severe IT skills shortages. Look for solutions that can demonstrably improve productivity and leverage technologies that safely automate data management tasks.

- **Understand that vendors and service providers can help.** While some existing solutions may fall short in some areas, vendors in the space are actively investing in their solutions by adding capabilities, acquiring technology, or even re-architecting their platform. Taking a long-term view of their approach may help determine the best fit.

Research Methodology

To gather data for this report, ESG conducted a comprehensive online survey of IT professionals from private- and public-sector midmarket (250 to 999 employees) and enterprise (1,000 or more employees) organizations in North America (United States and Canada) between August 3, 2021 and August 14, 2021. To qualify for this survey, respondents were required to be IT professionals personally responsible for data protection and data management technology decisions for their organization. All respondents were provided an incentive to complete the survey in the form of cash awards and/or cash equivalents.

After filtering out unqualified respondents, removing duplicate responses, and screening the remaining completed responses (on a number of criteria) for data integrity, we were left with a final total sample of 360 IT professionals.

Please see the *Respondent Demographics* section of this report for more information on these respondents.
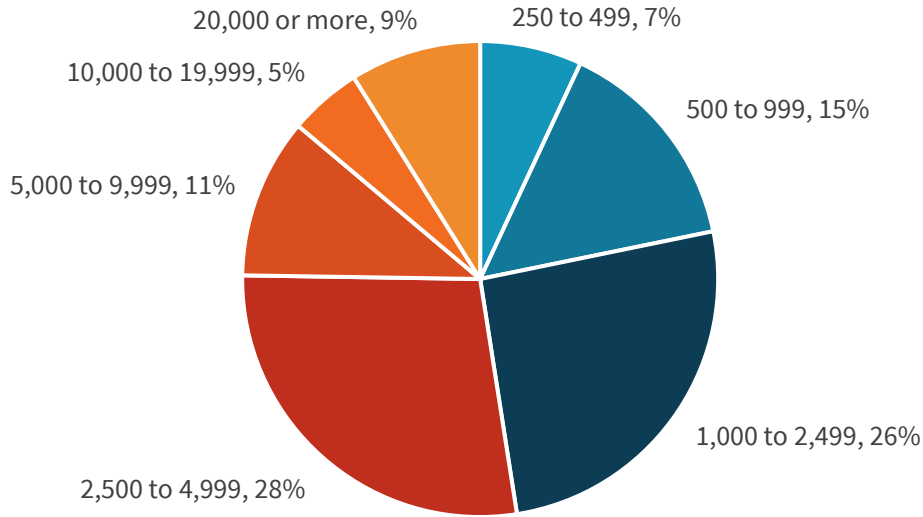
Note: Totals in figures and tables throughout this report may not add up to 100% due to rounding.

Respondent Demographics

The data presented in this report is based on a survey of 360 qualified respondents. Figure 21 through Figure 24 detail the demographics of the respondent base at an organizational level.

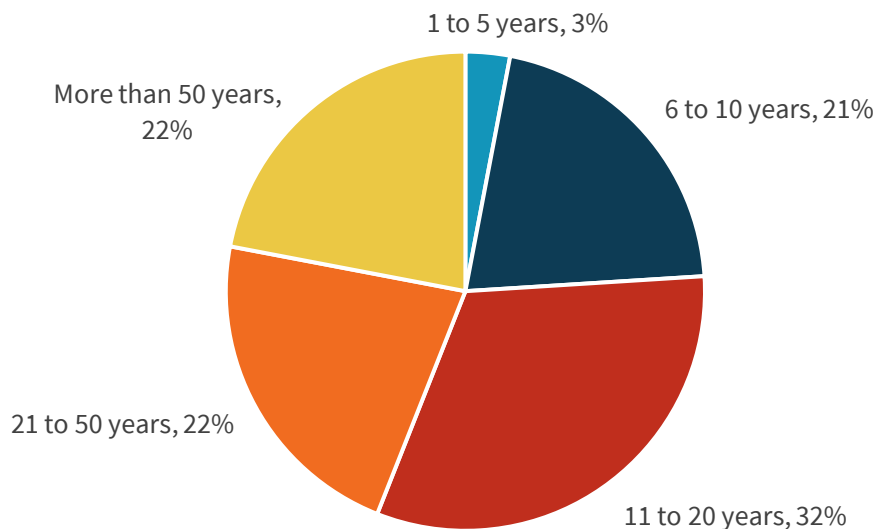### Figure 21. Respondents by Number of Employees

How many total employees does your organization have worldwide? (Percent of respondents, N=360)

- 20,000 or more, 9%
- 10,000 to 19,999, 5%
- 5,000 to 9,999, 11%
- 250 to 499, 7%
- 500 to 999, 15%
- 1,000 to 2,499, 26%
- 2,500 to 4,999, 28%

Source: ESG, a division of TechTarget, Inc.

Figure 22. Respondents by Age of Organization

For approximately how long has your current employer been in existence? (Percent of respondents, N=360)

- 1 to 5 years, 3%
- More than 50 years, 22%
- 21 to 50 years, 22%
- 6 to 10 years, 21%
- 11 to 20 years, 32%

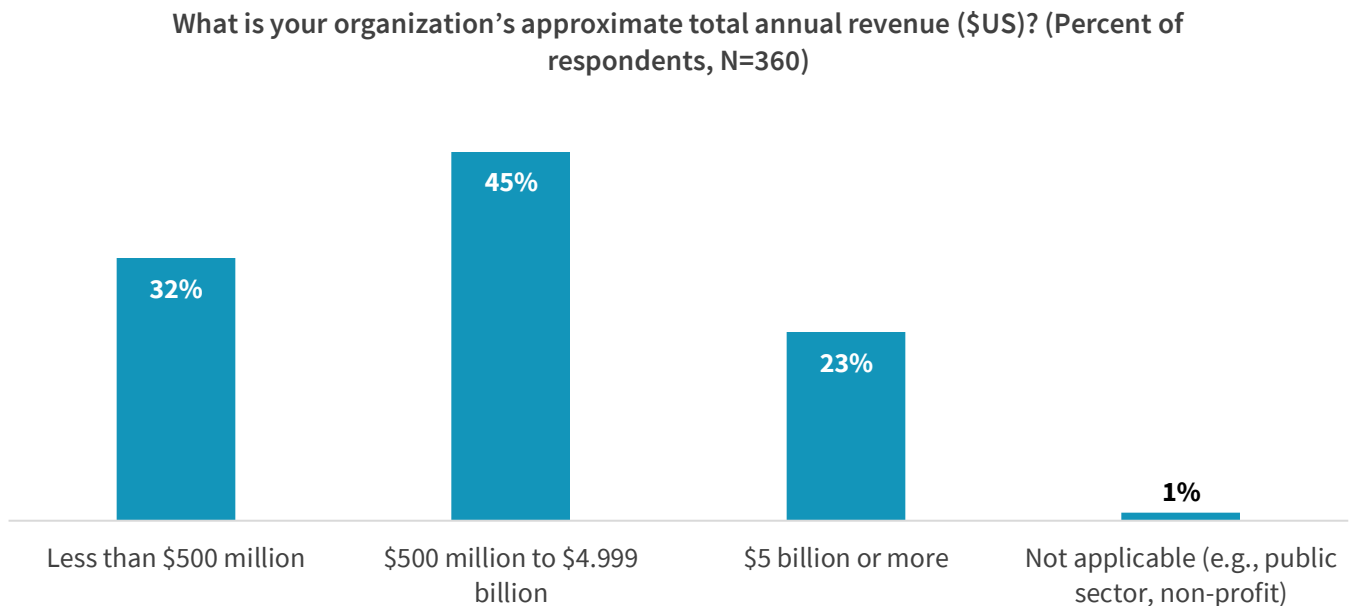*Source: ESG, a division of TechTarget, Inc.*

Respondents were asked to identify their organization's primary industry. In total, ESG received completed, qualified responses from individuals in 22 distinct vertical industries, plus an "Other" category. Respondents were then grouped into the broader categories show in Figure 23.

Figure 23. Respondents by Industry

What is your organization's primary industry? (Percent of respondents, N=360)

Industry	Percent
Manufacturing	26%
Financial	17%
Retail/wholesale	14%
Technology	10%
Healthcare	8%
Construction/ engineering	8%
Business services	3%
Communications & media	2%
Government	2%
Other	11%
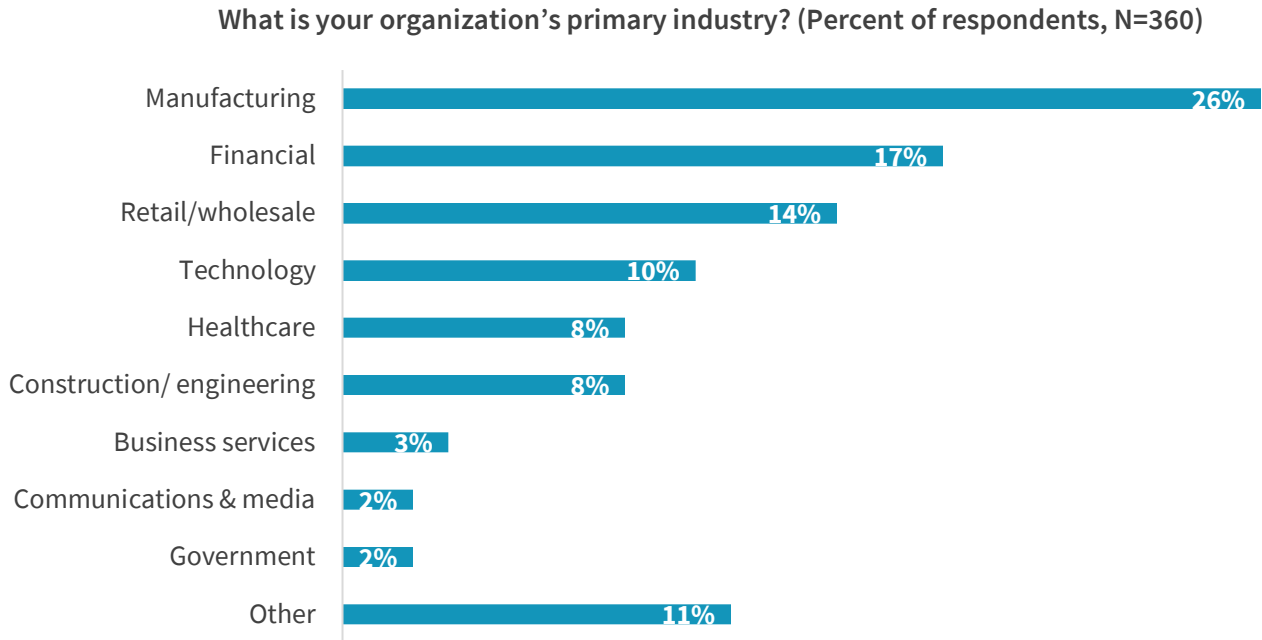
Source: ESG, a division of TechTarget, Inc.

Figure 24. Respondents by Annual Revenue

What is your organization's approximate total annual revenue ($US)? (Percent of respondents, N=360)

Revenue	Percent
Less than $500 million	32%
$500 million to $4.999 billion	45%
$5 billion or more	23%
Not applicable (e.g., public sector, non-profit)	1%

Source: ESG, a division of TechTarget, Inc.

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