COMPUTER ECONOMICS™

IT Spending & Staffing Benchmarks

CHAPTER 1

Executive Summary

2025/2026

AVASANT

IT Spending and Staffing Benchmarks 2024/2025

Since 1979, business leaders have been relying on Computer Economics publications for metrics related to the strategic and financial management of their business and IT operations. Our benchmarks are used by commercial and public sector organizations, accounting and consulting firms, as well as technology product and service providers around the world. Reports are available to Avasant subscribers or can be purchased from our website.

Our *IT Spending and Staffing Benchmarks* study, published annually since 1990, provides metrics for benchmarking IT spending. Other annual studies include *Technology Trends*, *IT Outsourcing Statistics*, *IT Management Best Practices*, *IT Staffing Ratios*, and other special reports. In addition, we publish management advisories throughout the year. For further information on our custom benchmarking services, subscription plans, and other services, please visit the Avasant website.

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CHAPTER 1:
Executive Summary

Introduction

Avasant's Computer Economics *IT Spending and Staffing Benchmarks* study, now in its 36th year of publication, provides key metrics to assist organizations in the financial and strategic management of information technology. The information presented in this 53-chapter study also helps consulting firms, as well as IT product and service providers, better understand current trends in end-user organization IT spending and staffing.

Each year, we conduct an in-depth survey of IT organizations worldwide to gather detailed data concerning their IT spending and staffing. All companies in this study are either based in the US or Canada, or they are multinational companies with IT operations in the US. We also conduct a separate study that focuses on European companies. The respondents include executives in both public and private sectors, and many of the companies have global operations. By repeating this survey each year, Avasant's Computer Economics is in a unique position to identify long-term trends and produce reliable and consistent benchmarks.

The study is based on a survey of over 300 IT organizations conducted in the first half of 2025. It provides composite statistics of IT spending and staffing data, a segmentation of the same statistics by organization size, and benchmarks for organizations in 47 sectors and subsectors. This chapter describes the study's content, design, and methodology.

Major Findings

Stop us if you think you have heard this one before. But in the 2025–2026 Avasant Research Computer Economics *IT Spending and Staffing Benchmarks* study, we are reporting that IT spending is increasing by 3.0% at the median. This is the same percentage we reported last year. In fact, it is the same percentage we have reported four out of the last six years. And for seven of the last nine years, IT spending has increased at the median by between 2.8% and 3.1%. The only two years that deviate from this pattern are the high inflation years of 2022 and 2023 where we saw budget increases of 4% and 5%, respectively.

Similarly, 69% of companies are increasing budgets compared to 70% last year. IT spending as a percentage of revenue is essentially unchanged, moving from 2.8% at the median to 2.9%,

but the change is essentially just because of rounding. Only about 18% of CIOs are being asked to prioritize reducing spending versus increasing service compared to 20% last year. About 59% of CIOs report that their budget is adequate this year compared to 56% last year. Most of the key indicators that we look at are essentially unchanged from last year and many years before that.

There is a pattern here that is outlasting major global macroeconomic realities. This pattern pre-dates the COVID-19 pandemic, the major conflicts in Ukraine and around the world, and extends through tariff threats and global trade wars, the explosive growth of generative AI, and countless other changes. For about a decade, companies have increased their IT spending by about 3.0% every year regardless of the state of the economy or the political atmosphere. And for the most part, CIOs have reported in those same time periods that they are "OK" with that budget and that it was roughly adequate to suit their needs.

If you go back before the last decade, you would see much more volatile budget changes that were much more reactionary to global economics shifts. The years immediately after the 2008 recession saw little to no increases, and once they started, they were small and tentative. When we first started seeing 3.0% growth in the early-2010s, we reported it with glee and a sign of economic growth. It really was not until about a decade ago that this consistent, one might even say unremarkable, pattern of growth became the norm.

Why are we now in the middle of this decade-long pattern? In previous years, we have argued that it was due to the growing perception of IT as a strategic resource, especially during the COVID-19 pandemic. If IT is strategic, cutting the budget makes no sense. In some years, we surmised that despite reports of impending recessions (that never came), budgets were being increased because not only was IT strategic, but IT was seen as the way to grow through the recession. IT was no longer a cost-center, it was a top-line growth play. We also speculated that 3.0% (just slightly above the rate of inflation in most years) was a sign of zero-cost transformation. CIOs were investing in cost-reduction technologies (AI, automation, cloud, etc.), and then simply re-investing that cost-savings back into more cost savings.

All of those reasons are probably part of the answer, particularly around transformation. But one other thing might be missing from this equation is perspective. For years we have looked at budget increases, IT spending as a percentage of revenue, head count changes, and other key indicators as essential to understanding the health of IT organizations. While they are still crucial indicators, each year is a snapshot we use to compare one year to the next. Perhaps the issue is that a year-on-year comparison is not always sufficient to see change. Continents drift only a few inches every year, but eventually with time, there are major tectonic shifts.

There has not been major movement in some of the key indicators, but there are definitely tectonic shifts in the IT organization. Ten years ago, personnel made up 40.9% of the budget on average. Today, that number is 30.8%. Ten years ago, security made up 1.5% of the total IT

budget, the same amount as printers. Today, security is 5.4% of the budget. Artificial intelligence made up such a small percentage of the budget in 2016 that we did not track it. This year, we began tracking it as a separate line item. It already makes up 1.9% of the budget on average, more than security did a decade ago.

Another significant change is in the data center. A decade ago, data center spending was 10.2% of the budget on average. Today, in-house data center spending is 9.0%, but we also now break out cloud spending. Cloud spending plus in-house data center spending has risen to 14.6%. This not only highlights the need for major cloud governance but is a sign of the increasing workloads that IT departments have to manage for data analytics, SaaS, and AI.

AI and data analytics are, not surprisingly, the top priorities in new investment. To determine these priorities, we subtract the number of companies reducing their budget in a given area from the number of companies increasing the budget. Only 3% of companies are cutting their data analytics budgets with 68% increasing them, for a net of 65%. A net of around 64% of companies are increasing their IT spend in AI. Around 9% have not invested in AI at all. Those companies risk falling behind.

In a sign of how important transformation is becoming to businesses, the number of companies increasing budgets for upgrading legacy systems minus those reducing their budgets is 54% this year compared to only 15% last year.

Stable budgets and consistent moderate increases hide roiling changes underneath the surface much like the fault lines under our continents. In other words, when you read the 11 key findings of the study, it is tempting to say, "nothing has changed." Indeed, many of the key indicators we follow for taking the temperature of the IT department have not moved much for a few years. But do not assume that means nothing has shifted. The pace of change is faster than ever. But with every cost cut comes a new technology to invest in. Every new technology is an opportunity to grow the business. There is no "getting ahead of the game." There is only keeping up with the treadmill and not getting spit off the back.

Given that we have seen a 3.0% increase nearly every year for a decade, will we see it again next year? Of course, no trend goes on forever, but it is likely it will be very much in that ballpark. But, as they say, "the devil is in the details." IT departments have transformed themselves in the last decade, and AI promises to continue that deep transformation. To understand those details, we invite you to explore our study, which for the first time exceeds 50 chapters. Each one provides detailed metrics to explore IT spending at the sector and subsector level to better understand which sectors are at the forefront of transformation and which are lagging behind.

Finding 1: IT Operational Spending Growth Normal

The 3.0% growth at the median, as shown in Figure 1-1, is in line with the previous growth we have seen in the cloud era. As mentioned above, 3.0% has become almost the "default" increase. 2022 and 2023 should be considered outliers based on two years of high inflation in the US and Europe.

IT Operational Budget Change from Prior Year: All Sectors

Year	Change
2021	3.0%
2022	5.0%
2023	4.0%
2024	3.0%
2025	3.0%

Source: Avasant Research, 2025

Figure 1-1
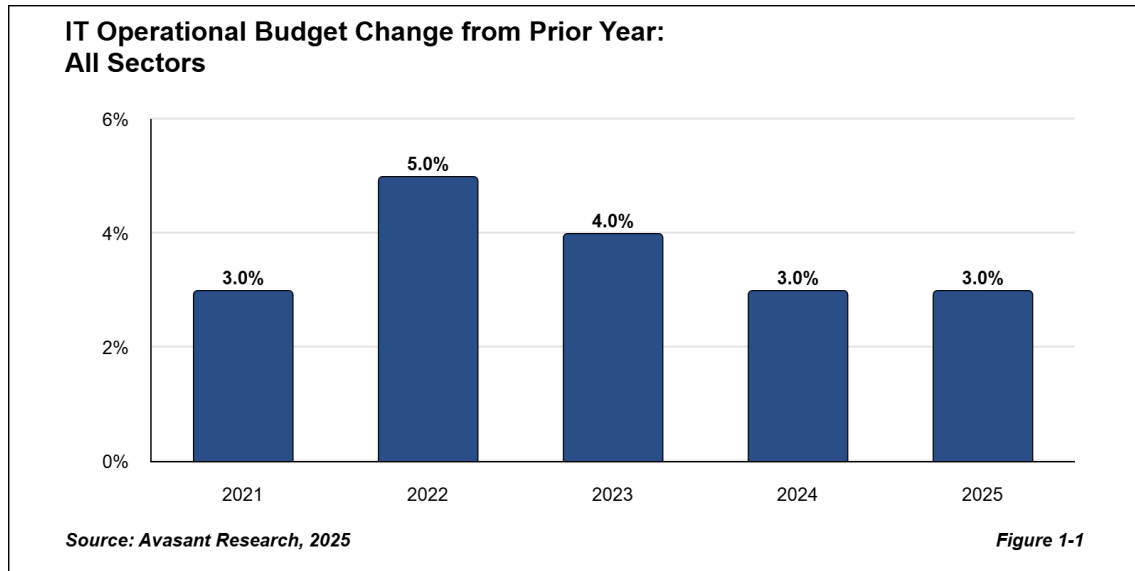
Finding 2: IT Operational Spending Growth Expected

A strong 68.7% of organizations plan to increase IT spending in 2025. However, this is slightly tempered by the 13.7% of organizations that plan cuts. This results in a net increase of 55.0%, as shown in Figure 1-2. Growth is widespread across all company sizes. Essentially, only companies in dire financial straits are likely to be cutting IT budgets. Again, as seen in the graph, this is a relatively standard number to be expected in this era of IT spending. Only the high inflation year of 2022 was an outlier. Even high inflation in 2023 did not make an exception to the rule.

Net Percent Increasing IT Operational Spending: All Sectors

Year	Net Percent
2021	59.0%
2022	70.0%
2023	55.0%
2024	59.0%
2025	55.0%

Source: Avasant Research, 2025   *Figure 1-2*
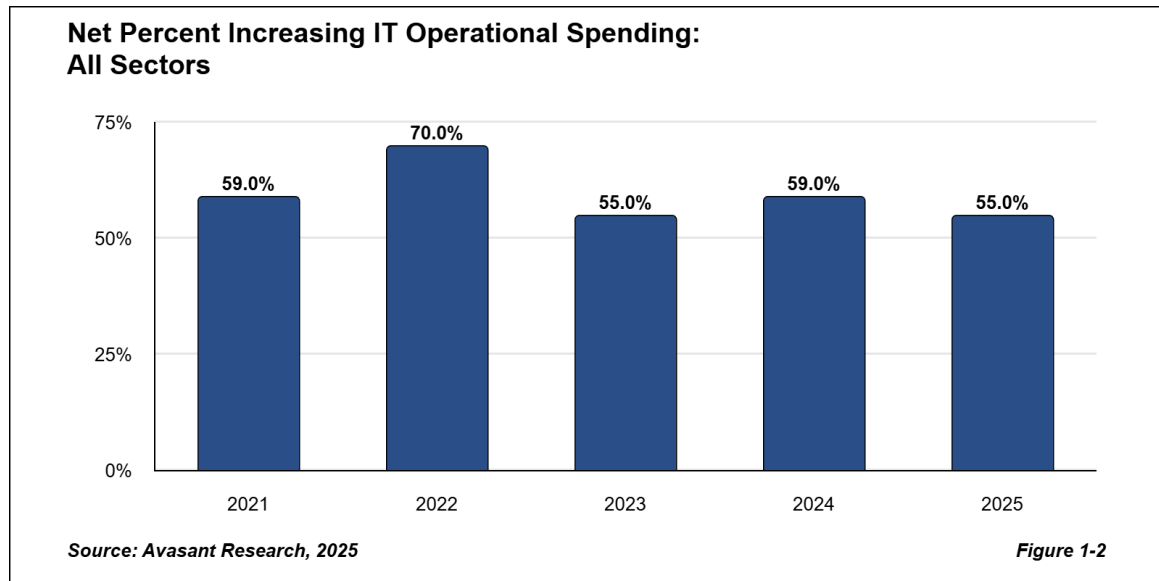
Finding 3: Broad Growth Across All Sizes

Small companies are a little more bullish, but growth is broad across all company sizes, as Figure 1-3 shows. Small companies are expecting IT operational budget growth of 4.0% at the median. Large companies are also bullish at 4.0%. Midsize and large companies are reporting a 2.5% increase at the median. Small companies seem to be trying to catch on to investments in areas such as AI. Variation from size to size is also normal.

IT Operational Spending Growth, by Organization Size: All Sectors

Source: Avasant Research, 2025   *Figure 1-3*
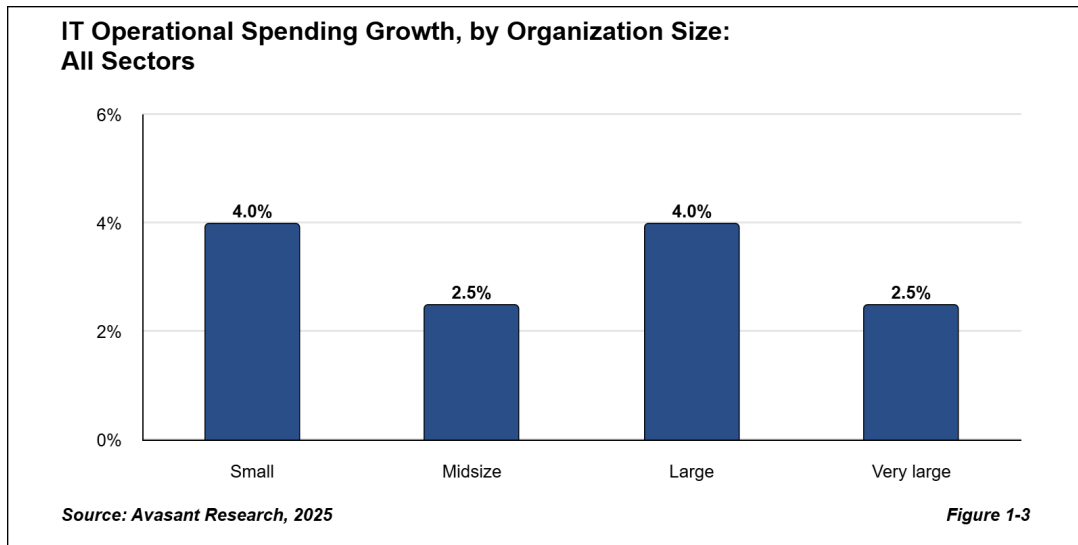
Finding 4: Most CIOs Have Enough Budget

Another indicator of outlook is the degree to which IT executives find that their IT budgets are adequate to support the business. As shown in Figure 1-4, 59.0% of IT executives feel that their IT budgets are either adequate or more than adequate to meet the needs of the business. Anything over half tends to represent confidence in the current state of IT.

Some IT leaders will never be satisfied with their budgets, not necessarily because they are poor leaders. There is always a perception that something could be done faster or better with only a little more money.

Adequacy of Current IT Operational Budget to Support the Business: All Sectors

Source: Avasant Research, 2025   *Figure 1-4*
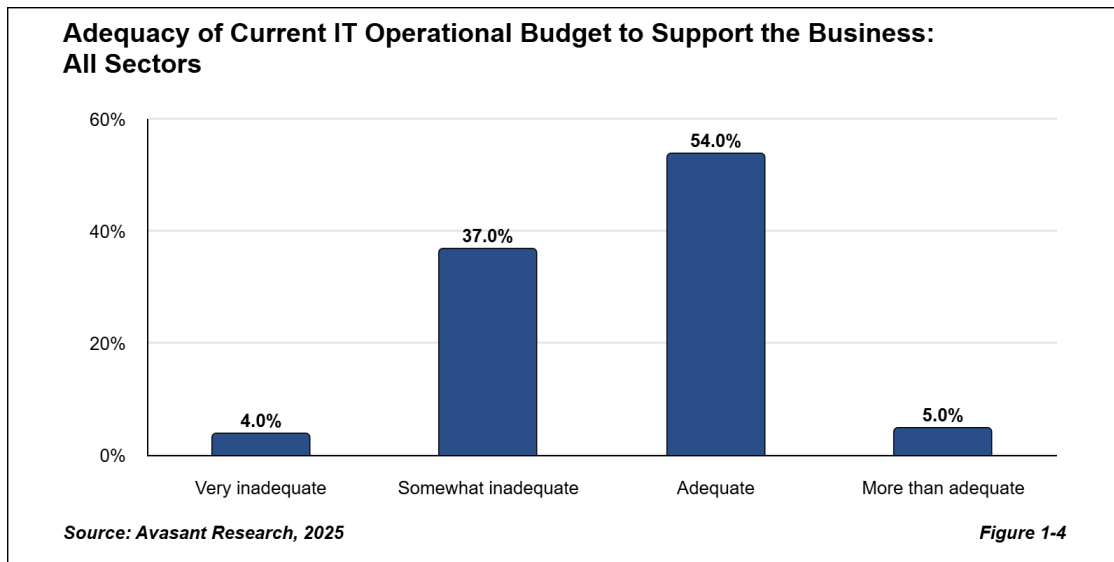
Finding 5: IT Spending as a Percentage of Revenue Ticks Up

As a percentage of revenue, we are seeing a small increase in IT spending this year for the composite sample. As shown in Figure 1-5, the percentage increased from 2.8% last year to 2.9% this year. This percentage fluctuates within a relatively tight space between 2.4% and 2.6% and generally self-corrects as companies adjust their budgets with changing economic realities. However, in the last two years we have broadened the size of our study, specifically including more of the largest companies in the world. While IT spending as a percentage of revenue is driven by sector more than size, the largest companies in the world tend to cluster around sectors that have higher IT spending (banking, insurance, retail, and technology to name a few). We expect the "new normal" for this number to be around 2.8% to 3.0% as we move forward with this larger sample.

Total IT Spending as a Percentage of Revenue: All Sectors

Year	Percentage
2021	2.5%
2022	2.6%
2023	2.4%
2024	2.8%
2025	2.9%

Source: Avasant Research, 2025   *Figure 1-5*
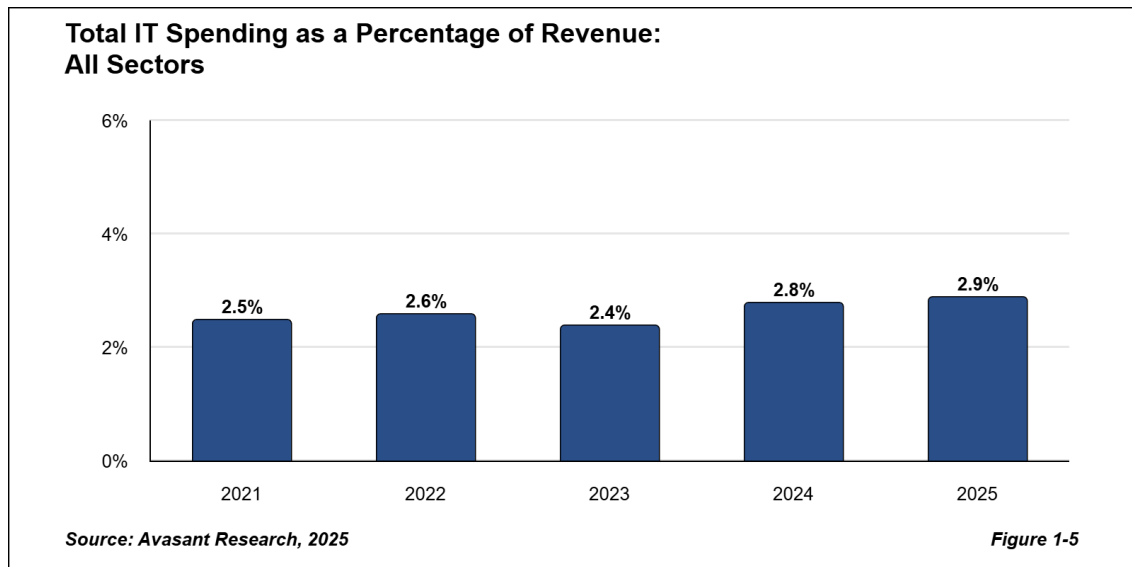
Please note that operational IT spending as a percentage of revenue varies significantly by industry sector. Therefore, the statistics presented here should only be used as an indication of overall trends, not for benchmarking specific organizations. To provide a fair comparison for your organization, please refer to the industry sector chapter of this study that best corresponds to your organization. Chapters 3A–D, which show these metrics by organization size, are also useful in benchmarking specific IT organization performance.

Finding 6: Government/Nonprofit Sector Leads in IT Spending Growth

All sectors are planning growth in IT operational budgets this year, but some sectors are planning for even bigger increases. Six sectors plan an increase of 3.0% or more, the composite median, as Figure 1-6 shows. The weakest growth is in utilities at 2.5%. However, the median increase for the utilities sector is not particularly out of line with other sectors.

**Change in IT Operational Budgets from Prior Year:
All Sectors**

Sector	Value
Government/nonprofit	4.0%
Financial services	3.5%
Prof./tech. services	3.4%
Retail/wholesale	3.0%
All sectors	3.0%
Manufacturing	3.0%
Healthcare services	3.0%
Construction/trade services	2.8%
Utilities	2.5%

Source: Avasant Research, 2025   *Figure 1-6*
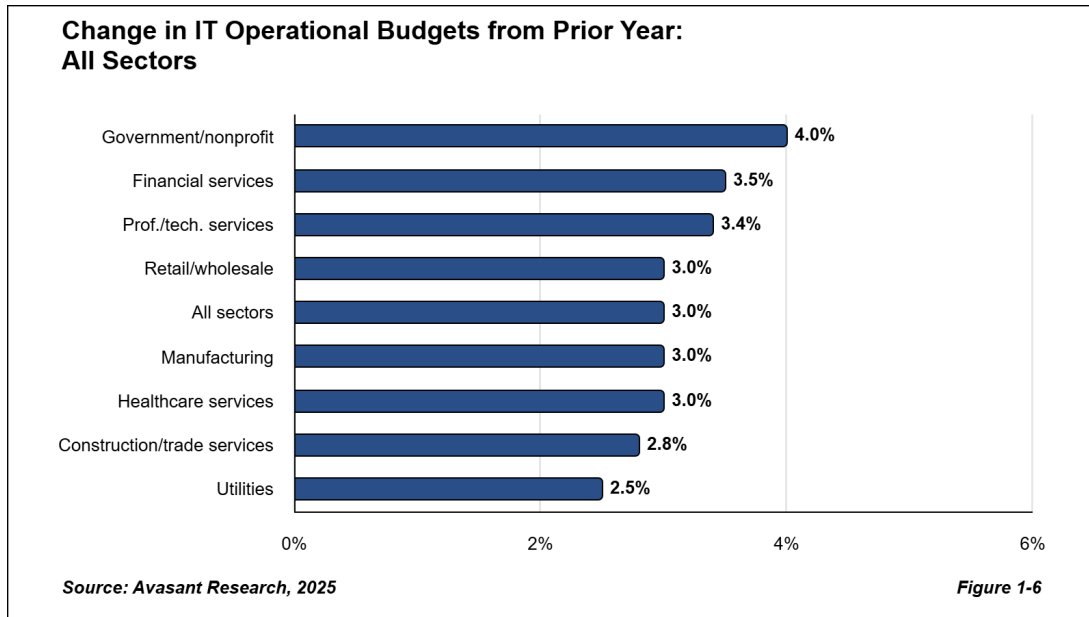
Finding 7: Capital Budgets No Longer a Priority

In addition to IT operational budgets, most organizations maintain IT capital budgets to fund long-term investments in IT infrastructure, equipment, or major system development and implementation. In recent years, capital budgets have been shrinking as companies migrated most of their workloads to the public cloud and shifted their applications to subscription models. This year, only 41.0% of IT organizations are increasing IT capital budgets, and 15.0% are reducing capital spending, as Figure 1-7 shows. This continues a long-term trend.

Percentage of Organizations Changing IT Capital Spending: All Sectors

Decreasing
15.0%

Increasing
41.0%

About same
44.0%

Source: Avasant Research, 2025   *Figure 1-7*
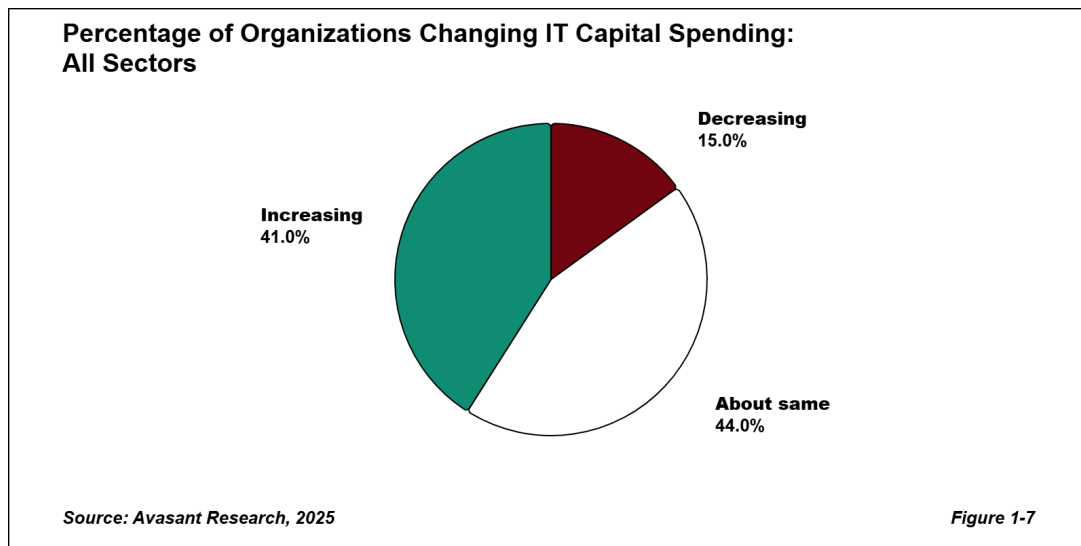
Finding 8: Capital Budgets Essentially Flat as a Percentage of IT Spending

Figure 1-8 shows that capital budgets make up only 13.0% of IT budgets this year, which is technically a small uptick. Capital spending has essentially settled between 12%–13% for the last four years after years of decline. In 2016, when we first started to see real scale uptake of cloud and SaaS, capital budgets made up 21% of total IT budgets. Virtualization, cloud, and other technologies are lessening the need for capital expenditure growth. While existing equipment must still be refreshed, the years of large capital expenditure to handle growth are nearly gone.

Capital Budget as a Percentage of IT Spending: All Sectors

Year	Percentage
2021	17.0%
2022	13.0%
2023	12.0%
2024	12.0%
2025	13.0%

Source: Avasant Research, 2025

Figure 1-8
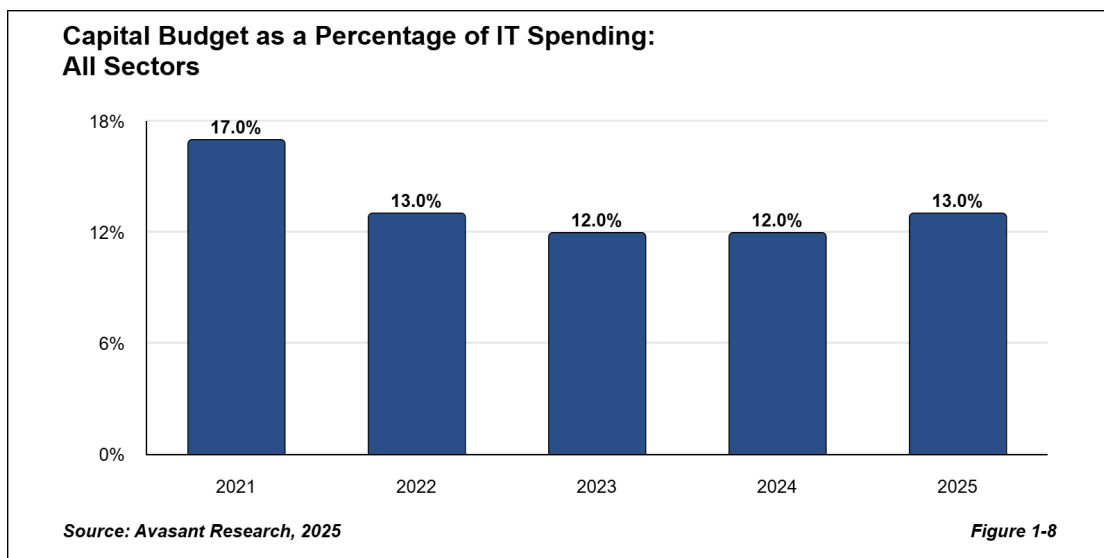
Finding 9: AI and Data Analytics Lead Spending Initiatives

As frequent readers of this report may remember, cloud applications and security were always reported as the top two spending areas for IT companies. Rather than repeat this same information again, last year, we reorganized our question on spending priorities to try to focus more on the more impactful areas of the business. We added categories, such as AI, advanced networking, and automation, and removed some of the old favorites, such as cloud applications.

These priorities are determined by subtracting the percentage of companies decreasing spending in the area from the number increasing to get a net percentage of companies prioritizing this spending category.

As shown in Figure 1-9, business/data analytics, a holdover from the previous question, is first atop the new list of priorities with a net of 65.0%. AI is right behind with 64.0%.

Spending Priorities by IT Initiative: All Sectors

Initiative	Percentage
Data analytics/BI	65.0%
Artificial intelligence	64.0%
Legacy systems	54.0%
DR/business continuity	43.0%
Data center automation	40.0%
IoT	39.0%
Advanced networking	33.0%
VR/AR	18.0%
Metaverse	9.0%
Blockchain	5.0%

Source: Avasant Research, 2025   *Figure 1-9*
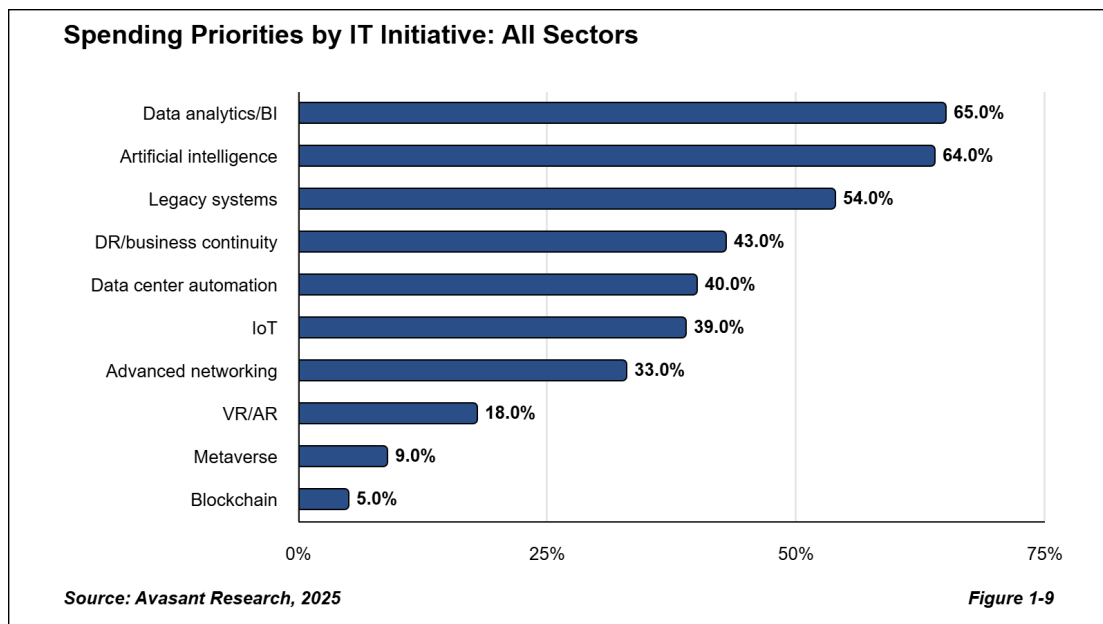
Finding 10: IT Head Count Expected to Be Flat

In recent years, IT spending was generally increasing and the economy was strong, but it did not necessarily translate into good news for IT job seekers. Figure 1-10 shows that 48.0% of organizations plan to increase their head count. Expected increases are flat at the median.

Companies are choosing to rely on increased efficiency from the cloud, automation, AI, and virtualization for growth. Some hiring will still be needed, but we do not see major hiring this year.

Percentage of Organizations Changing IT Staff Head Count: All Sectors

Decreasing
14.0%

Increasing
48.0%

No change
38.0%

Source: Avasant Research, 2025
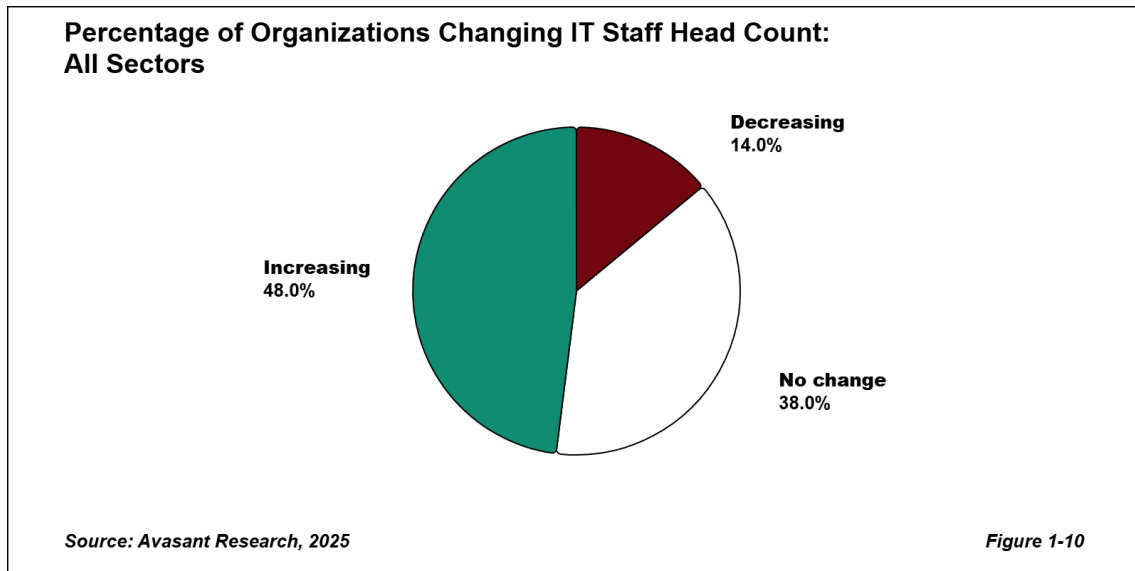
Figure 1-10

Finding 11: The "Big Quit" May Be the New Normal

The so-called "big quit" or "great resignation" definitely started affecting IT organizations in 2022, as turnover grew from just 2.0% at the median in 2021 to 5.5%. As shown in Figure 1-11, this year, at the median, enterprises are enduring a voluntary turnover rate of 5.0%, with some sectors seeing a double-digit turnover rate. Higher turnover impacts IT organizational memory. It especially endangers companies that rely on custom legacy systems that require historical knowledge of those systems. This might be why investment in modernizing legacy systems is up. One good piece of news is that despite high-profile layoffs at tech companies, IT professionals still seem willing to move for the right situation. Savvy IT organizations can take advantage of the war for talent.

Historic Median Turnover: All Sectors

Year	Turnover
2021	2.0%
2022	5.5%
2023	5.0%
2024	5.0%
2025	5.0%

Source: Avasant Research, 2025

Figure 1-11
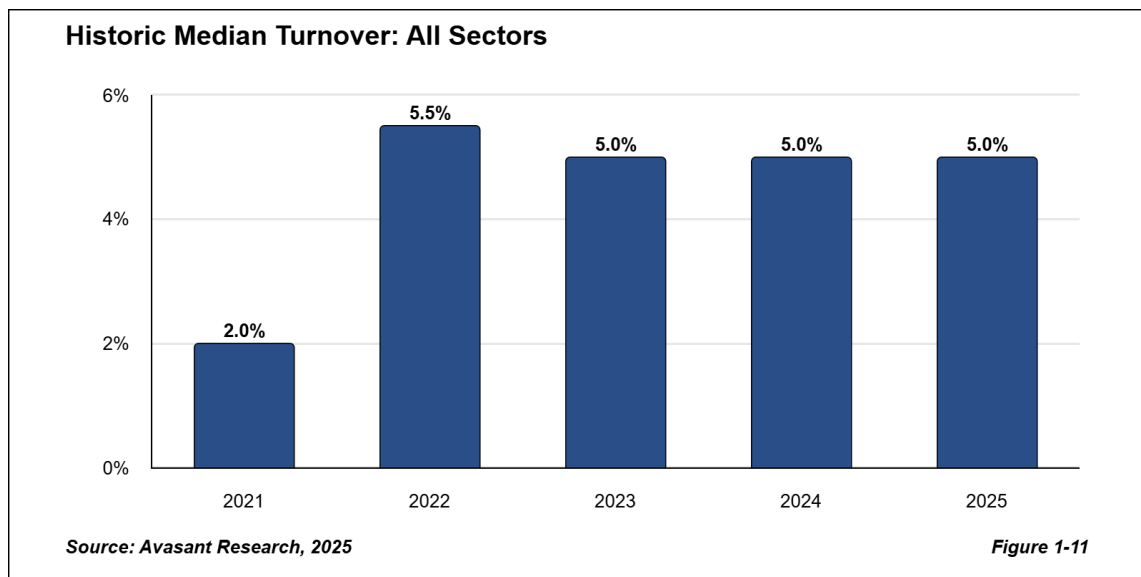
Additional Findings

The Computer Economics *IT Spending and Staffing Benchmarks* study provides a comprehensive, statistical view of the state of IT budgets in US and Canadian organizations. These results are described in full in subsequent chapters.

In addition, throughout the next 12 months, we will conduct further analysis of the data provided in this study and publish the findings on the Avasant website. Computer Economics research is available to Avasant Research subscribers at no charge. Our research reports also may be purchased on an individual basis by non-clients. For information on becoming a client of Avasant Research, please visit our website at avasant.com/research/computereconomics.

Chapter and Sample Descriptions

This study is organized into 53 chapters. Each chapter includes a similar set of benchmarks for a different sample. The chapters are as follows:

Chapter 2: Composite Benchmarks
This chapter provides composite metrics for all survey respondents across all sectors and organization sizes. The sample includes 307 organizations and is stratified by size and sector as described in the survey methodology section. Respondents must have at least $50 million in annual revenue or IT spending greater than $1 million and maintain at least some operations in the US or Canada. There is no upper limit on the size of survey respondents.

Chapters 3A, 3B, 3C, and 3D: Benchmarks by Organization Size
In these chapters, we provide a complete set of benchmarks for organizations within the specified size classification. Small organizations benchmarks are in Chapter 3A, midsize organizations in Chapter 3B, large organizations in Chapter 3C, and very large organizations in Chapter 3D. There are 66 respondents in the small-organization sample, 73 in the midsize sample, 86 in the large sample, and 84 in the very large sample. We define the size categories as follows:

■ Small organizations have IT operational budgets of less than $10 million.

■ Midsize organizations have IT operational budgets of $10 million to less than $100 million.

■ Large organizations have IT operation budgets of $100 million to less than $500 million

■ Very large organizations have IT operational budgets of $500 million or greater.

Chapter 4: Process Manufacturing Sector Benchmarks
Chapter 4 provides benchmarks for process manufacturing organizations. Process manufacturers are defined as those organizations whose production process adds value by mixing, separating, forming, or chemical reaction. This sector includes manufacturers of chemicals, petrochemicals, semiconductors, pharmaceuticals, dietary supplements, food and beverage products, cosmetics, building materials, packaging materials, steel, glass, paper products, and other process-manufactured goods. The 118 respondents in the sample range in size from a minimum of about $50 million to a maximum of around $75 billion in annual revenue.

Process manufacturers are characterized by a comparatively low level of IT spending, focused primarily on back-office, manufacturing, plant and equipment asset management, and supply

chain functions. These firms are among the leaders in the adoption of enterprise business applications such as enterprise resource planning (ERP), but they have lagged in the adoption of customer-facing systems when compared with other sectors.

These firms tend to be conservative in their use of new technologies, although they are typically ahead of the pack in using the Internet of Things (IoT) solutions. They tend to spend comparatively less on IT as a percentage of revenue than most other sectors. However, as they are asset-intensive, they tend to have relatively high levels of revenue per employee.

In addition to appearing in this chapter, some process manufacturers also appear in the samples for the high-tech subsector in Chapter 22, the life sciences subsector in Chapter 23, the food and beverage subsector in Chapter 24, the chemicals subsector in Chapter 25, if they meet the definitions for those subsectors, paper and packaging subsector in chapter 26, and the building materials subsector in chapter 27.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 5: Discrete Manufacturing Sector Benchmarks

Chapter 5 provides benchmarks for discrete manufacturing organizations. Discrete manufacturers are defined as those where the production process adds value by fabricating or assembling individual (discrete) units. This category includes manufacturers of consumer products, athletic equipment, industrial equipment, telecommunications equipment, aerospace products, furniture, auto parts, electrical parts, medical devices, and electronic devices, among other products. The 79 respondents in this sample range in size from a minimum of about $50 million to around $85 billion in annual revenue.

Discrete manufacturers are characterized by a comparatively low level of IT spending, focused primarily on back-office, manufacturing, and supply chain functions. Many of these firms tend to be conservative in their use of emerging technologies, preferring practical solutions that are well-supported and have clear productivity or cost-reduction benefits.

In addition to appearing in this chapter, some discrete manufacturers also appear in the samples for the high-tech subsector in Chapter 22, the life sciences subsector in Chapter 23, the aerospace and defense subsector in Chapter 28, and industrial and automotive manufacturers in Chapter 29, if they meet the definitions for those subsectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 6: Banking and Finance Sector Benchmarks
Chapter 6 provides benchmarks for banking and financial services companies. The firms in this sector include commercial banks, investment banks, credit unions, mortgage lenders, consumer finance lenders, and other types of lenders and financial services providers. The 37 respondents in this sector range in size from a minimum of about $50 million to over $150 billion in annual sales.

Banking and finance companies are information-intensive organizations with a high percentage of knowledge workers. They are leading adopters of business and data analytics. Many of them also have major investments in consumer-facing websites and mobile apps. These businesses are highly regulated, and they have significant requirements for information security, privacy, and disaster recovery. They rank among the most IT-intense sectors in our study.

In addition to appearing in this chapter, some banking and finance respondents may also appear in the sample for the commercial banking subsector in Chapter 30 and the investment banking subsector in Chapter 31, if they meet the definition for that subsector.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 7: Insurance Sector Benchmarks
Chapter 7 provides benchmarks for insurance companies. The firms in this sector include companies that sell medical and dental insurance, life insurance, property and casualty insurance, auto insurance, disability insurance, and other types of insurance. The 44 respondents in this sector range in size from a minimum of $200 million to over $70 billion in annual revenue.

Insurance organizations are information-intensive businesses, and they rely upon information technology for nearly every aspect of their business, from actuarial calculations to claims processing. Many of them have major investments in consumer-facing websites. Most, if not all,

employees of these organizations use computers in their daily work, and insurance companies often have high rates of computers per employee. With their high levels of revenue per employee, insurance companies also tend to spend more per user on IT than any other sector.

In addition to appearing in this chapter, some insurance respondents may also appear in the sample for the healthcare payor subsector in Chapter 34, the property and casualty insurance subsector in Chapter 35, or the life and annuity insurance subsector in Chapter 36, if they meet the definitions for those subsectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 8: Retail Sector Benchmarks
Chapter 8 provides benchmarks for retailers. This sector includes retailers of clothing, jewelry, hardware, furniture, sports equipment, groceries, pharmaceuticals, and general merchandise. It includes department stores, fashion stores, furniture stores, pharmacies, convenience stores, sporting goods stores, and specialty retailers. We also include hospitality and consumer services in this sector. The 55 respondents in the sample range in size from $200 million to over $200 billion in annual revenue.

The retail sector is characterized by moderate levels of IT spending. Most retailers have data networks that support multiple selling locations for point-of-sale and inventory management. Application portfolios range from high-volume transaction-processing systems to sophisticated systems for business and data analytics. Many retailers have major investments in business-to-consumer web commerce systems, and most do at least some selling online. Retailers have a mix of full-time and temporary employees, not all of whom use computers. The automation of credit transactions and the storing of customer data make information security and privacy important requirements in retail.

In addition to appearing in this chapter, our retail respondents also appear in the sample for the brick-and-mortar retail subsector in Chapter 32 and the online retail subsector in Chapter 33, if they meet the definitions for those subsectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-

year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 9: Wholesale Distribution Sector Benchmarks

Chapter 9 provides benchmarks for wholesale distributors. This category includes wholesale distributors of building products, home furnishings, home improvement products, auto parts, industrial components, fuel supply, electronics, food and beverage, and other products. The 53 respondents in the sample range in size from a minimum of about $50 million to over $200 billion in revenue.

Wholesale distributors serve as middlemen between manufacturers and other businesses, often providing value-added services such as testing, packaging, bundling, warehousing, shipping, marketing, master data management, and inventory management. They serve a vital function in the supply chain of many industries, aggregating the demand of small-order customers and stocking products from a variety of suppliers to provide one-stop shopping. Information concerning supply and demand is essential for wholesale distributors. Transportation management and warehouse management systems are also central to the application portfolios of these organizations. Despite their reliance on information technology, wholesale distributors tend to spend less on IT as a percentage of revenue than most sectors do, mostly due to their higher-than-average levels of revenue per employee.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 10: Energy and Utilities Sector Benchmarks

Chapter 10 provides benchmarks for public utilities, oil and gas producers, service companies, and midstream distributors across all organization sizes. The 39 respondents in this sector include public utilities (water, gas, and electric), integrated energy companies, upstream exploration and production companies, natural gas companies, pipeline operators, and other energy and utility companies. The companies in our sample range in size from a minimum of about $50 million to more than $300 billion in annual revenue.

These companies generate higher-than-average levels of revenue per employee and support extensive field operations. As such, they are characterized by higher-than-average IT spending on a per-user basis and low-to-moderate levels of IT spending as a percentage of revenue. They invest in mobile communications and technology more than most organizations. Utilities are capital- and IT-intensive concerns and have a higher-than-average level of IT spending on a

per-user basis. Energy and utility companies have large investments in plants and equipment and, as a result, tend to have significant investments in enterprise asset management systems. In the case of utilities, they also have significant investments in customer-facing systems, such as utility billing, e-commerce, and customer relationship management (CRM) systems. They are also leaders in the Internet of Things (IoT) adoption, powered by sensor data, along with geographic information systems (GIS). Energy utilities are undergoing a significant amount of modernization, much of it driven by state and federal mandates for smart meters, smart networks, smart grids, and other efficiencies geared toward reducing energy use, especially during times of peak demand. As such, utility companies are increasingly supporting new technology initiatives that enable them to improve service delivery, increase efficiency, and reduce the overall power demand.

In addition to appearing in this chapter, many energy and utilities respondents also appear in the sample for the oil and gas subsector in Chapter 37 and the utilities subsector in Chapter 38, if they meet the definitions for those subsectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 11: Telecom Sector Benchmarks

Chapter 11 focuses on benchmarks for the telecommunications sector, encompassing various organization sizes. The respondents in this sector typically include wireline and wireless carriers, internet service providers (ISPs), cable operators, and other communications service providers. The 27 companies in our sample range in annual revenue from approximately $50 million to well over $100 billion.

These companies are characterized by higher IT spending driven by the intensive capital and technological investments required to build, maintain, and evolve vast network infrastructures. They also tend to have moderate to high levels of revenue per employee, especially as they move toward more automated and software-defined operations. A significant portion of their IT investment is directed toward network infrastructure, including the ongoing rollout and optimization of 5G, as well as the adoption of virtualization technologies such as Software-Defined Networking (SDN) and Network Function Virtualization (NFV).

Given their complex and constantly evolving service offerings, telecommunications companies make substantial investments in sophisticated IT systems for customer relationship management (CRM), billing, and service assurance. They are at the forefront of adopting emerging technologies such as artificial intelligence (AI) and machine learning (ML) for network automation, predictive maintenance, and fraud detection and enhancing customer service through chatbots and virtual assistants. The Internet of Things (IoT) is another key

investment area, as telecom providers aim to facilitate and monetize the increasing number of connected devices across various industries.

In addition to appearing in this chapter, many telecommunication companies may also appear in the sample for the utilities subsector in Chapter 38, if they meet the definitions for those subsectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 12: Healthcare Services Sector Benchmarks

Chapter 12 provides benchmarks for healthcare services companies. The 46 respondents in this sector include community hospital groups, multiregional hospital systems, healthcare systems, dental service organizations, university hospitals, long-term care facilities, and other healthcare organizations. These organizations range in size from a minimum of about $50 million to over $75 billion in annual revenue.

These organizations share complex payment and reimbursement arrangements and have strict IT security and privacy requirements. The sector needs IT staff with specialized skills to manage patient medical records systems, mobile platforms, imaging, and other clinical systems with large data storage and networking requirements. Hospitals also support many nonemployee users and have relatively high levels of IT spending. They also face growing cybersecurity threats, including ransomware.

In addition to appearing in this chapter, many healthcare services providers may also appear in the sample for the hospitals subsector in Chapter 39 and the healthcare clinics and doctors' office subsector in Chapter 40, if they meet the definitions for those subsectors. Healthcare services providers that also offer health insurance plans are included in the healthcare payors subsector in Chapter 34.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 13: Professional and Technical Services Sector Benchmarks

Chapter 13 provides benchmarks for professional and technical services organizations. The 52 respondents in the sample range in size from a minimum of about $50 million to about $40 billion in annual revenue. The sector includes firms that provide professional and technical services, including engineering, legal, accounting, financial advice, consulting, marketing, research, and other services.

These organizations are characterized by a high percentage of knowledge workers who make extensive use of technology. Customer relationship management (CRM), professional services automation, project management, and knowledge management are important applications in this sector. These organizations are often leaders in the adoption of SaaS and mobile applications. Please note that IT services providers, software companies, and value-added resellers are not included in the sample for this sector, even though they often have professional services groups. Rather, we include such organizations in the IT services and solutions sector in Chapter 16.

In addition to appearing in this chapter, many professional and technical services providers may also appear in the sample for the professional services subsector in Chapter 41 or the technical services subsector in Chapter 42, if they meet the definitions for those subsectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 14: Transportation and Logistics Sector Benchmarks

Chapter 14 provides benchmarks for the transportation and logistics sector. The 39 respondents in this sample range in size from a minimum of $50 million to over $80 billion. The category includes organizations that operate buses, trucks, railways, airlines, barges, and ships. The sector also includes logistics companies that transport goods, transportation companies, and regional transportation authorities that move people.

These organizations require systems to track moving stock, manage inventory, and maintain flexible communications systems. Some of them are leaders in the collection of sensor-based data for tracking fleet assets and have extensive networks to support these requirements. In some cases, only a portion of the employees in this sector use IT systems, and these capital-intensive organizations spend only a moderate amount on IT as a percentage of revenue. Because these firms are part of the critical infrastructure of their nations, they also tend to spend more on IT security and cybersecurity.

In addition to appearing in this chapter, some transportation and logistics companies may also appear in the sample for the logistics subsector in Chapter 49, if they meet the definition for that subsector.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 15: Construction and Trade Services Sector Benchmarks

Chapter 15 provides benchmarks for construction and trade services companies. The 38 respondents in the sample range in size from about $50 million to over $75 billion in annual revenue. The category includes engineering and construction companies, commercial, residential, and industrial construction contractors, specialty contractors, oil field services firms, firms that provide mining services, environmental services firms, and other construction and trade services firms.

For many companies in this sector, only a portion of employees use corporate IT systems. They require systems to support engineering, back-office, and project management activities. Some of them are heavy users of geographic information systems (GIS). These organizations support a high number of smartphone users, but they tend to have small IT budgets in proportion to revenue and employee head count.

In addition to appearing in this chapter, many construction and trade services companies may also appear in the sample for the construction and general contractor subsector in Chapter 43 or the trade services subsector in Chapter 44, if they meet the definitions for those subsectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 16: IT Services and Solutions Sector Benchmarks

Chapter 16 provides IT spending and staffing statistics for the IT services and solutions sector. This category includes software companies, SaaS providers, systems integrators, IT solution providers, business process outsourcing firms, and other IT services and solutions providers. There are 43 organizations in the sample, ranging in size from around $50 million to over $60 billion in annual revenue.

Companies in this sector leverage IT as part of their core competency and tend to invest in emerging technologies. They often have a large customer service component in their businesses and make use of sophisticated customer relationship management (CRM) systems. Their finance and accounting systems can have complex subscription or usage-based billing and revenue recognition needs. They usually have the need for professional services automation and project management systems. One important note: Our metrics for this sector are for internal IT support only and not for the development or delivery of IT products or services for sale to customers. Nevertheless, because they are often storing and processing customer information, IT services firms often have high levels of spending on IT security and cybersecurity. This is especially true if their customers include governments, financial institutions, retailers, or healthcare providers.

In addition to appearing in this chapter, some of the respondents may also appear in the sample for the software and technology subsector in Chapter 45 and the IT services and consulting subsector Chapter 46, if they meet the definitions for those subsectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 17: Government Sector Benchmarks

Chapter 17 provides benchmarks for government organizations. The 28 respondents in the sample range in size from about $50 million to over $30 billion in annual revenue. The category includes city and county governments, federal and state agencies, law enforcement agencies, organizations that provide IT services to government agencies, and other government organizations.

Government organizations can have major investments in citizen-facing systems and websites, and they often are heavy users of geographic information systems (GIS). In many cases, there is a historical reliance on custom software and legacy systems.

In addition to appearing in this chapter, our government respondents may also appear in the samples for city and county governments in Chapter 47 and government agencies in Chapter 48, depending on how they meet the definitions for those subsectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-

year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 18: Nonprofits and Charitable Organizations Sector Benchmarks

Chapter 18 provides benchmarks for nonprofits and charitable organizations. This sector includes local and national charity organizations, conservation groups, youth development organizations, organizing bodies, and other nonprofit organizations. We do not include organizations where the nonprofit status only reflects the entity type. Nonprofit hospitals are an example. They operate from an IT perspective in a way that is not significantly different from for-profit hospitals. The 14 respondents in the sample range in size from a minimum of about $50 million to over $300 million in annual revenue.

Nonprofits and charitable organizations tend to lag for-profit organizations in adopting new technologies, and their spending on new initiatives is constrained. Their unique requirements for information systems tend to be in financial applications, which often need to support grant management, contributions accounting, and fund accounting. They frequently need specialized customer relationship management (CRM) systems to support fundraising campaigns and donor relationship management. Contrary to common belief, nonprofit organizations do not always spend less on IT as a percentage of revenue or per user than commercial organizations do.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 19: Education Sector Benchmarks

Chapter 19 provides benchmarks for the education sector. This sector includes public and private colleges and universities, business and medical schools, for-profit educational institutions, school districts, online course providers, and foundations. The 18 respondents in the sample have annual revenues ranging in size from a minimum of about $50 million to around $8 billion.

Many educational institutions have multibuilding campuses or multiple campuses, which require significant investment in network infrastructure. They also tend to have high desktop support requirements for student labs and classrooms. Back-office systems for accounting, human resources, billing, and other administrative functions are typical, but they often have specialized applications to handle enrollment and student records.

In addition to appearing in this chapter, some of the respondents may also appear in the sample for the higher education subsector in Chapter 50, if they meet the definition for that subsector.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 20: Commercial Real Estate Sector Benchmarks

Chapter 20 provides benchmarks for commercial real estate organizations. The 26 respondents in the sample range in size from about $50 million to over $30 billion in annual revenue. The sector includes retail, office, industrial, multifamily, and other property management companies, commercial real estate developers, real estate investment firms, and real estate brokers, consultants, and advisors.

Most commercial real estate firms are asset-intensive, and they have the highest level of revenue per employee in our study. As a result, they tend to have a comparatively low level of IT spending as a percent of revenue but higher-than-average levels of IT spending on a per-user basis. Their specialized needs for IT systems include asset management, property management, lease management, and other commercial real estate applications. They are heavy investors in the Internet of Things (IoT) with initiatives such as smart buildings and energy management systems. They tend to be more advanced than many other industries in their adoption of cloud applications and mobile devices.

In addition to appearing in this chapter, a few of the respondents also appear in the sample for banking and financial services organizations in Chapter 6, if they meet the definition for that sector.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 21: Media and Information Services Sector Benchmarks

Chapter 21 provides benchmarks for the media and information services sector. This sector includes publishing, broadcasting, entertainment, and digital media organizations, as well as

other media and information services companies. The 20 respondents in the sample have annual revenues ranging from about $50 million to around $100 billion.

Increasing viewership or readership is a key objective of this sector. Thus, social media use and digital content creation continue to dominate the sector. The companies in this sector often invest in custom systems that provide platforms for the delivery of content to customers. High use of data to personalize the customer experience and make marketing more effective leads to higher-than-average demands for security and privacy. Organizations in this sector have comparatively high levels of spending on outsourcing.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 22: High-Tech Subsector Benchmarks
Chapter 22 provides benchmarks for high-tech companies. This category includes computer products manufacturers, telecommunications equipment manufacturers, semiconductor manufacturers, aerospace and defense manufacturers, pharmaceutical makers, biotechnology product makers, and other high-tech manufacturers. The 24 respondents in this sample range in size from a minimum of about $100 million to over $60 billion in revenue.

Organizations in the high-tech subsector are characterized by having complex, team-based sales processes, large customer service and support needs, and significant investments in research and development. In the case of high-tech manufacturers, they tend to spend more on IT than manufacturing companies in general.

In addition to appearing in this chapter, high-tech subsector respondents often appear in the samples for other sectors, specifically process manufacturing (Chapter 4), discrete manufacturing (Chapter 5), the life sciences subsector (Chapter 23), and the aerospace and defense subsector (Chapter 28) if they meet the definitions for those sectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 23: Life Sciences Subsector Benchmarks

Chapter 23 provides benchmarks for life sciences companies. This category includes pharmaceutical makers, biotechnology product companies, and medical device manufacturers. The 25 respondents in this sample range in size from a minimum of about $50 million to over $60 billion in revenue.

Organizations in the life sciences subsector are characterized by having complex and significant investments in research and development. In the case of device manufacturers, they tend to spend more on IT than manufacturing companies in general.

In addition to appearing in this chapter, the life sciences subsector respondents often appear in the samples for other sectors, specifically process manufacturing (Chapter 4), discrete manufacturing (Chapter 5), and the high-tech subsector (Chapter 22), if they meet the definitions for those sectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 24: Food and Beverage Subsector Benchmarks

Chapter 24 provides benchmarks for food and beverage manufacturers. The 40 respondents in the sample range in size from about $50 million to around $40 billion in annual revenue. Food and beverage companies produce beverages, snack foods, meat products, seafood products, dairy products, dietary supplements, and other consumable food products. Some are suppliers to other food manufacturers or to the food service industry, while many also distribute consumer products to retailers or directly to consumers. This subsector does not include retailers of food and beverages, such as restaurants, unless they also manufacture their own food and beverage products.

Food and beverage companies have moderately low levels of IT spending, focused primarily on back-office, manufacturing, and supply chain functions. These firms invest in enterprise resource planning (ERP), product life cycle management, and supply chain applications, but usually have lower investment in customer-facing systems than other subsectors. Like most process manufacturers, they often have sophisticated systems for factory plant and equipment maintenance, including real-time monitoring. Food safety regulations have forced food manufacturers to increase their investment in supply chain management to allow tracking and tracing of products from source to final distribution.

In addition to appearing in this chapter, food and beverage respondents also appear in the sample for process manufacturers (Chapter 4), since all food and beverage companies are, by definition, process manufacturers.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 25: Chemicals Subsector Benchmarks
Chapter 25 provides benchmarks for chemical manufacturers. Chemical manufacturers are, by definition, process manufacturers that produce chemical products. This subsector includes manufacturers of chemicals, petrochemicals, and other chemical products. The 28 respondents in the sample range in size from a minimum of about $50 million to around $45 billion in annual revenue.

Chemical manufacturers are characterized by a comparatively low level of IT spending, focused primarily on back-office, manufacturing, plant and equipment asset management, and supply chain functions. These firms are among the leaders in the adoption of enterprise business applications such as enterprise resource planning (ERP), but they have somewhat lagged in adopting customer-facing systems when compared with other sectors. These firms are typically conservative in their use of new technologies, although they tend to be ahead of the pack in the use of the Internet of Things (IoT). They tend to spend comparatively less on IT as a percentage of revenue than most other sectors. Because they are asset-intensive, they tend to have relatively high levels of revenue per employee, and thus higher levels of IT spending per user.

In addition to appearing in this chapter, chemicals manufacturers also appear in the sample for process manufacturing (Chapter 4).

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 26: Paper and Packaging Subsector Benchmarks
Chapter 26 focuses on benchmarks for the paper and packaging subsector, encompassing various organization sizes. As a critical component of the broader process manufacturing sector, respondents in this subsector typically include pulp and paper mills, containerboard

and corrugated packaging manufacturers, flexible packaging producers, specialty paper converters, and other companies involved in the production and distribution of paper-based and allied packaging materials. The 19 companies in our sample range in annual revenue from approximately $50 million to well over $15 billion, reflecting the diverse scale of operations within the industry.

These companies are characterized by significant capital investments in their manufacturing facilities and tend to have moderate levels of revenue per employee, given the highly automated nature of production. They typically exhibit low IT spending driven by the need to optimize complex production processes and maintain a strong bottom line. A substantial portion of their IT investment is directed toward optimizing manufacturing operations, including the adoption of advanced automation, robotics, and process control systems.

Given the asset-intensive nature of this industry, paper and packaging companies make significant investments in enterprise asset management (EAM) systems. They also invest in manufacturing execution systems (MES) and integrate with their enterprise resource planning (ERP) systems.

In addition to appearing in this chapter, many paper and packaging respondents also appear in the sample for the broader process manufacturing sector in Chapter 4.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 27: Building Materials Subsector Benchmarks

Chapter 27 provides benchmarks for the building materials subsector, a vital part of the broader process manufacturing sector. The respondents in this subsector typically include manufacturers of cement, concrete, aggregates, bricks, insulation, gypsum products, roofing materials, pipes, glass, and various other essential components used in construction. The 19 companies in our sample often span a wide range in annual revenue, from approximately $200 million to over $60 billion.

These companies are characterized by significant capital expenditure for plant and equipment. They tend to have moderate levels of revenue per employee, reflecting the highly automated and large-scale nature of their production facilities. IT spending is generally low, indicative of their asset-intensive business model where large revenue streams are generated from substantial physical assets.

Building materials companies are undergoing substantial modernization, driven by the need for increased productivity, lower operational costs, and compliance with evolving environmental regulations and standards for sustainable construction. This necessitates continuous investment in new technologies that enable them to produce more efficiently, track materials effectively, and contribute to greener building practices.

In addition to appearing in this chapter, many building materials companies may also appear in the sample for the broader process manufacturing sector in Chapter 4.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 28: Aerospace and Defense Subsector Benchmarks
Chapter 28 provides benchmarks for aerospace and defense companies. This category includes airplane and aerospace manufacturers, makers of weapons systems, aerospace and defense research, and other defense companies. The 16 respondents in this sample range in size from a minimum of about $50 million to around $50 billion in revenue.

Organizations in the aerospace and defense subsector are characterized by having complex, team-based sales processes, large customer service and support needs, and significant investments in research and development. In the case of manufacturers, they tend to spend more on IT than manufacturing companies in general. They also have high compliance and cybersecurity needs. Furthermore, they have complex systems to manage and ensure compliance with government contracts.

In addition to appearing in this chapter, aerospace and defense respondents may also appear in the sample for other sectors such as discrete manufacturers in Chapter 5.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 29: Industrial and Automotive Subsector Benchmarks
Chapter 29 provides benchmarks for industrial and automotive manufacturers. The 46 respondents in this subsector make auto parts, material handling equipment, engines, machinery, vehicles, and similar durable goods. The manufacturers in the sample range in size from about $50 million to about $75 billion in annual revenue.

Industrial and automotive companies have moderate levels of IT spending, focused primarily on back-office, manufacturing, and supply chain functions. These firms invest in enterprise resource planning (ERP) and supply chain applications, but they have lower investments in customer-facing systems than other subsectors. On the other hand, they are increasingly

making investments in manufacturing execution systems, including capabilities for factory data collection, real-time machine network connectivity, and sensor data from smart manufacturing processes. Many of them also have requirements for field service and the ability to connect to installed products at customer locations.

In addition to appearing in this chapter, most of the industrial and automotive respondents also appear in the sample for discrete manufacturers in Chapter 5.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 30: Commercial Banking Subsector Benchmarks
Chapter 30 provides benchmarks for commercial banks. This subsector includes credit unions and community, regional, international, and national banks. The 26 respondents in this sample have annual revenues ranging from a minimum of about $50 million to about $175 billion.

As with other types of financial services firms, commercial banks are information-intensive businesses with a high percentage of knowledge workers. These businesses are highly regulated, and they have significant requirements for information security, disaster recovery, and real-time transaction processing. Many of them also have major investments in consumer-facing website applications. Banking organizations are IT-intensive and spend a higher percentage of revenue on IT than companies in most other sectors.

In addition to appearing in this chapter, all respondents for the commercial banking subsector appear in the sample for the banking and finance sector in Chapter 6.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 31: Investment Banking and Wealth Management Subsector Benchmarks
Chapter 31 provides benchmarks for investment banking and wealth management firms. This subsector includes companies offering services such as portfolio management, financial advisory, private banking, asset management, and retirement planning. The 24 respondents in this sample have annual revenues ranging from about $50 million to about $200 billion.

Investment and wealth management firms are highly information-driven, relying extensively on data analytics, market intelligence, and client insights to deliver personalized financial strategies. These organizations employ a high proportion of knowledge workers, including financial advisors, analysts, and portfolio managers. They are also significant investors in digital platforms, including client portals, mobile apps, and advisory tools, to enhance client engagement and operational efficiency.

Given the nature of their services, these firms operate under stringent regulatory frameworks and maintain robust standards for data privacy, cybersecurity, and business continuity. As a result, they are among the most IT-intensive organizations in the financial services industry.

In addition to appearing in this chapter, all respondents for the investment banking and wealth management subsector appear in the sample for the banking and finance sector in Chapter 6.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 32: Brick-and-Mortar Retail Subsector Benchmarks

Chapter 32 provides benchmarks for brick-and-mortar retailers. This subsector includes department stores, clothing stores, convenience stores, pet stores, pharmacies, hardware stores, nonprofit retailers, furniture retailers, agricultural retailers, and other retailers. The 38 respondents in this sample have annual revenues ranging from about $150 million to over $200 billion.

Most brick-and-mortar retailers have data networks that support multiple selling locations for point-of-sale and inventory management. Application portfolios range from high-volume, transaction-processing systems to sophisticated systems for business intelligence and data analytics. Most brick-and-mortar retailers have at least some capabilities for business-to-consumer web commerce. Brick-and-mortar retailers have a mix of full-time and temporary employees, not all of whom use computers. The automation of credit transactions and the storing of customer information make information security and privacy an important requirement in this subsector.

In addition to appearing in this chapter, all the brick-and-mortar retailers also appear in the sample for the retail sector in Chapter 8. However, in this chapter, we exclude hospitality organizations, consumer services providers, and other organizations selling to consumers that

do not have retail storefront operations. Some of the retailers in this chapter also appear in the sample for online retailers in Chapter 33, if they have e-commerce capabilities.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 33: Online Retail Subsector Benchmarks
Chapter 33 provides benchmarks for online retailers. This subsector includes online retailers of clothing, home furnishings, dietary supplements and health products, agricultural products, pharmaceuticals, sports equipment, and other products. The 36 respondents in this sample have annual revenue ranging from about $100 million to over $200 billion.

As with other types of retailers, online retailers have portfolios that range from high-volume transaction-processing systems to sophisticated systems for business intelligence and data analytics. Online retailers, obviously, have major investments in e-commerce systems, which drive higher levels of IT spending compared to retailers in general. The automation of credit transactions and the storing of customer information make information security and privacy an important requirement in this subsector.

In addition to appearing in this chapter, all the respondents for this subsector appear in the sample for the retail sector in Chapter 8. Many, though not all, online retailers have a brick-and-mortar presence as well. If so, they would also be found in the sample for brick-and-mortar retail in Chapter 32.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 34: Healthcare Payors Subsector Benchmarks
Chapter 30 provides benchmarks for health insurance companies. The firms in this subsector include companies that sell medical and dental insurance, as well as healthcare providers that offer health insurance plans and function as healthcare payors. The 22 respondents in this subsector range in size from a minimum of $250 million to over $100 billion in annual revenue.

Health insurance organizations are information-intensive businesses, and they rely upon information technology for nearly every aspect of their business, from actuarial calculations to claims processing. Many of them have major investments in consumer-facing websites, and their frequent interactions with customers drive higher spending on contact centers and customer experience generally. Most, if not all, employees of these organizations use computers in their daily work, and insurance companies often have high rates of computers per employee. With their high levels of revenue per employee, insurance companies also tend to spend more per user on IT than any other sector.

In addition to appearing in this chapter, healthcare payor respondents also appear in the sample for the insurance sector in Chapter 7.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 35: Property and Casualty Insurance Subsector Benchmarks
Chapter 35 provides benchmarks for property and casualty (P&C) insurance companies. The firms in this subsector include companies that offer property and casualty insurance, auto insurance, homeowner's insurance, renter insurance, and similar types of insurance. The 18 respondents in this subsector range in size from a minimum of about $200 million to over $50 billion in annual revenue.

P&C insurance organizations are information-intensive businesses that rely upon information technology for nearly every aspect of their business, from actuarial calculations to claims processing. Many of them have major investments in consumer-facing websites. Most, if not all, employees of these organizations use computers in their daily work, and insurance companies often have high rates of computers per employee. With their high levels of revenue per employee, insurance companies also tend to spend more per user on IT than any other sector.

In addition to appearing in this chapter, P&C insurance respondents also appear in Chapter 7, the insurance chapter.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 36: Life and Annuity Insurance Subsector Benchmarks

Chapter 36 provides benchmarks for life and annuity insurance companies. The firms in this subsector include companies that sell life insurance, long-term disability insurance, annuities, and other types of insurance. The 16 respondents in this subsector range in size from a minimum of about $300 million to over $50 billion in annual revenue.

Life and annuity insurance organizations are information-intensive businesses that rely upon information technology for nearly every aspect of their business, from actuarial calculations to claims processing and financial forecasting. Many of them have major investments in consumer-facing websites. Most, if not all, employees of these organizations use computers in their daily work, and insurance companies often have high rates of computers per employee. With their high levels of revenue per employee, insurance companies also tend to spend more per user on IT than any other sector.

In addition to appearing in this chapter, life and annuity insurance respondents also appear in Chapter 7, the insurance chapter.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 37 Oil and Gas Subsector Benchmarks

Chapter 37 provides benchmarks for oil and gas producers and midstream distributors across all organization sizes. The 17 respondents in this subsector include integrated energy companies, upstream exploration and production companies, natural gas companies, pipeline operators, and other energy and utilities companies. The companies in our sample range in size from a minimum of about $50 million to more than $300 billion in annual revenue.

These companies generate higher-than-average levels of revenue per employee and support extensive field operations. As such, they are characterized by higher-than-average IT spending on a per-user basis and low to moderate levels of IT spending as a percentage of revenue. They invest in mobile communications and technology to a higher degree than most organizations. Oil and gas companies have large investments in plants and equipment and, as a result, tend to have significant investments in enterprise asset management systems. They are also leaders in the Internet of Things (IoT) adoption, powered by sensor data, along with

geographic information systems (GIS). Energy utility companies are undergoing a significant amount of modernization, much of it driven by state and federal mandates for smart meters, smart networks, smart grids, and other efficiencies geared toward reducing energy use, especially during times of peak demand.

In addition to appearing in this chapter, many oil and gas respondents may also appear in the sample for the energy and utilities sector in Chapter 10 and the utilities subsector in Chapter 38, if they meet the definition for those sectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 38: Utilities Subsector Benchmarks

Chapter 38 provides benchmarks for utilities. The 23 respondents in this subsector range in size from $80 million to over $60 billion in annual revenue. This category includes gas and electric utilities, power transmission distributors, water and power utilities, and telecommunications service providers.

Utilities are capital- and IT-intensive concerns and have relatively high levels of IT spending on a per-user basis. They have large investments in plants and equipment and, as a result, tend to have significant investments in enterprise asset management systems. They also have significant investments in customer-facing systems, such as utility billing, e-commerce, and customer relationship management (CRM) systems. Energy utilities are undergoing a significant amount of modernization, much of it driven by state and federal mandates for smart meters, smart networks, smart grids, and other efficiencies geared toward significantly reducing energy use, especially during times of peak demand. As such, utility companies are increasingly supporting new technology initiatives that enable them to improve service delivery, increase efficiency, and reduce overall power demand.

In addition to appearing in this chapter, all utilities respondents in this chapter also appear in the sample for the energy and utilities sector in Chapter 10.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-

year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 39: Hospital Subsector Benchmarks
Chapter 39 provides benchmarks for hospitals. The 34 respondents in this subsector range in size from $50 million to over $80 billion in annual revenue. This category includes community hospitals, university hospitals, nonprofit hospitals, health clinics, healthcare systems, and regional healthcare providers.

Hospitals share complex payment and reimbursement arrangements and have strict IT security and privacy requirements. The subsector requires IT staff with specialized skills to manage patient medical records systems, mobile platforms, imaging, and other clinical systems with large data storage requirements. Hospitals also support many users who are not employees and have relatively high levels of spending on IT.

In addition to appearing in this chapter, all the hospital respondents also appear in the sample for the healthcare services sector in Chapter 12.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 40: Healthcare Clinics and Doctors' Offices Subsector Benchmarks
Chapter 40 provides benchmarks for healthcare clinics and doctors' offices. The 19 respondents in this subsector range in size from $50 million to around $200 billion in annual revenue. This category includes health clinics, urgent care, optometry chains, and even large retailers that have begun some basic healthcare operations.

Healthcare clinics share complex payment and reimbursement arrangements and have strict IT security and privacy requirements. The subsector needs IT staff with specialized skills to manage patient medical records systems, mobile platforms and imaging, and other clinical systems with large data storage requirements. Clinics also support many users who are not employees and have relatively high levels of IT spending.

In addition to appearing in this chapter, all the healthcare clinics respondents also appear in the sample for the healthcare services sector in Chapter 12.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of

metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 41: Professional Services Subsector Benchmarks

Chapter 41 provides benchmarks for professional services organizations. The 28 respondents in the sample range in size from a minimum of about $50 million to about $40 billion in annual revenue. This subsector includes firms that provide professional services, including legal, accounting, financial advice, consulting, marketing, and other services.

These organizations are characterized by a high percentage of knowledge workers who make extensive use of technology. Customer relationship management (CRM), professional services automation, project management, and knowledge management are important applications in this subsector. These organizations are often leaders in the adoption of SaaS and mobile applications. Please note that IT services providers, software companies, and value-added resellers are not included in the sample for this subsector, even though they often have professional services groups. Rather, we include such organizations in the IT services and solutions sector in Chapter 16.

In addition to appearing in this chapter, professional services providers also appear in the sample for the professional and technical services sector in Chapter 13.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 42: Technical Services Subsector Benchmarks

Chapter 42 provides benchmarks for technical services organizations. The 25 respondents in the sample range in size from a minimum of about $50 million to about $80 billion in annual revenue. This subsector includes firms that provide technical services, such as engineering, architectural, scientific, research, and other services.

These organizations are characterized by a high percentage of knowledge workers who make extensive use of technology. Customer relationship management (CRM), professional services automation, project management, document management, graphics systems, and knowledge management are important applications in this sector. These organizations are often leaders in the adoption of SaaS and mobile applications. Please note that IT services providers, software

companies, and value-added resellers are not included in the sample for this subsector, even though they may also provide technical services. Rather, we include such organizations in the IT services and solutions sector in Chapter 16.

In addition to appearing in this chapter, technical services providers also appear in the sample for the professional and technical services sector in Chapter 13.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 43: Construction and General Contracting Subsector Benchmarks

Chapter 43 provides benchmarks for construction and general contracting companies. The 22 respondents in the sample range in size from about $150 million to over $80 billion in annual revenue. This subsector includes commercial, residential, and industrial construction contractors, as well as engineering and infrastructure development companies.

These firms typically operate in project-based environments with a mix of field and office personnel. While not all employees use corporate IT systems, technology plays a critical role in supporting engineering design, procurement, scheduling, and project management. Geographic information systems (GIS) are also commonly used for site planning and infrastructure mapping.

Construction and contracting firms often face tight margins and complex regulatory requirements, which influence their IT investment strategies. Although their IT budgets are generally modest relative to revenue and head count, they prioritize tools that enhance operational efficiency and field communication, especially mobile solutions for on-site teams.

In addition to appearing in this chapter, construction and general contractors also appear in the sample for the construction and trade services sector in Chapter 15.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 44: Trade Services Subsector Benchmarks

Chapter 44 provides benchmarks for trade services companies. The 16 respondents in the sample range in size from a minimum of $50 million to over $40 billion in annual revenue. This subsector includes specialty contractors, oil field services providers, mining services companies, environmental services firms, and other businesses offering skilled trade services.

Trade services firms often operate in field-based environments where only a portion of employees regularly use corporate IT systems. These organizations typically require technology to support project management, scheduling, logistics, and back-office operations. Many are also significant users of geographic information systems (GIS) to support field operations and asset tracking.

Despite their operational complexity, trade services firms tend to maintain relatively small IT budgets in proportion to their revenue and workforce. However, they support a high number of mobile and smartphone users, reflecting the distributed and mobile nature of their workforces.

In addition to appearing in this chapter, trade services companies also appear in the sample for the construction and trade services sector in Chapter 15.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 45: Software and Technology Subsector Benchmarks

Chapter 45 provides IT spending and staffing statistics for the software and technology subsector. This category includes software companies, SaaS providers, and technology solutions companies. There are 25 organizations in the sample, ranging in size from around $50 million to over $60 billion in annual revenue.

Companies in this subsector leverage IT as part of their core competency and tend to invest in emerging technologies. They often have a large customer service component in their businesses and make use of sophisticated customer relationship management (CRM) systems. Their finance and accounting systems can have complex subscription or usage-based billing and revenue recognition needs. They usually have the need for professional services automation and project management systems. One important note: Our metrics for this subsector are for internal IT support only and not for the development or delivery of IT

products or services for sale to customers. Nevertheless, because they are often storing and processing customer information, IT services firms often have high levels of spending on IT security and cybersecurity. This is especially true if their customers include governments, financial institutions, retailers, or healthcare providers.

In addition to appearing in this chapter, respondents in this chapter also appear in the sample for IT services and solutions in Chapter 16 and the IT services and consulting subsector in Chapter 46, if they meet the definitions for those sectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 46: IT Services and Consulting Subsector Benchmarks
Chapter 46 provides IT spending and staffing statistics for the IT services and consulting sector. This category includes systems integrators, IT solution providers, business process outsourcing firms, managed services companies, IT consultants, and other providers of IT services and solutions. There are 20 organizations in the sample, ranging in size from around $50 million to over $20 billion in annual revenue.

Companies in this subsector leverage IT as part of their core competency and tend to invest in emerging technologies. They often have a large customer service component in their businesses and make use of sophisticated customer relationship management (CRM) systems. Their finance and accounting systems can have complex subscription or usage-based billing and revenue recognition needs. They usually have the need for professional services automation and project management systems. One important note: Our metrics for this subsector are for internal IT support only and not for the development or delivery of IT products or services for sale to customers. Nevertheless, because they are often storing and processing customer information, IT services firms often have high levels of spending on IT security and cybersecurity. This is especially true if their customers include governments, financial institutions, retailers, or healthcare providers.

In addition to appearing in this chapter, respondents in this chapter may also appear in the sample for IT services and solutions in Chapter 16 and the software and technology subsector Chapter 45, if they meet the definitions for those sectors.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of

metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 47: City and County Government Subsector Benchmarks
Chapter 47 provides benchmarks for city and county governments. This chapter concerns the IT workings of city or county governments and not individual agencies within larger governments (which can be found in Chapter 48). The 15 respondents in this subsector have annual operating budgets ranging from $50 million to around $5 billion.

City and county governments require information systems for nearly every aspect of their day-to-day operations and services. Yet they often lag behind other sectors in adopting new systems and technologies and upgrading existing systems. Asset management, geographic information systems (GIS), e-government applications, and specialized accounting systems can be important applications in this subsector. Information security, privacy, and disaster recovery also are important concerns. Their IT spending tends to be low to moderate in comparison to other sectors.

In addition to appearing in this chapter, all the city and county government respondents also appear in the sample for government organizations in Chapter 17.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 48: Government Agencies Subsector Benchmarks
Chapter 48 provides benchmarks for federal, state, and regional government agencies. This category includes public health agencies, courts and law enforcement agencies, organizations that provide IT services to government agencies, social service agencies, state parks, and other federal, state, and regional government units. The 15 respondents in the sample have operating budgets that range in size from about $50 million to about $70 billion.

Most government agencies rely heavily on IT to maintain information and deliver services. Nearly all employees use IT, and spending on IT can be considerably higher than spending by local government. Asset management, geographic information systems (GIS), e-government applications, and specialized accounting systems can be important applications in this subsector. Information security, privacy, and disaster recovery also are important concerns.

In addition to appearing in this chapter, the respondents in this subsector also appear in the sample for government organizations in Chapter 17.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 49: Logistics Subsector Benchmarks
Chapter 49 provides benchmarks for logistics providers. The 32 respondents in this sample range in size from about $50 million to over $80 billion. This subsector is comprises of logistics companies that transport goods, including refined petroleum distributors, national moving or courier companies, freight transportation companies, supply chain logistics providers, and other logistics companies.

These organizations require systems to track moving stock, manage inventory, and maintain flexible communications systems. Only a portion of the employees in this subsector use IT systems, and these capital-intensive organizations spend only a low-to-moderate amount on IT as a percentage of revenue. Because many of these firms are part of their nation's critical infrastructure, they also tend to spend more on IT security and cybersecurity.

In addition to appearing in this chapter, all the logistics providers also appear in the sample for transportation and logistics organizations in Chapter 14.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Chapter 50: Higher Education Subsector Benchmarks
Chapter 50 provides benchmarks for higher education institutions. This subsector includes public and private colleges and universities, research universities, business and medical schools, and for-profit institutions. The 20 respondents in the sample have annual revenues ranging in size from about $50 million to about $8 billion.

Most educational institutions have large campuses and need to network multiple sites, resulting in extensive investment in network infrastructure. They also have high desktop support requirements due to the presence of classroom and student lab systems. Back-office

systems for accounting, human resources, billing, and other administrative functions are typical, but they may have specialized applications to handle enrollment and student records. They also require specialized systems to support academic research programs. As a result, their IT spending tends to be higher than average as a percentage of revenue but low on a per-user basis. The per-user metric is largely the result of the need to support student users, who do not require as high a level of IT support as employee users.

In addition to appearing in this chapter, all respondents also appear in the sample for the education sector in Chapter 19.

Our sector and subsector benchmarks are based on three years of survey data. For benchmarking purposes, these statistics should be used in conjunction with our benchmarks by organization size in Chapters 3A, 3B, 3C, and 3D. These chapters provide a broader set of metrics for small, midsize, large, and very large organizations based on data from the current-year survey. We also provide an analysis of year-over-year trend data by sector in the Executive Summary in Chapter 1 and for the composite sample in Chapter 2.

Metrics in Composite and Organization Size Chapters

This section lists the metrics provided in Chapter 2 for the composite sample and in Chapters 3A, 3B, 3C, and 3D for small, midsize, large, and very large organizations, respectively. These chapters include 50 figures or tables, presented in 14 sections.

In section 1, we describe the key characteristics of the sample to establish a basis for comparison with other IT operations. These metrics are as follows:

- Organization size demographics, including revenue, employees, revenue per employee, and revenue per user

- IT spending demographics, including total IT spending, IT capital budget, and IT outsourcing budget

- IT infrastructure demographics, including the number of data centers, network sites, business applications, and ERP systems

- Key metrics of IT intensity, including ratio of users to employees, PCs per user, percentage of users with tablets, percentage of users with smartphones, users per network site, and percentage of application functionality from custom systems

- Percentage of IT spending devoted to ongoing support, growth, and business transformation

In section 2, we examine the amount of IT spending allocated to outsourcing. These metrics include:

- Percentage of IT budget spending for running, growing, and transforming the business

- Outsourcing as a percentage of IT budget

- Outsourcing allocation by type, including managed services, cloud infrastructure, and consulting services

- Cloud software subscriptions as a percentage of application spending

In section 3, we examine key budget priorities for IT organizations. These metrics include:

- Net trend for spending by IT initiative shows spending priorities by budget area, showing the net percentage of organizations planning to increase spending on artificial intelligence, data analytics/business intelligence, legacy systems, disaster

recovery/business continuity, data center automation, blockchain, IoT advanced networking, metaverse and VR/AR

- The importance of lowering costs versus improving service levels in the coming year

Section 4 presents metrics on total IT spending, which includes current-year IT capital and operational spending but excludes depreciation. These metrics include:

- Total IT spending as a percentage of revenue

- Total IT spending per user

- Total IT spending per PC

- Budget categories as average percentage of total IT spending, including spending on IT personnel, business applications, data center hardware/software, energy/utilities, IT facilities/floor space, cloud infrastructure, network infrastructure, IT security, voice/data carrier expenses, PCs/end-user devices, printers/printing, artificial intelligence, and other expenses

Section 5 presents metrics for IT operational spending. These metrics are as follows:

- IT operational spending as a percentage of revenue

- Percentage of organizations decreasing, maintaining, or increasing IT operational spending year over year

- IT operational budget percentage change from prior year

- Adequacy of current IT operational budget to support the business

- IT operational spending per user

- IT operational spending per PC

- Percentage of IT operational budget charged back to business units

- Budget categories as average percentage of IT operational spending, including spending on IT personnel, business applications, data center hardware/software, energy/utilities, IT facilities/floor space, cloud infrastructure, network infrastructure, IT security, voice/data carrier fees, PCs/end-user devices, printers/printing, artificial intelligence, and other expenses

■ Personnel as a percentage of IT operational spending at the 25th percentile, median, and 75th percentile

■ Depreciation as a percentage of IT operational budget

Budget Categories as Average Percentage of IT Operational Spending: (Example Only)

Category	Percentage
IT personnel	34.0%
Business apps	24.0%
Data center	10.0%
Energy/utilities	2.0%
IT facilities	3.0%
Cloud infrastructure	6.0%
Network	6.0%
IT security	5.0%
Voice/data	3.0%
End-user devices	5.0%
Printers/printing	2.0%
Other	0.0%

Not the Actual Data

Source: Avasant Research, 2024   *Figure 1-13*

Section 6 provides an analysis of spending that occurs outside of the IT budget and non-IT spending that sometimes appears in IT spending that we do not include.

Section 7 provides an analysis on IT operational spending per tower. These towers are aligned with the Technology Business Management (TBM) taxonomy. Metrics include:

■ Percentage of IT operational spending in the IT management tower

■ Percentage of IT operational spending in the business applications tower

■ Percentage of IT operational spending in the data center tower

■ Percentage of IT operational spending in the network tower

■ Percentage of IT operational spending in the end-user tower

■ Percentage of IT operational spending in the security and compliance tower

■ Percentage of IT operational spending in the delivery tower

Section 8 provides an analysis of IT capital spending, including:

- Percentage of organizations decreasing, maintaining, and increasing IT capital spending

- IT capital budget change from prior year

- IT capital budget as a percentage of the total IT budget

- Budget categories as average percentage of IT capital spending, including spending on IT personnel, business applications, data center hardware/software, energy/utilities, IT facilities/floor space, cloud infrastructure, network infrastructure, IT security, voice/data carrier fees, PCs/end-user devices, printers/printing, artificial intelligence, and other expenses

In section 9, we provide key metrics and trend data on IT staffing, including:

- Users per IT staff member

- Percentage of organizations increasing, maintaining, and decreasing IT staffing levels from previous year

- IT staff head count change from previous year

- IT staff turnover

- Annual training allocation per IT employee

- Contingency workers as a percentage of IT staff

- IT staff functions as average percentage of IT staff, including IT managers, IT finance/vendor management/procurement, project managers, clerical/administrative support, application developers, business analysts, data management, quality assurance/testing, DevOps engineers, database administration, server support, network support, communications support, web/e-commerce, IT security, help desk, desktop support, documentation, training, and process/standards, and other functions

IT Staffing Mix: (Example Only)

Category	Average Percentage of IT Staff
IT managers	9.0%
IT finance/vendor mgmt.	2.0%
Clerical/admin.	3.0%
Application developers	11.0%
Data management	8.0%
QA/testing	6.0%
DevOps	6.0%
Database administration	5.0%
Server support	7.0%
Network support	6.0%
Communications	3.0%
Web/e-commerce	3.0%
Help desk	8.0%
Desktop support	6.0%
Security	5.0%
Project managers	5.0%
Business analysts	4.0%
Doc., training, process/stds.	2.0%
Other	1.0%

Not the Actual Data

Source: Avasant Research, 2024   *Figure 1-14*

In Section 10, we provide key benchmarks for seven job functions:

- IT managers as a percentage of IT staff

- OS instances per server support staff member

- Network devices per network support staff member

- Applications per application developer

- PCs per desktop support staff member

- Users per help desk staff member

- Help desk tickets per end-user support staff member

Section 11 provides business application metrics, including:

- Business application spending as a percentage of IT operational spending

- Business application operational spending per user

Section 12 covers the following data center metrics:

- Processing workload by operating system, including IBM Mainframe, Unix, Linux, IBM i (formerly OS/400), Windows Server, and other OS

- Percentage of processing workloads by location: on-premises/data center, managed services providers, and public cloud

- Consolidated data center spending per user

- Consolidated data center spending per physical server

- Data center hardware/software spending as a percentage of IT spending

- Data center hardware/software spending per user

- Energy/utilities as a percentage of IT spending

- Energy/utilities spending per user

- Energy/utilities spending per physical server

- Cloud infrastructure services as a percentage of data center spending

- IT facilities/floor space as a percentage of IT spending

- IT facilities/floor space spending per user

- OS instances per physical server

- Users per physical server

Section 13 covers the following networking metrics:

- Consolidated network spending per user

- Network infrastructure as a percentage of IT spending

- Network infrastructure spending per user

- Network spending per network site

- IT security as a percentage of IT spending

- IT security spending per user

- Data/voice carrier spending as a percentage of IT spending

- Data/voice carrier spending per user

Section 14 covers the following end-user computing metrics:

- Consolidated end-user technology spending per user

- PCs/end-user device spending per user

- PCs/end-user devices as a percentage of IT spending

- Printer/printing as a percentage of IT spending

- Printer/printing spending per user

- Users per printer

The study reports the benchmarks in this chapter by organization size in Chapters 3A, 3B, 3C, and 3D.

A discussion of the methods used in this study is at the end of this chapter.

Metrics in Sector and Subsector Chapters

The sector chapters, Chapters 4–21, and the subsector chapters, Chapters 22–50, have 32 figures or tables.

In section 1, we describe the key characteristics of the respondents in this sector/subsector to establish a basis for comparison with other IT operations. These metrics are as follows:

- Organization-size demographics, including revenue, employees, revenue per employee, and revenue per user

- IT spending demographics, including total IT spending, IT capital budget, and IT outsourcing budget

- IT infrastructure demographics, including the number of data centers, network sites, business applications, and ERP systems

- Key metrics of IT intensity, including ratio of users to employees, PCs per user, percentage of users with tablets, percentage of users with smartphones, users per network site, and percentage of application systems functionality from custom systems

- Percentage of IT spending devoted to ongoing support, growth, and business transformation

In section 2, we examine the amount of IT spending allocated to outsourcing as a percentage of the IT budget.

Section 3 presents metrics on IT spending, which includes current-year IT operational and capital spending but excludes depreciation. These metrics include:

- Total IT spending as a percentage of revenue

- Total IT spending per user

- Total IT spending per PC

- Budget categories as average percentage of total IT spending, including spending on IT personnel, business applications, data center hardware/software, energy/utilities, IT facilities/floor space, cloud infrastructure, network infrastructure, IT security, voice/data carrier expenses, PCs/end-user devices, printers/printing, artificial intelligence, and other expenses

Section 4 provides metrics for IT operational spending, which includes depreciation. These metrics are as follows:

- IT operational spending as a percentage of revenue

- IT operational spending per user

- IT operational spending per PC

- Percentage of IT operational budget charged back to business units

- Budget categories as average percentage of IT operational spending, including spending on IT personnel, business applications, data center hardware/software, energy/utilities, IT facilities/floor space, cloud infrastructure, network infrastructure, IT security, voice/data carrier expenses, PCs/end-user devices, printers/printing, artificial intelligence, and other expenses

- Personnel as a percentage of IT operational spending at the 25th percentile, median, and 75th percentile

- Depreciation as a percentage of IT operational budget

Section 5 provides an analysis of spending that occurs outside of the IT budget and non-IT spending that sometimes appears in IT spending that we do not include.

Section 6 provides an analysis on IT operational spending per tower. These towers are aligned with the Technology Business Management (TBM) taxonomy. Metrics include:

- Percentage of IT operational spending in the IT management tower

- Percentage of IT operational spending in the business applications tower

- Percentage of IT operational spending in the data center tower

- Percentage of IT operational spending in the network tower

- Percentage of IT operational spending in the end-user tower

- Percentage of IT operational spending in the security and compliance tower

- Percentage of IT operational spending in the delivery tower

Section 7 provides an analysis of IT capital spending, including:

- IT capital budget as a percentage of the total IT budget

- Budget categories as average percentage of IT capital spending, including spending on IT personnel, business applications, data center hardware/software, energy/utilities, IT facilities/floor space, cloud infrastructure, network infrastructure, IT security, voice/data carrier expenses, PCs/end-user devices, printers/printing, artificial intelligence, and other expenses

In Section 8, we provide key metrics and trend data on IT staffing, including:

- Users per IT staff member

- IT staff turnover

- Annual training allocation per IT employee

- Contingency workers as a percentage of IT staff

- IT staff functions as average percentage of IT staff, including IT managers, IT finance/vendor management/procurement, clerical/administrative support, application developers, data management, quality assurance/testing, DevOps engineers, database administration, server support, network support, communications support, web/e-commerce, help desk, desktop support, security, project managers, business analysts, documentation, training, and process/standards, and other functions

Section 9 provides business application metrics, including:

- Business application spending as a percentage of IT operational spending

- Business application operational spending per user

Section 10 covers the following data center metrics:

- Processing workload by operating system, including IBM Mainframe, Unix, Linux, IBM i (formerly OS/400), Windows Server, and other

- Percentage of processing workloads by location, including on-premises/data center, managed services providers, and public cloud

- Consolidated data center spending per user

- Data center hardware/software spending as a percentage of IT spending

- Data center hardware/software spending per user

- Energy/utilities spending per user

Section 11 covers the following networking metrics:

- Consolidated network spending per user

- Network infrastructure as a percentage of IT spending

- Network infrastructure spending per user

- Network spending per network site

Section 12 covers the following end-user computing metrics:

- Consolidated end-user technology spending per user

- PCs/end-user device spending per user

- PCs/end-user devices as a percentage of IT spending

Appendix

The Appendix includes common terms and definitions used in our annual survey and in this study. It also includes a detailed definition for all IT spending and staffing categories. The Appendix concludes with a brief discussion of the statistics used in this study.

Common Terms and Definitions

This section provides definitions for some important terms used in our annual survey.

Business Applications: In counting business applications, we count systems, not individual programs. We count large, multifunction suites, such as ERP, CRM, supply chain, medical record systems, and other integrated suites. We include business applications supported fully or partially by the IT organization, including SaaS applications if the IT organization provides any administrative support. For ERP, we count each major subsystem, such as finance or HR, as a separate system. Business applications do not include database management systems, applications for managing infrastructure, or application development tools. Moreover, we do not count personal productivity applications or utilities, such as Microsoft Office, Adobe Acrobat, antivirus, or web browsers.

Cloud Infrastructure: Our definition refers to public cloud or outsourced private cloud infrastructure services, not including cloud applications (SaaS) and not including on-premises use of cloud infrastructure technologies, such as server virtualization or containers.

Custom-Developed Systems: This includes all custom-written or in-house developed systems, plus any modifications or enhancements to commercial software packages.

Data Center: A data center is a physical location where computer servers, storage, mainframes, and associated operating system software are maintained/operated by full-time operations staff, including co-location facilities. We do not count locations that only have file, print, or email servers. We also do not include disaster recovery facilities unless they also operate as data centers during routine business.

Employees: Our definition includes full-time employees, managers, executives, part-time employees, temporary employees, and seasonal workers, whether paid as employees or as contingency or contract workers. Employees are counted as full-time equivalents.

IT Spending: IT spending in our study refers to all IT expenditures incurred for the internal support of the business. It includes the following major types of IT spending:

- IT Operational Spending includes all IT expenses for the current fiscal year, plus depreciation. IT operational spending includes IT spending within the IT budget plus

any IT spending within the user department budgets. Our definition *includes any corporate IT allocations or shared IT services amounts.*

■ IT Capital Spending includes all IT spending that is treated as capital expenditures in the current fiscal year. IT capital expenditures typically flow through to the IT operational budget as depreciation over several years.

■ Depreciation includes the depreciation expense for IT investments, whether or not the depreciation is charged to the IT department. For organizations that record IT investment depreciation somewhere apart from the IT operational budget, we asked our survey respondents to put such amounts back into the IT operational budget.

■ Total IT Spending is the sum of IT operational spending and IT capital spending on a cash basis. It does not include depreciation. It does include any IT spending that is within user department budgets.

Network Site: A network site is a physical location, such as an office building, warehouse, or campus, that is connected to the organization's network and supported by its IT organization. An organization housed on a single campus has one network site. We do not count individual users connecting through the internet or virtual private networks as network sites.

Network Device: These devices encompass routers, firewalls, network appliances, and other devices that make up the network infrastructure. We do not count "edge devices" such as PCs, printers, servers, storage devices, data collection devices, ATMs, or sensors.

Run, Grow, or Transform: Running the business means ongoing support for the current level of business ("keeping the lights on"). Growing the business means enabling business growth or improved profitability. Transforming the business means giving the business a new strategic advantage.

Physical Servers: These include all types of physical servers, from mainframes to low-end servers. We include those in on-premises and co-location data centers where a full-time operations staff maintains the servers.

Ongoing Support: This refers to activities needed to operate existing systems, including routine maintenance and support for normal business growth.

Operating System (OS) Instances: These are running instances of operating systems, including OS instances running natively on servers or virtual machines. We include all types of operating systems, whether managed internally or by service providers. These may be running in on-premises or co-location data centers, hosted by managed services providers, or in the

cloud. We do not count the virtualization software itself (for example, VMware) as an OS instance.

Outsourcing: We define IT outsourcing as contracting with a service provider to perform a function that would otherwise be performed in-house. An IT function can be fully outsourced or partially outsourced. Outsourcing includes any work managed by the service provider under an outsourcing contract. It does not include the use of temporary workers under the day-to-day supervision of the IT organization for the purpose of staff augmentation.

Personal Computer (PC): The term PC includes all physical desktops/laptops, workstations, thin clients, kiosks, handheld data-collection devices (other than tablets and smartphones), ATMs, and point-of-sale systems. We include employee-owned desktops/laptops if the IT organization supports them, and convertible tablets if they are laptop replacements. However, we do not include dumb terminals, tablets that do not replace laptops, or smartphones in our definition.

Revenue: Revenue in our survey corresponds to the revenue for the business that is being supported by the IT organization responding to our survey. If the IT organization supports only certain business units, respondents were instructed to report the revenue for those business units. Healthcare providers report operating revenue (not gross patient revenue). Government and nonprofit organizations report their total operating budget.

Smartphones: Smartphones include devices that potentially give employees access to mobile applications in addition to email, voice, and text communications. Our survey counts both company-owned and employee-owned smartphones, as long as they receive support from the IT organization.

Tablet Computers: These include all tablet computers, whether employee-owned or company-owned, as long as they receive support from the IT organization.

Users: Our definition of users includes individuals who use the organization's IT systems. Users can be employees, contractors, contingency or temporary workers, agents, partners, and other nonemployee users that the IT organization supports. Our definition, however, specifically excludes website users. Not all employees need to be users, and not all users need to be employees. Therefore, the number of users may be greater than or less than the number of employees.

IT Spending Category Definitions

The definitions in this section apply to operational, capital, and total IT spending categories. Please note the following special considerations in how we assign IT spending to categories:

- In the IT operational budget, all personnel costs go into the personnel line item.

- In the IT capital budget, capitalized labor is charged to the most appropriate category. For example, capitalized labor for application development is in application software.

- Most outsourcing costs are allocated to the IT budget as if the function were being performed in-house. Fees for services that primarily replace personnel are primarily personnel expenses.

- Fees for SaaS are in the application software category.

- Fees for public cloud infrastructure services are in the cloud infrastructure category.

We make certain adjustments to the IT budget so that our study can account for all IT spending. Business units sometimes pay for engineering systems, PCs, voice/data service, SaaS applications, IT security services, website infrastructure/e-commerce, or specialized business application systems directly out of their budgets. We include these expenses within our definition of IT spending. We also include clinical systems for healthcare providers, point-of-sale systems for retailers, and ATM systems for banks in IT spending.

On the other hand, sometimes expenses show up in IT budgets that we do not include within our definition of IT spending. These items include spending on industrial control systems, robotics, or material handling systems. When using our metrics for benchmarking purposes, organizations should not include these expenses in their IT spending. We also exclude IT product or service costs for external customers of the business. (In other words, for IT products, services, and consulting firms, our benchmarks should be used for internal IT support only.)

The remainder of this section describes the budget categories in detail, with categories organized by group. In some cases, the category and group are one and the same, such as for the IT Personnel Expenses Group. In other cases, the group contains several categories, such as the Data Center Expenses Group.

IT Personnel Expenses

The IT personnel category includes all personnel costs, including compensation, taxes, benefits, and recruiting and training fees. The cost of contingency, contract, or temporary IT

workers is charged to this category. Also, most outsourcing expenses for services that replace the need for IT staff belong here.

Application Software Expenses
The application software category includes software license and maintenance fees, acquisition costs, and development costs for business applications and associated databases and middleware. It also includes subscription costs for SaaS or hosted applications.

Data Center Expenses
This group includes all expenses for data center systems, software, services, and facilities.

- **Data Center Hardware/Software:** This category includes servers, storage, mainframes, and associated operating system software. It also includes data center utility programs, automation systems, storage management, systems management, and any centralized print services. Data center managed services and application hosting also belong in this category.

- **Energy/Utilities:** This category includes all data center utility costs for power and cooling.

- **IT Facilities/Floor Space:** This category includes the cost of buildings, rent, property taxes and insurance, and corporate facilities charges.

Cloud Infrastructure
This includes public and outsourced private cloud infrastructure spending. It does not include data center managed services (which should be spread across data center hardware and software, and IT personnel expenses). This category does not include cloud applications (SaaS), which belong in application software.

Network Expenses
This group includes all expenses for network and communications services, software, and hardware, as well as expenses related to securing IT networks.

- Network Infrastructure: This category includes all network and communications systems' hardware and software. Communications systems include telephone, email, messaging, unified communications, videoconferencing, mobile device management systems, and related hardware and software.

- IT Security: This category includes acquisition and maintenance costs for security hardware, software, and services such as security audits, assessments, testing, and managed security services.

■ Voice/Data Carrier Expenses: This category includes telecom and data communications carrier service fees for all types of service, including long-distance and wireless service for all business units. It also includes charges for managed and cloud-based telecom and data communications services.

End-User Technology Expenses

These categories include expenses for hardware, software, and systems assigned to employees or workgroups.

■ PCs/End-User Devices: This category includes expenses for PCs and other end-user computing devices, including laptops, tablets, thin clients, smartphones, and terminals. It also includes desktop operating systems, desktop applications, and maintenance contracts or warranties. Fees for desktops as a service also go here.

■ Printers/Printing: This category includes acquisition, leasing, and maintenance costs for all printers, copiers, scanners, plotters, and related consumables. It also includes managed print services.

Artificial Intelligence

This includes expenses for artificial intelligence that is not embedded inside existing software. This would include computer vision, natural language processing, machine learning, deep learning, AI assistants, and co-pilots.

Other Miscellaneous Expenses

This category includes miscellaneous expenses, travel and entertainment expenses, data services, and expenses unique to specific organizations.

How We Define IT Staffing Categories

Our staffing ratio reports provide multiple metrics designed to assess staffing requirements for specific IT functions. In our annual survey, we divide IT staff into 19 categories. Organizations should refer to these category definitions to better understand how to categorize IT staff members for the purpose of benchmarking. These categories are designed to cover every IT function at a broad level. The categories are also organized into groups, which can be useful in determining how to categorize IT staff members.

IT staff members include employees as well as contingency or temporary workers who work under the supervision of the IT organization. In our IT staffing metrics, we adjust the IT staff member head count to account for outsourcing.

IT job functions are defined as follows:

IT Management Group

The IT Management Group includes IT executives and managers, IT finance and vendor management personnel, project managers, and administrative support personnel.

- IT Managers and Executives: IT managers are individuals whose primary job function is to manage people. We group all IT management levels into a single job function, including IT executives. First-level managers who are primarily "doers" (that is, managers in name only) are not counted as managers but rather fall under the function that they supervise.

- IT Finance, Vendor Management, and Procurement: These are individuals whose primary job function within the IT organization is related to finance, accounting, budgeting, procurement, vendor contracts, or vendor management.

- Administrative Support: Clerical/administrative personnel are individuals who support IT managers and other IT staff functions.

Application Group

The Application Group includes application developers as well as other IT staff who support the development, maintenance, and use of enterprise business applications and web systems.

- Application Developers, Application Support, Systems Analysts, and Architects: These job functions include personnel involved with the development and management of business applications. They include application developers and support personnel, systems analysts, and solutions architects. This category also includes enterprise architects. It does not include business analysts or database administrators, who belong to their respective categories.

■ Data Management, Data Analytics, and Business Intelligence: These individuals design, develop, architect, and model data schemes and databases for the organization. They may also design the organization's data warehouse and business intelligence systems and analyze information maintained by such systems. This category does not include database administrators, who belong to the database administration category.

■ Quality Assurance and Testing: These are individuals who are part of a dedicated quality assurance or testing function. It does not include individuals who perform testing as part of their other job responsibilities, such as application developers who also perform their own unit testing.

■ DevOps Engineers: These are individuals who establish and maintain DevOps tools and processes along with various development, test, and production environments. It does not include software developers who merely use these tools.

Data Center and Cloud Infrastructure Group
This group includes job functions that are accomplished by infrastructure support personnel responsible for maintaining servers, mainframes, storage, databases, and data center facilities.

■ Database Administrators: Database administration and support personnel are responsible for maintaining, updating, modifying, and backing up database management systems.

■ Server Support Staff: All personnel who support the server and storage infrastructure, whether data center or cloud infrastructure, including systems administrators, systems programmers, systems engineers, storage administrators, cloud architects, and facility engineers. It also includes computer operators, job schedulers, production control personnel, disaster recovery administrators, and other ancillary functions in the data center.

Network and Communications Group
This group includes job functions that comprise personnel responsible for maintaining data and voice networks and email, messaging, videoconferencing, and unified communications systems.

■ Network Support Staff: This includes all network administration, engineering, architectural, and support positions for both data and voice network infrastructure.

■ Email/Messaging/Communications Support Staff: This includes engineers, specialists, and administrators who manage email, messaging, videoconferencing, unified communications, and other communication systems.

■ Web/E-Commerce Staff: This includes web developers, designers, administrators, and other individuals who work on the company's public websites, as well as those who maintain intranet sites. They also include personnel who are dedicated to e-commerce activities, such as electronic data interchange (EDI) specialists.

End-User Support Group
This group includes most end-user support functions, as well as training and documentation.

■ Help Desk: This includes help desk personnel who provide first-contact support to end users, typically by phone, email, or other forms of remote communication. It does not include desktop support personnel.

■ Desktop Support: This includes technical support staff members who install, configure, and maintain operating systems and applications on PCs and carry out other PC support functions such as troubleshooting and repairing network connectivity issues, migrating user data, installing peripherals, and responding to user problems that the help desk is unable to resolve. Desktop support may be handled remotely or in the field.

Security Group
This group includes those whose primary role is security.

■ Security Professionals: These are individuals whose primary responsibilities include security policy and procedures, security compliance, and security audits.

Delivery Group
This group includes primarily business delivery functions, as well as training and documentation.

■ Project Managers: These are individuals who are part of a formal project management office or whose primary job function is project management. It does not include individuals who manage projects in addition to their primary job responsibilities.

■ Business Analysts: These are individuals whose primary job function involves directly interacting with user business functions to gather user requirements, define or design business processes using information systems, and serve as liaisons between users and IT. This category also includes customer relationship personnel who represent the user community to the IT group and ensure IT systems are effectively used by the organization.

■ IT Standards, Training, and Documentation: This category includes IT staff members who establish and improve IT service management (ITSM) processes as well as those responsible for training and documentation.

Other Positions

We include IT staff in the "other" category if they perform functions not typically found in an IT organization.

Statistical Notes

Statistics are useful for summarizing data and analyzing trends. To evaluate the statistical findings in this study, it is useful to understand a few basic concepts and definitions.

Central Tendencies

One method frequently used to summarize how values are distributed within a sample is to identify where the "center" of all the responses falls. This center can be identified in various ways:

■ The median is the halfway point: half of the response values fall below this level, and the other half is above.

■ The mean is the sum of all responses divided by the number of responses. The mean is also known as the average.

■ The mode is the value that occurs most frequently in a collection of responses. Our study does not report the mode for any of our statistics.

Percentiles

IT benchmarks are often presented as means or averages. In the study, most metrics are reported as percentiles. We present values at the 25th percentile, 50th percentile (median), and 75th percentile. A percentile is the value below which a given percentage of cases fall. For instance, if we report that the IT staff head count is increasing by 1% at the 25th percentile, this means that the lowest one-quarter of respondents are increasing their head count by 1% or less.

We believe percentiles are more useful as benchmarks than the mean average. In most spending and staffing categories, there are organizations that have unusually high spending or staffing. These outliers can pull up the mean average. Another way to view this is that the distribution of values is not normal, and the mean average will be higher, or in some cases lower, than the middle value or median. The median value is often more representative of the typical organization than the mean.

More importantly, percentiles present a range within which typical spending or staffing falls for the survey population. Half of the organizations fall between the 25th percentile and 75th percentile, and IT organizations that fall within the range can determine that their spending or staffing is similar to other organizations. The difference between the 25th and 75th percentiles also reveals the amount of variation within the population. The narrower the variation, the more useful a benchmark is as a guide.

In some cases, we do present mean averages. We present averages when we want to rank responses or present responses as a portion of the total. For instance, we use averages when we rank top IT priorities or determine the percentage of organizations that are increasing or decreasing spending. We also use averages to assess the IT spending mix where each line item is shown as a percentage of the total.

Survey Methodology

This section describes our overall process for collecting and analyzing the survey data and the characteristics of the survey participants.

Sample Selection and Process

The survey was conducted from January to June 2025. We identified and selected participants by making solicitations to specific organizations in the US and Canada that met our criteria for organization size and industry sector. The job position of each survey respondent was evaluated to ensure that each would be knowledgeable and likely to have access to the organization's IT spending and staffing metrics. We then reviewed the applicants in terms of their industry sector and organization size to ensure that they were qualified to participate.

Qualified participants were offered two ways to respond to the survey: an online version and a PDF version. As the survey progressed, we monitored response volume by industry and organization size and adjusted our survey solicitation activities accordingly to ensure that the stratification of the survey sample was within acceptable bounds. This is an important step that allows meaningful comparisons to be made with previous years of this study.

At the end of the survey period, we reviewed all survey responses and conducted follow-up interviews with respondents in cases where answers were incomplete, inconsistent, or outside normal ranges, or where responses otherwise failed our validation tests. We corrected survey responses where appropriate. In cases where the respondent would not or could not provide meaningfully consistent information, we dropped the response from our sample to protect the integrity of our survey.

Finally, survey results were loaded into a statistical model to produce the analysis that appears in this study.
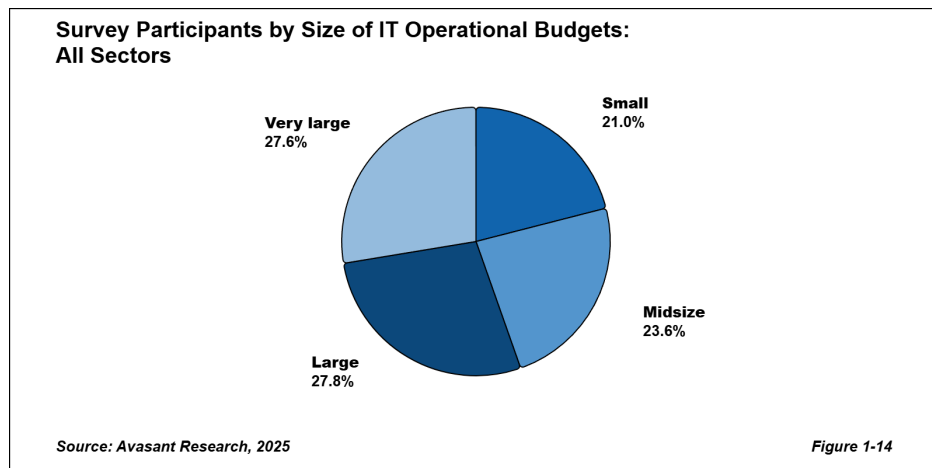
Survey Participants

There were 309 IT organizations in the US and Canada that participated in our survey this year. The sample was stratified into four categories of organization size:

■ Small organizations have IT operational budgets of less than $10 million

■ Midsize organizations have IT operational budgets of $10 million to less than $100 million

■ Large organizations have IT operational budgets of $100 million to less than $500 million

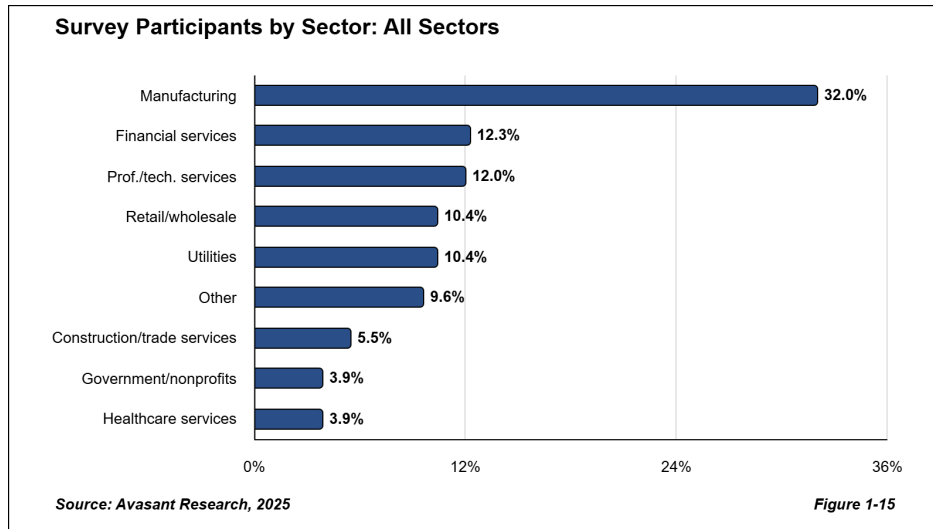■ Very large organizations have IT operational budgets of $500 million and greater

To maintain the validity of certain spending and staffing ratios, we do not allow organizations to participate unless they have at least $50 million in annual revenue or IT operational budgets of at least $1 million.

In the case of public sector organizations, respondents were instructed to use the total organizational operating budget in place of revenue.

As shown in Figure 1-14, small companies comprise 21.0% of the survey respondents; midsize organizations also comprise 23.6%. Large organizations are 27.8% of the sample, and very large organizations are 27.6%.

**Survey Participants by Size of IT Operational Budgets:
All Sectors**

**Very large
27.6%**

**Small
21.0%**

**Midsize
23.6%**

**Large
27.8%**

Source: Avasant Research, 2025

Figure 1-14

The percentage of respondents in each industry sector is shown in Figure 1-15.

Survey Participants by Sector: All Sectors

Sector	Percentage
Manufacturing	32.0%
Financial services	12.3%
Prof./tech. services	12.0%
Retail/wholesale	10.4%
Utilities	10.4%
Other	9.6%
Construction/trade services	5.5%
Government/nonprofits	3.9%
Healthcare services	3.9%

Source: Avasant Research, 2025   *Figure 1-15*

Please refer to the chapter descriptions earlier in this executive summary for a description of each industry sector and subsector.

Custom Benchmarking Services

Readers are encouraged to analyze the data within this study and use it as a basis for benchmarking their own IT spending, staffing, and technology adoption. For those organizations that would like assistance in this effort, Computer Economics offers a custom benchmarking service in which we gather metrics for the target organization and compare them against the data collected in this study.

The deliverable from a custom benchmarking exercise is a report that triangulates the metrics from the target organization against the benchmark data by industry sector and organization size, as well as against the composite sample. Preliminary observations about potential causes of variation from the benchmark and directions for further inquiry are also provided. Contact us for a sample of the final presentation that is delivered as part of this service.

Organizations request custom benchmarking services from Computer Economics for a variety of reasons:

- To take advantage of the experience and resources of Computer Economics to more quickly and accurately prepare a benchmark evaluation

- To obtain the perspective of Computer Economics as a neutral third party for evaluating the spending, staffing, and technology utilization of an organization

- To evaluate the spending and staffing ratios of a potential corporate acquisition or investment target, as part of a due diligence exercise

Computer Economics can also serve as a trusted third party to prepare a custom benchmarking study for a group of companies in a more narrow sector—even between competitors—to allow participants to benchmark their IT spending, staffing, and technology utilization without revealing the details of their own metrics to the other participants. As with all our surveys, all information gathered by Computer Economics is held in strict confidence and is only revealed in aggregate in the survey results.

For more information about our custom benchmarking services, or to obtain a price quote, please visit our website at avasant.com/research/computereconomics.