



TransGrid

**TransGrid Revenue Proposal
2018/19 – 2022/23**

Appendix P

CEB:

**IT Benchmarking of Global
Businesses**

CEB IT Budget Benchmark Report

Prepared for:
Transgrid

October 2016

www.cebglobal.com

CEB IT Leadership Council For Midsized Companies

<https://www.cebglobal.com/member/it-midsized/home.html>

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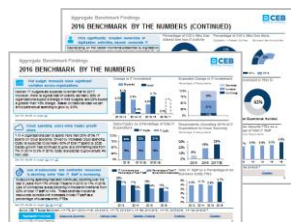
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A GUIDE TO USING THIS REPORT

Aggregate Benchmark Findings

- 1 Review key trends across IT organizations from this year's CEB IT Budget Benchmark in the **Aggregate Benchmark Findings** section.
- [Pages 7-9](#)



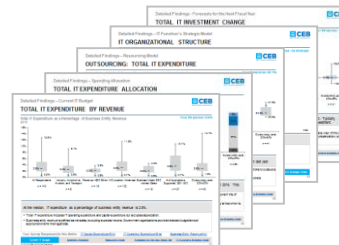
Executive Summary

- 2 See a topline overview of your performance on key metrics and a list of CEB resources to support next steps in the **Executive Summary**.
- [Pages 10-23](#)



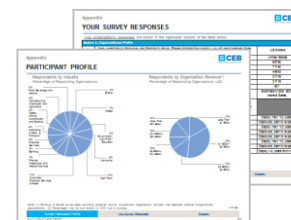
Detailed Findings

- 3 Get a granular view of the full metrics framework against peers aligned to key budgeting decisions in the **Detailed Findings Section**.
- [Pages 29-74](#)



Appendix and Your Survey Responses

- 4 See the full participant profile and see answers to specific questions provided by your organization as an input to this report in the **Appendix Section**.
- [Pages 75-102](#)



Detailed Findings: Compare Your...

Current IT Budget

How much your IT organization is spending in 2016 (e.g., IT Expenditure, Capex, and Opex as a Percentage of Revenue)

Spending Allocation

Where your IT organization is spending in 2016 (e.g., spending on maintenance versus innovation, investment in select digitization opportunities)

Resourcing Model

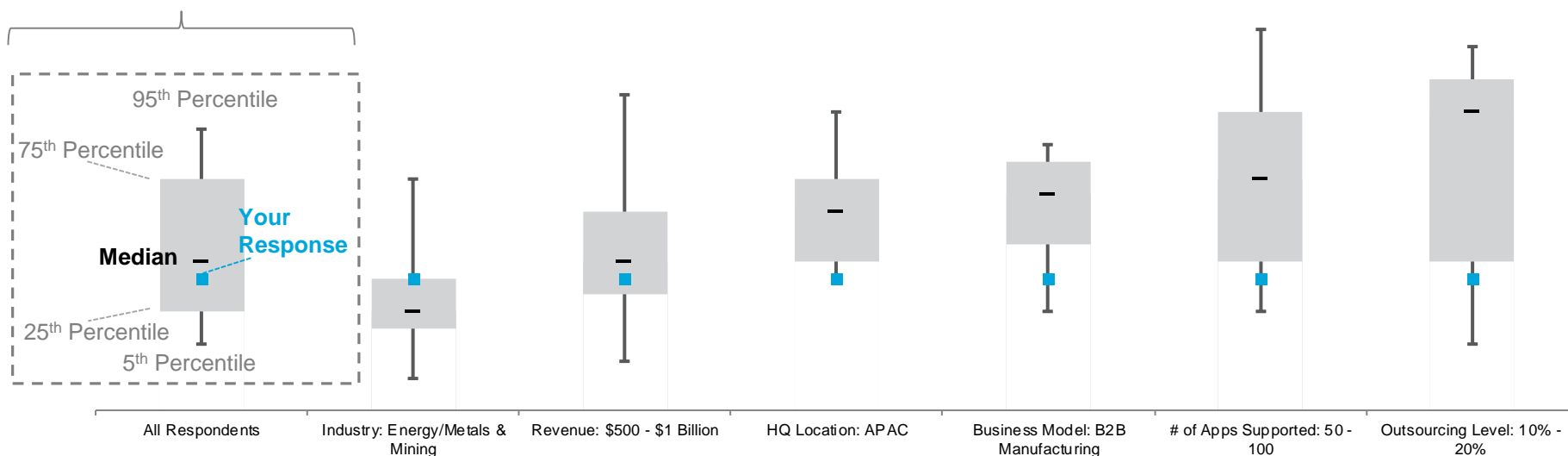
How your IT organization is resourced through staffing and outsourcing (e.g., staffing ratios, outsourcing by IT sub-function, cloud spending for SaaS and IaaS)

Forecasts for the Next Fiscal Year

Expected change for 2017 in spending and staffing levels (e.g., Expected Change in IT Capex, Opex, and staffing, 2016-2017)

A GUIDE TO USING THIS REPORT: HOW TO READ RESULTS

Box plots are used throughout this report to display the range of responses for a metric, allowing you to see your value compared to the values of nearly all other respondents. To minimize the impact of data that fall significantly outside of the typical range, we provide the middle 90% of responses, from the 5th to the 95th percentile, rather than the full dataset from the minimum to the maximum.



Your Survey Responses: To make it easier for you to refer to the answers you provided in the survey, we have provided links to your responses to specific questions that make up each metric in the report. The links will direct you to your responses in the Appendix. Example: Your Survey Responses for this Metric: [IT Capital Expenditure\(B1b\)](#) [IT Operating Expenditure\(B1a\)](#) [Business Entity Revenue\(A4\)](#)

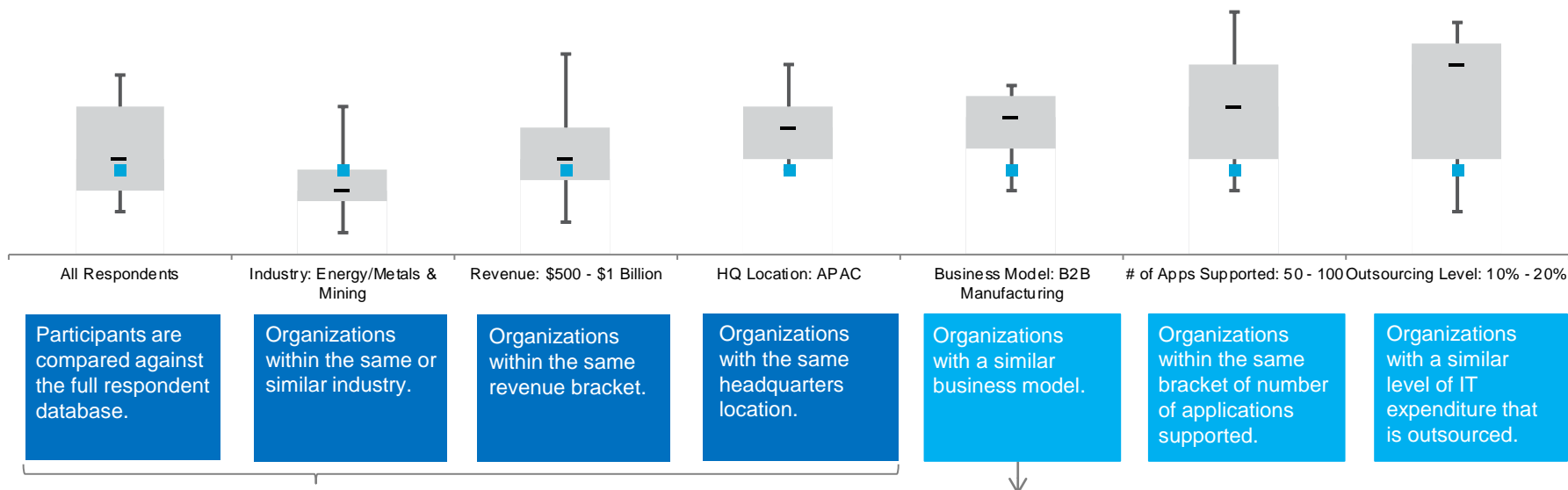
Glossary: [A full list of the key terms](#) used in this year's survey and report are included in the [Appendix](#) on pages 76 - 102.

Accessing Links: Throughout this report, there are links to other sections of the report as well as to related CEB IT resources. To access these links, click on the link while in full screen mode or right click on the link and select "Open Hyperlink."

A GUIDE TO USING THIS REPORT: HOW TO READ RESULTS

Key Peer¹ Benchmark Comparisons Groups

Data Are Illustrative



The Executive Summary section, which provides a topline overview of your performance on key metrics contains benchmarks for your industry, revenue, and regional peers. The Detailed Findings section contains benchmarks for all peer groups. You can navigate to the additional peer benchmarks from the Executive Summary using the button shown below, which you will be able to find on the upper right of each page. Simply click on the button while in full screen mode or right click on the button and select "Open Hyperlink."



Respondents selected the predominant business strategy of their company from the following options:

- **B2B Services:** Sell business services/ information/ non-physical technology to businesses/ institutions - not individual consumers
- **B2B Manufacturing:** Sell raw materials/ industrial parts/ physical technology that will be transformed into finished products and only to businesses/ institutions - not individual consumers
- **B2C Direct Sales:** Primarily sell goods/ services directly to individual consumers - not businesses/ institutions
- **B2C Indirect Sales:** Primarily sell goods/ services to individual consumers - not businesses/ institutions - and sales are through thirdparty retailer, distributor, channel, franchisee
- **B2C/B2B Hybrid:** 50% of sales are to individual consumers and 50% are to businesses/institutions

¹A Note on Data Confidentiality: Many of the data contained in this report are of a highly sensitive nature, and as such, are only presented in aggregate format. Moreover, to ensure data confidentiality, we are only able to present benchmark data when *at least five organizations* from a benchmark group have responded to a particular question.

Aggregate Benchmark Findings

2016 BENCHMARK BY THE NUMBERS

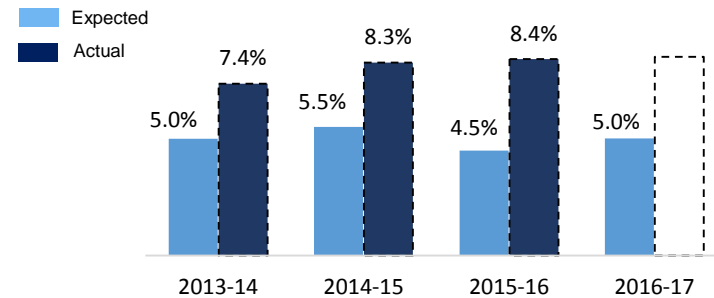


1. IT Spend is expected to increase for 2017, consistent with previous years' conservative growth projections.

IT spend is forecasted to grow a modest 5% for next year. However, when we compare actual spending with forecasts, total IT investment increased by closer to 8% at the median since 2013.

See full details on page [13](#).

Change in IT Investment

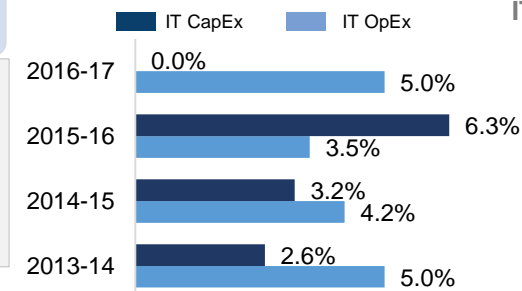


2. Allocation of IT budget shifts from Capital to Operating Expenditure as cloud spending rises.

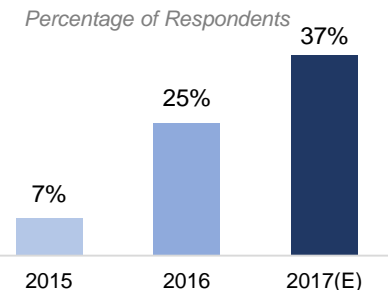
CapEx is expected to remain flat for 2017, as the business takes on more responsibility for technology spend. At the same time, OpEx is forecasted to increase by 5% in 2017 as over a third of companies plan to spend 20% of their total IT budget in the cloud.

See full details on pages [15](#), [16](#), and [20](#).

Expected Change in CapEx and OpEx



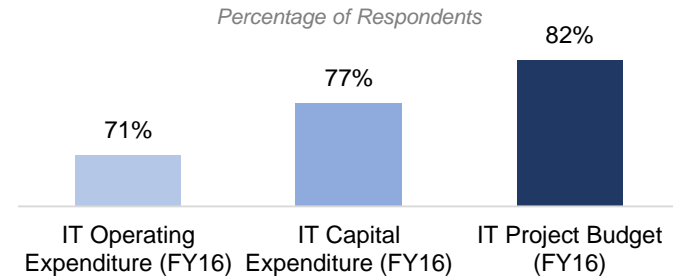
Respondents Allocating 20+% of IT Expenditure to Cloud Sourcing



3. A dynamic business and IT landscape coupled with unplanned demand promote budget flexibility.

Organizations seek new ways to accelerate IT's clock speed - by embracing Agile methodologies, implementing DevOps and moving more technology to the cloud. Accordingly, across project budgets, CapEx and OpEx, 3 out of 4 respondents describe budgets as flexible or very flexible.

Respondents with a Flexible Budget



Source: CEB IT Budget Benchmark. n = 196, 2012-2013; n = 255, 2013-2014; n = 311, 2014-2015 ; n = 285, 2015-2016; n = 236, 2016-2017

2016 BENCHMARK BY THE NUMBERS (CONTINUED)

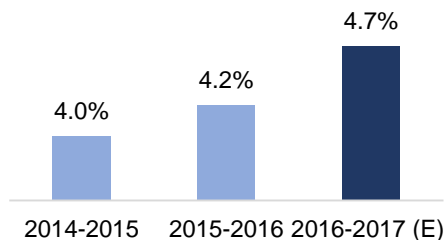


4. Consistent scrutiny around cybersecurity translates directly into risk and security investments.

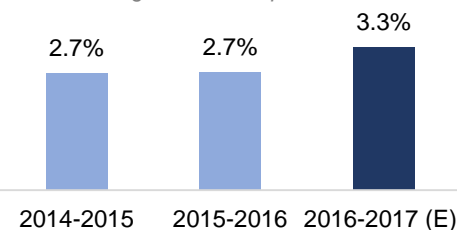
IT organizations anticipate spending 4.7% of the IT budget on information security while increasing security headcount to 3.3% of total IT staff. This reflects a relative gain from the 4% spend and 2.7% headcount allocations from just 2 years ago.

See full details on pages [51](#) and [63](#).

Percentage of IT OpEx Allocated to Information Security



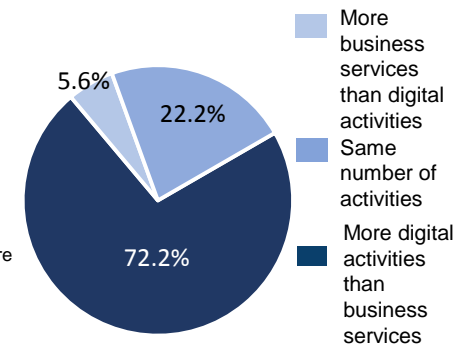
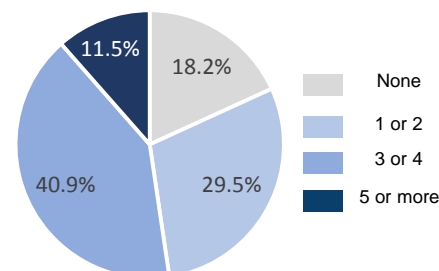
Information Security FTEs as a Percentage of Total IT Staff
Average Across Respondents



5. CIOs broaden ownership of non-IT activities, with a greater emphasis on digitization.

Capitalizing on the career moments presented by digitization, more CIOs are expanding their roles beyond corporate IT. In 2016, 72% of CIOs own more digitization-related activities (e.g., Digital strategy, Analytics, Online Platforms) than business services (e.g., Procurement, Supply Chain, Shared Services).

CIO Ownership of Non-IT Activities
Percentage of Respondents who own



Source: CEB IT Budget Benchmark. n = 196, 2012-2013; n = 255, 2013-2014; n = 311, 2014-2015 ; n = 285, 2015-2016; n = 236, 2016-2017

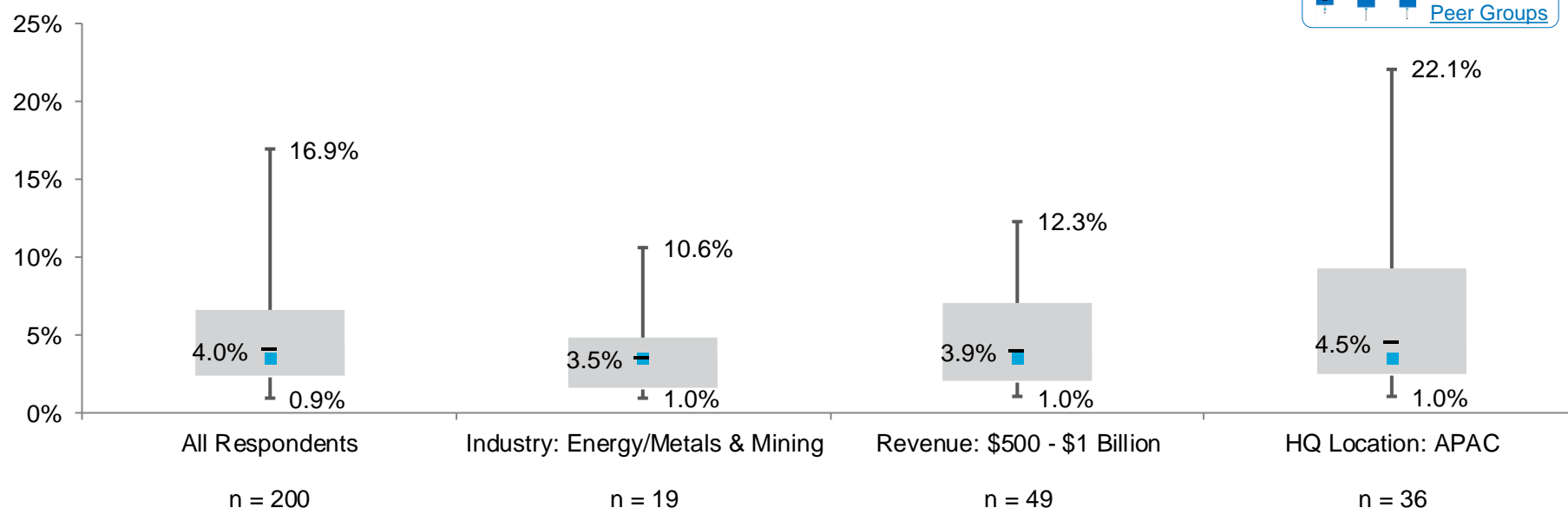


Executive Summary

- Key Findings
- Your Metrics Key Takeaways
- How CEB Can Help: Additional CEB Resources

TOTAL IT EXPENDITURE BY REVENUE

Total IT Expenditure as a Percentage of Business Entity Revenue
2016



Note: (1) Total IT expenditure includes IT operating expenditure and IT capital expenditure but excludes depreciation. (2) Business entity revenue is defined as net sales, excluding expected returns. Government organizations provided enacted budget/annual appropriations for their agencies.

At the median, IT Expenditure as a percentage of Revenue is 4%, with the typical value ranging from 2% and 6%.

- This is up from IT Expenditure as a percentage of Revenue in 2015 (3.3%).

Your Survey Responses for this Metric: [IT Capital Expenditure\(B1b\)](#) [IT Operating Expenditure\(B1a\)](#) [Business Entity Revenue\(A4\)](#)

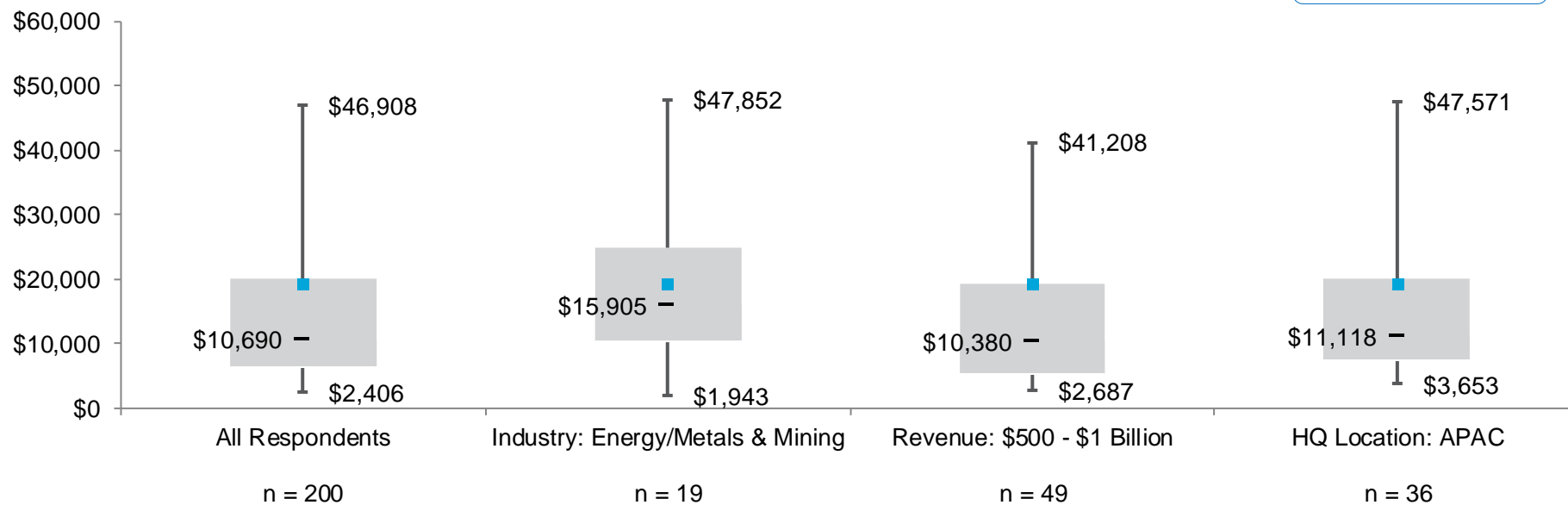
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TOTAL IT EXPENDITURE BY TOTAL BUSINESS ENTITY FTEs

Total IT Expenditure per Business Entity FTE
USD, 2016

Your Response: \$19,297

   Additional Peer Groups



Note: (1) Total IT expenditure includes IT operating expenditure and IT capital expenditure but excludes depreciation. (2) A full-time equivalent (FTE), as determined by the organization's standard working hours (typically 40 hours per week), can represent either a staff member working full-time or the aggregation of part-time employees, such as two part-time employees each working 50% of standard hours.

Use this metric to help calibrate spending per individual employee across the business.

- The number of business entity FTEs may be **higher** than the number of IT users if many company employees do not regularly access official technologies and systems (e.g., sales clerks for retail companies). The number of business entity FTEs may be **lower** than the number of IT users if the enterprise offers IT support to many contractors or consultants who are not officially company employees.
- See [Total IT Expenditure per IT User](#) for a more accurate unit measure of IT Expenditure if either scenario above applies to your organization.

Your Survey Responses for this Metric: [IT Capital Expenditure\(B1b\)](#) [IT Operating Expenditure\(B1a\)](#) [Business Entity FTEs\(A5\)](#)

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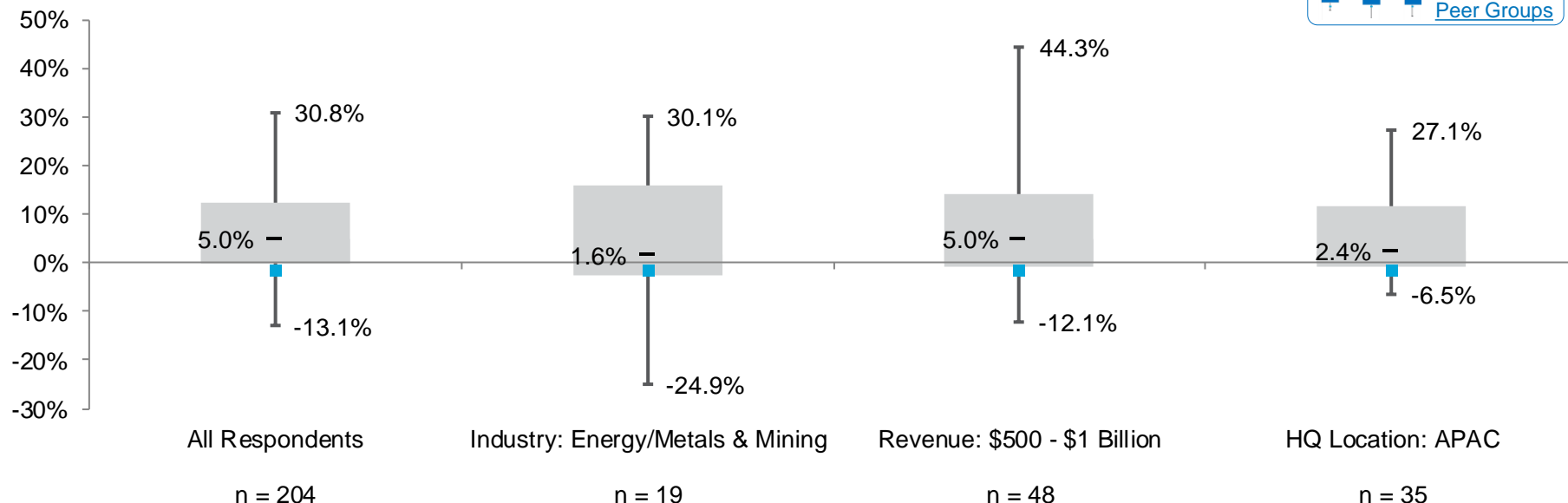
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FORECASTS FOR IT INVESTMENT GROW

Expected Change in Total IT Investment 2016 – 2017 (E)

Your Response: -1.7%


 Additional
Peer Groups


Note: Total IT investment includes IT operating expenditure, IT capital expenditure, as well as depreciation.

Change in Total IT Investment is expected to grow by 5.0% at the median in 2017.

- In 2016, IT organizations expected budget growth of 4.5% for 2016. Companies exceeded this expectation, achieving an actual growth of 8.4%.
- Total IT investment is an all-inclusive view of the cost to run IT in a given year. By contrast, IT expenditure includes IT operating expenditure and IT capital expenditure but excludes depreciation, providing a cash view of IT's spending for a given year.

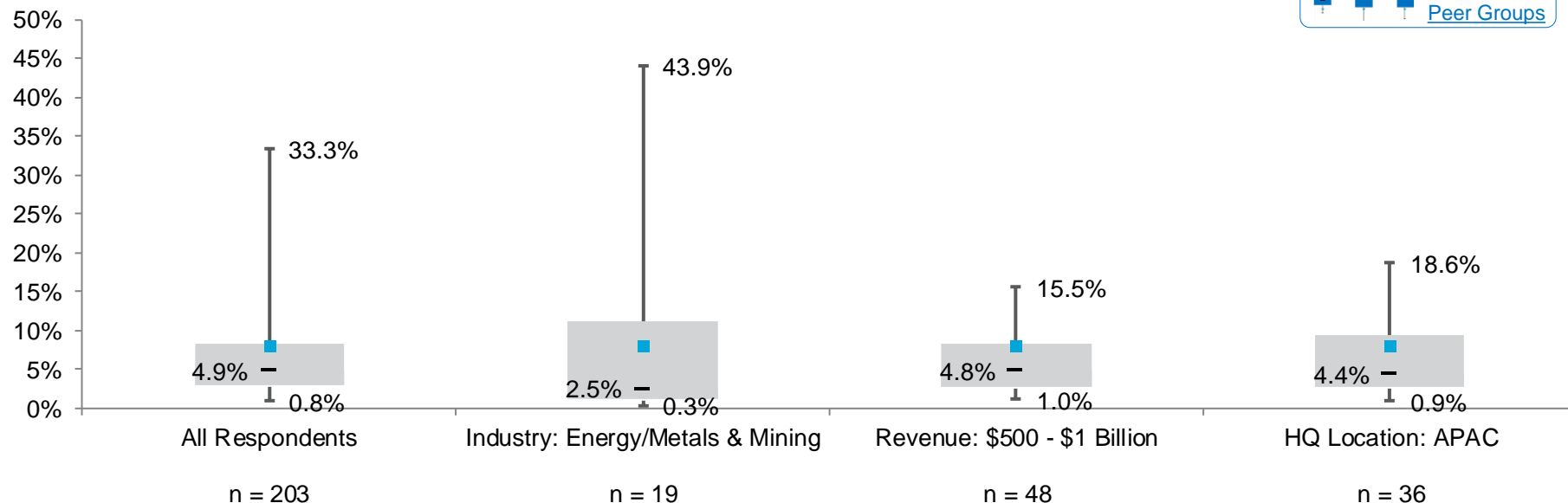
Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#) [Depreciation\(B1a\)](#) [IT Capital Expenditure\(B1b\)](#)

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IT OPEX BY BUSINESS ENTITY OPEX

IT Operating Expenditure as a Percentage of Business Entity Operating Expense

2016



Your Response: 7.9%


 Additional Peer Groups

Note: (1) IT operating expenditure does not include depreciation/amortization and IT capital expenditure. (2) Business entity operating expense is the day-to-day expense, such as sales and administration, or research & development. This includes depreciation of assets which are used in the production process, but excludes one-time capital expenses.

IT Operating Expenditure as a percentage of Business Entity Operating Expense is 4.9% at the median.

- This represents a slight increase from IT Operating Expenditure as a percentage of Business Entity Operating Expense in 2015, 4.4% at the median.

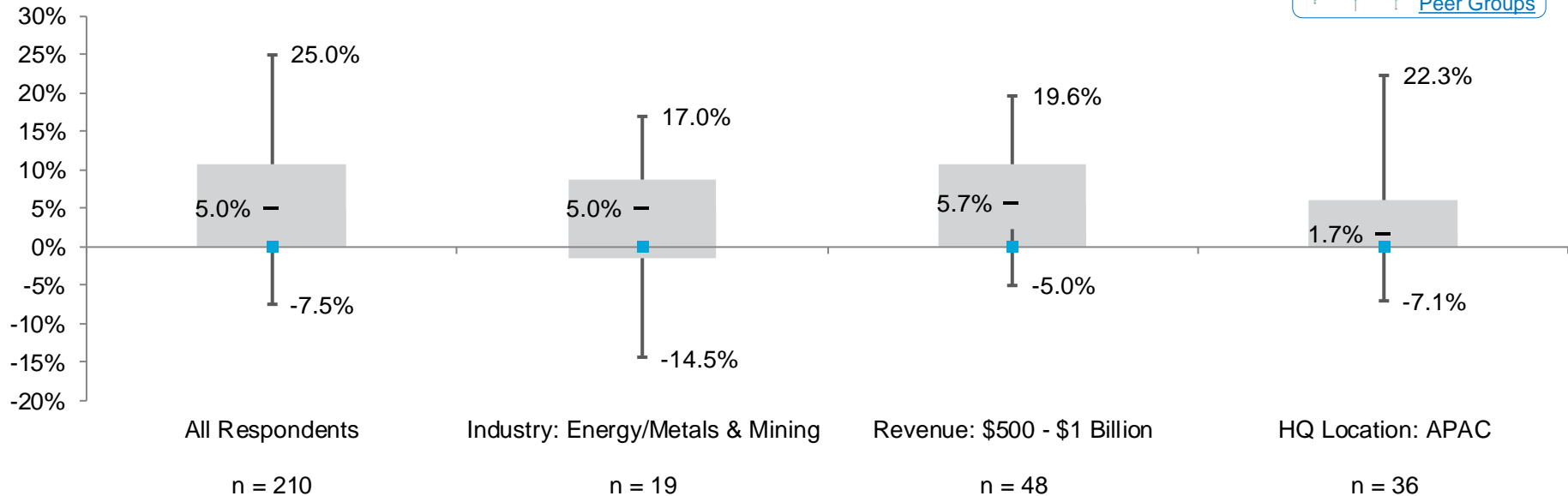
Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#) [Business Entity Operating Expenditure\(A3\)](#)

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INCREASED OPEX GROWTH EXPECTED AT THE MEDIAN

Expected Change in IT Operating Expenditure 2016 – 2017 (E)

Your Response: 0.0%


[Additional Peer Groups](#)


Note: IT operating expenditure does not include depreciation/amortization and IT capital expenditure.

IT operating expenditure accounts for the bulk of forecasted growth in total IT spend. At the median, IT organizations expect a 5.0% growth in IT operating expense for 2017.

- Last year, expected change in IT operating expenditure was 3.5%, but IT organizations saw an actual increase of 7.9% from 2015. Actual growth tends to exceed expectations every year as organizations have greater visibility into demand.
- The total IT operating expenditure includes costs related to hardware and software maintenance; application development; cost of operating, supporting, maintaining, and managing existing IT systems; and infrastructure components and services. IT operating expenditure excludes depreciation and all capital expenses.

Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#)

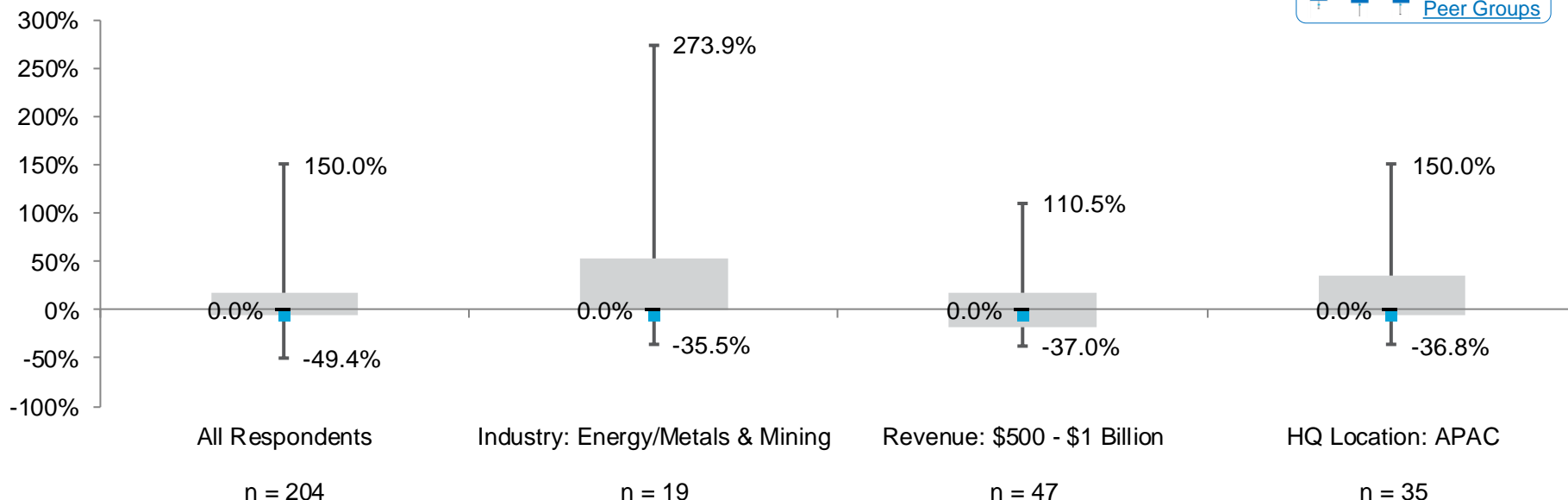
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FLAT CAPEX FORECASTS AT THE MEDIAN

Expected Change in IT Capital Expenditure 2016 – 2017 (E)

Your Response: -4.9%

[Additional Peer Groups](#)



Note: IT capital expenditure is defined as one-time costs to buy a new asset or to upgrade an existing asset. The cost is spread across the useful life of the asset as depreciation/amortization.

IT Capital Expenditure is not expected to change at the median. This is likely a conservative estimate, as organizations tend to adjust expectations as visibility into demand for capital-intensive IT Projects becomes more clear.

- In 2015, IT organizations expected IT capital expenditure to increase 6.3% across 2016, but IT organizations actually experienced an increase of 9.3%. Actual growth tends to exceed expectations every year.
- Leading IT organizations balance discipline in budgeting and flexibility to ensure that capital outlays can adjust with shifting priorities.

Your Survey Responses for this Metric: [IT Capital Expenditure\(B1b\)](#)

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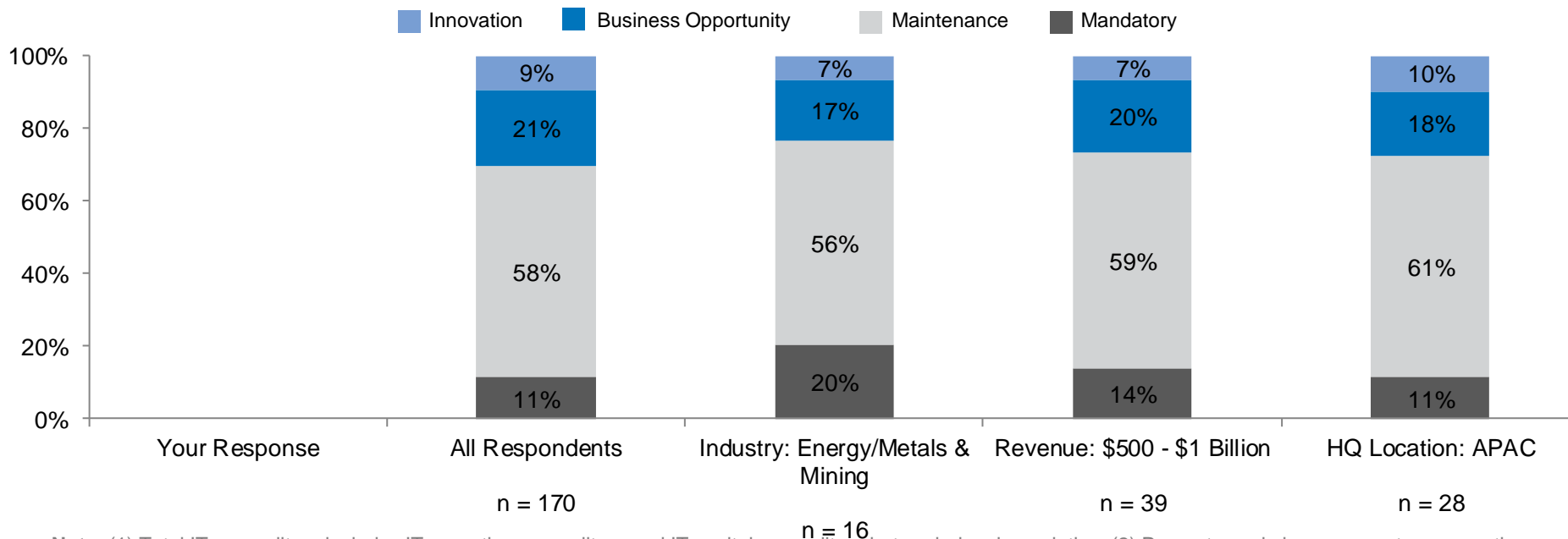
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STEADY INNOVATION AND BUSINESS OPPORTUNITY

Allocation of Total IT Expenditure by Asset Class

Average Across Respondents, 2016



Note: (1) Total IT expenditure includes IT operating expenditure and IT capital expenditure but excludes depreciation. (2) Percentages in bars may not sum exactly to 100% due to rounding.

IT organizations allocated approximately one-third of their Expenditure to Innovation and Business Opportunity investments in 2016. This allocation matches the results from 2014 and 2015.

- CIOs must closely tie the investment prioritization process to the strategic objectives of the enterprise to ensure that experimental projects with great (but hard to quantify) business impact potential are not consistently pushed out in favor of foundational investments with clear ROI.
- Consult the glossary of survey terms starting on page 87 for a [definition of each asset class](#).
- Review [Investing for Business Outcomes](#) to learn how best companies find most valuable investment opportunities.

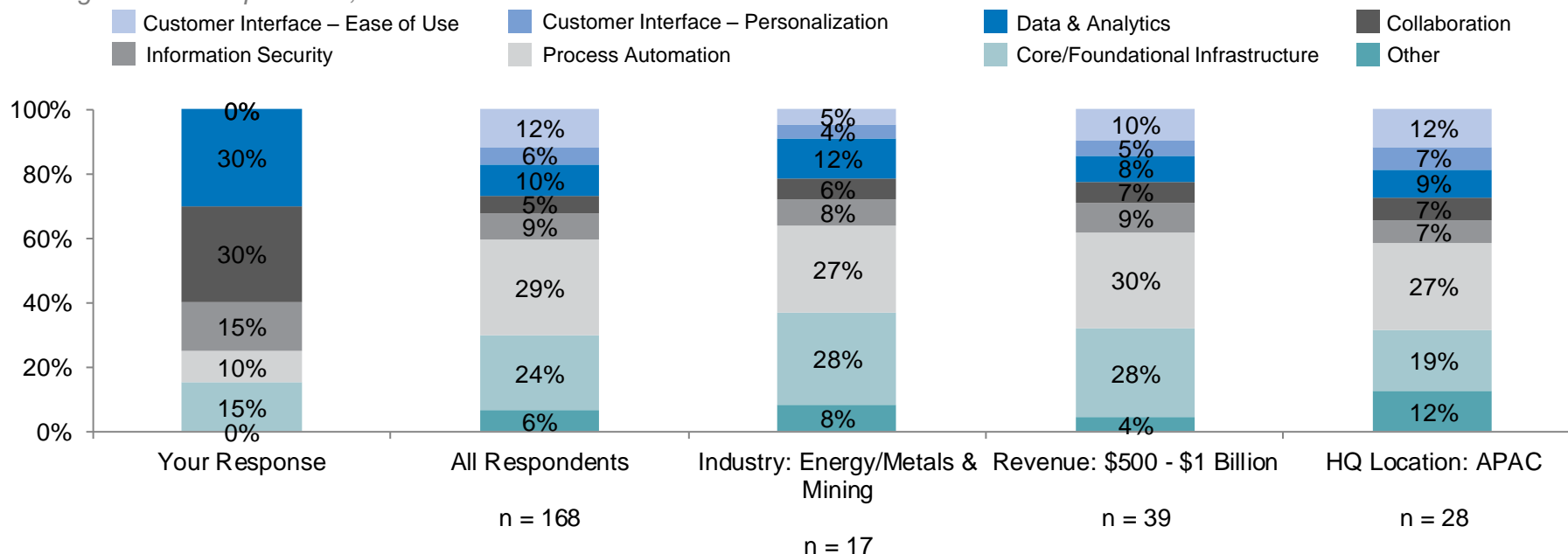
Your Survey Responses for this Metric: [IT Expenditure Allocation by Asset Class\(B4\)](#)

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INCREASED FOCUS ON ANALYTICS AND SECURITY

Allocation of IT Project Budget by Enablement Type

Average Across Respondents, 2016



Note: (1) Project Budget is the total amount that is budgeted for all the IT-enabled projects in a given year. This includes both core/foundational infrastructure projects as well as business enablement projects. (2) Percentages in bars may not sum exactly to 100% due to rounding.

As data becomes a key corporate asset, CIOs are allocating significant dollars to Information Security and Data & Analytics in 2016.

- Information security and data & analytics make up 9% and 10% of IT project budgets, respectively.
- CIOs must closely tie the investment prioritization process to the strategic objectives of the enterprise to ensure that experimental projects with great (but hard to quantify) business impact potential are not consistently pushed out in favor of foundational investments with clear ROI.
- Consult the glossary of survey terms starting on page 87 for a [definition of each enablement type](#).

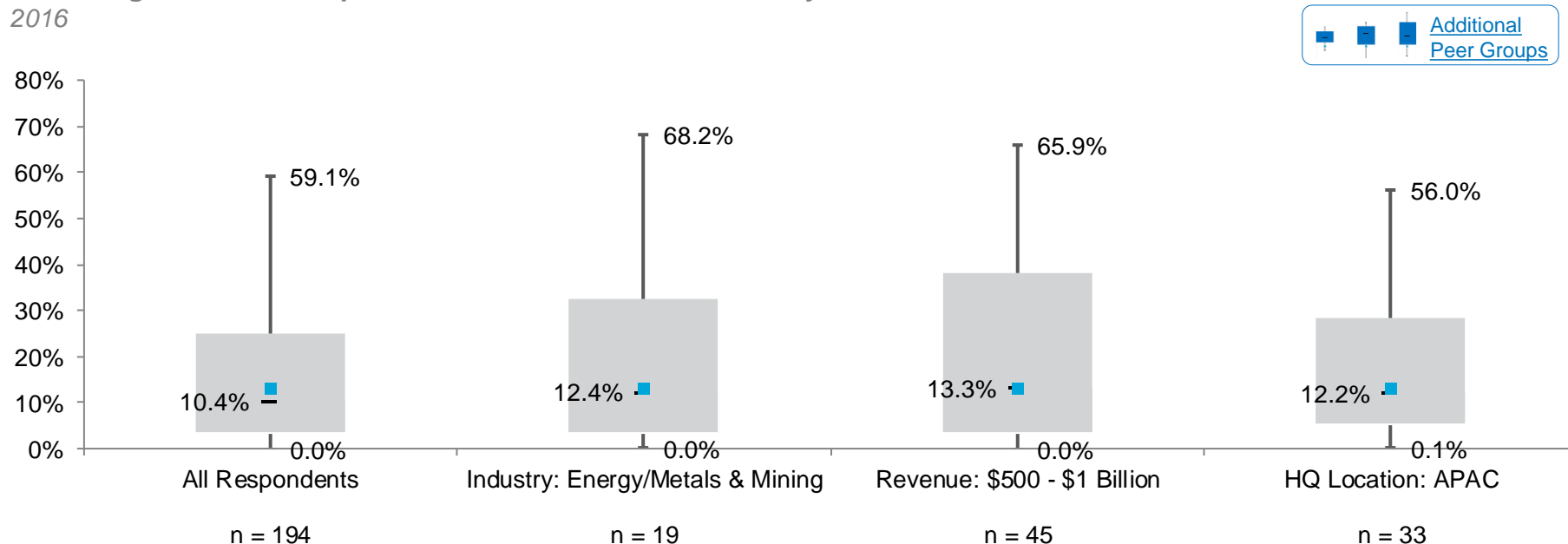
Your Survey Responses for this Metric: [Allocation of IT Project Budget\(C6\)](#)

OUTSOURCING LEVEL BY TOTAL IT EXPENDITURE

Percentage of Total IT Expenditure Outsourced to Third-Party Providers

2016

Your Response: 13.3%



Note: Outsourcing level is defined as the percentage of your total IT expenditure that is incurred by activities completed by external providers. Consultants and service providers are included in outsourcing, while contractors are considered “in-house”.

The median IT organization outsources 10.4% of its total IT Expenditure to third-party providers, up 2.1% from last year.

- You can view details on [outsourcing by sub-function](#) on page 56.
- You can also view [expected change in outsourced spending](#) between 2016 and 2017 on page 71.

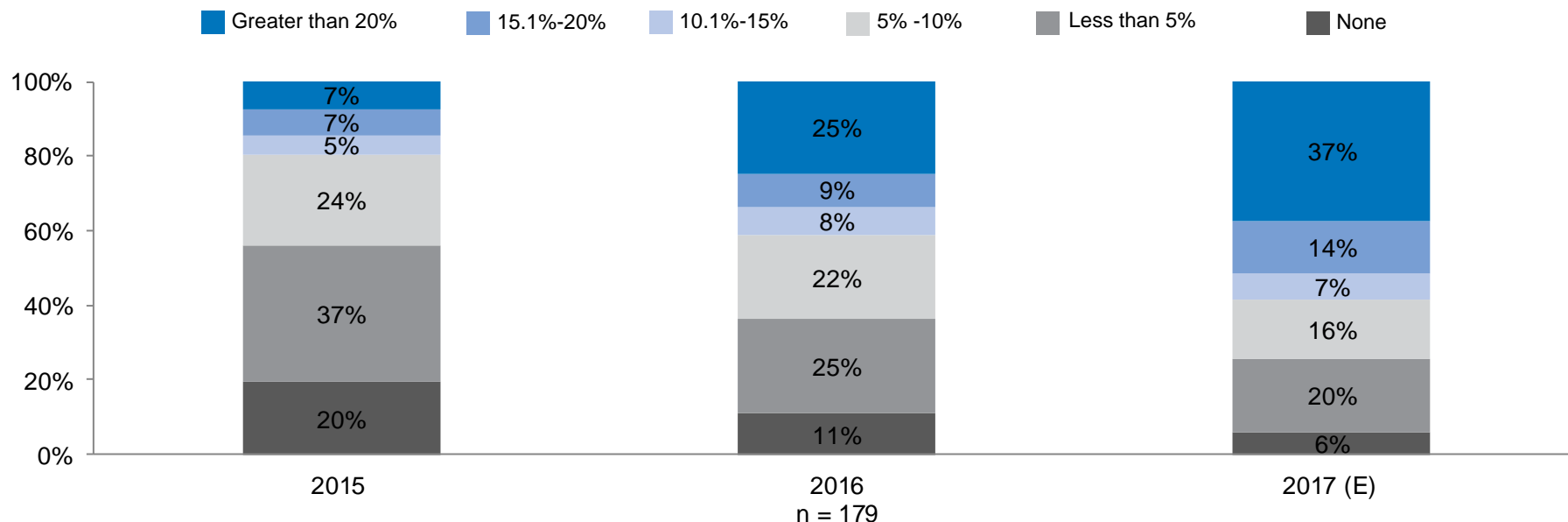
Your Survey Responses for this Metric: [IT Expenditure Outsourced\(B7\)](#) [IT Capital Expenditure\(B1b\)](#) [IT Operating Expenditure\(B1a\)](#)

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RAPID MIGRATION TO THE CLOUD

Share of Total IT Expenditure Allocated to Cloud Sourcing
 Percentage of Respondents, 2015 – 2017 (E)

Your Responses: 2015: N/A 2016 (E): 2.2% 2017 (E): 2.2%



Note: (1) Cloud Sourcing spending includes Software-as-a-Service, Infrastructure-as-a-Service, and Platform-as-a-Service (refer to glossary starting on page 115 for details). (2) Percentages in bars may not sum exactly to 100% due to rounding.

By next year, 37% of companies will be spending more than one-fifth of their IT Budget on the cloud.

- Adoption of cloud solutions is near universal – 94% of IT organizations are expecting to allocate at least some portion of their budget to cloud solutions by next year.
- This rapid acceleration of investment in cloud-based solutions is driven by IT organizations' desire to enable greater service responsiveness and cost flexibility.

Your Survey Responses for this Metric: [Total IT Expenditure Allocated to SaaS, PaaS and IaaS\(B4\)](#)

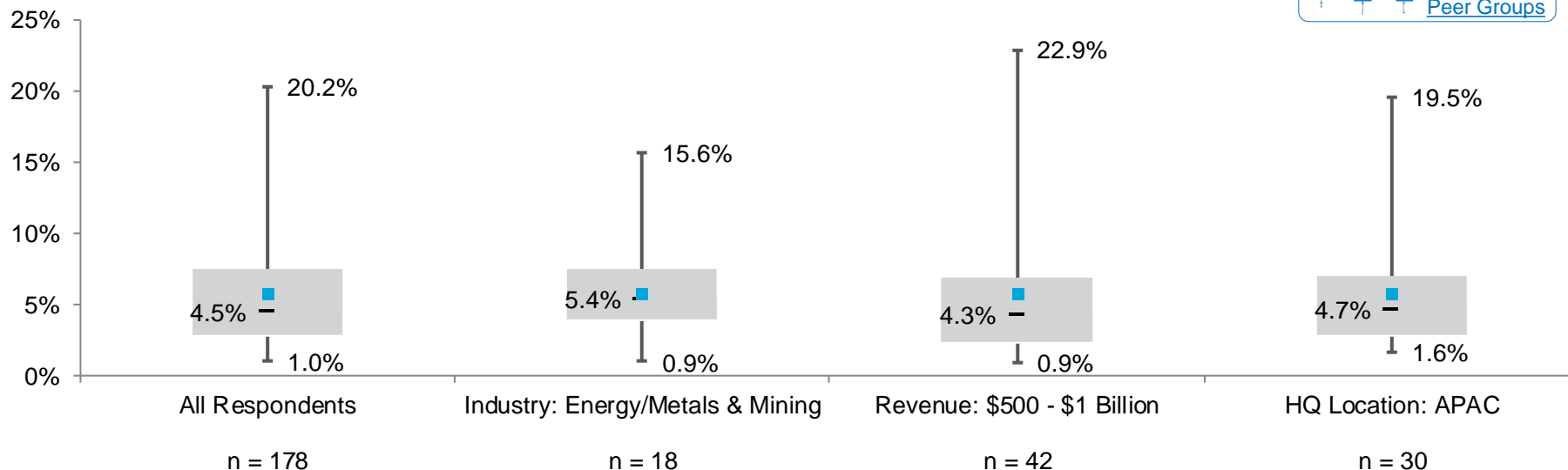
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GAINS IN TOTAL IT STAFF BY BUSINESS ENTITY FTEs

Total IT Staff as a Percentage of All Business Entity FTEs

2016

Your Response: 5.7%


 Additional Peer Groups


Note: (1) IT full-time equivalents (FTE) include both internal staff and contractors, but do not include outsourced job functions where responsibility has been entirely handed off to a third party. (2) Business entity full-time equivalents (FTE) can be an aggregation of part-time employees. Business entity FTEs include both internal employees and contractors.

In 2016, 4.5% of all Business Entity employees work in IT at the median. This percentage is up slightly from 4.3% in 2015.

- Use this metric to benchmark your organization's staffing levels and ensure adequate IT support for your organization.

Your Survey Responses for this Metric: [Internal IT FTEs\(D1\)](#) [Contractors\(D1\)](#) [Business Entity FTEs\(A5\)](#)

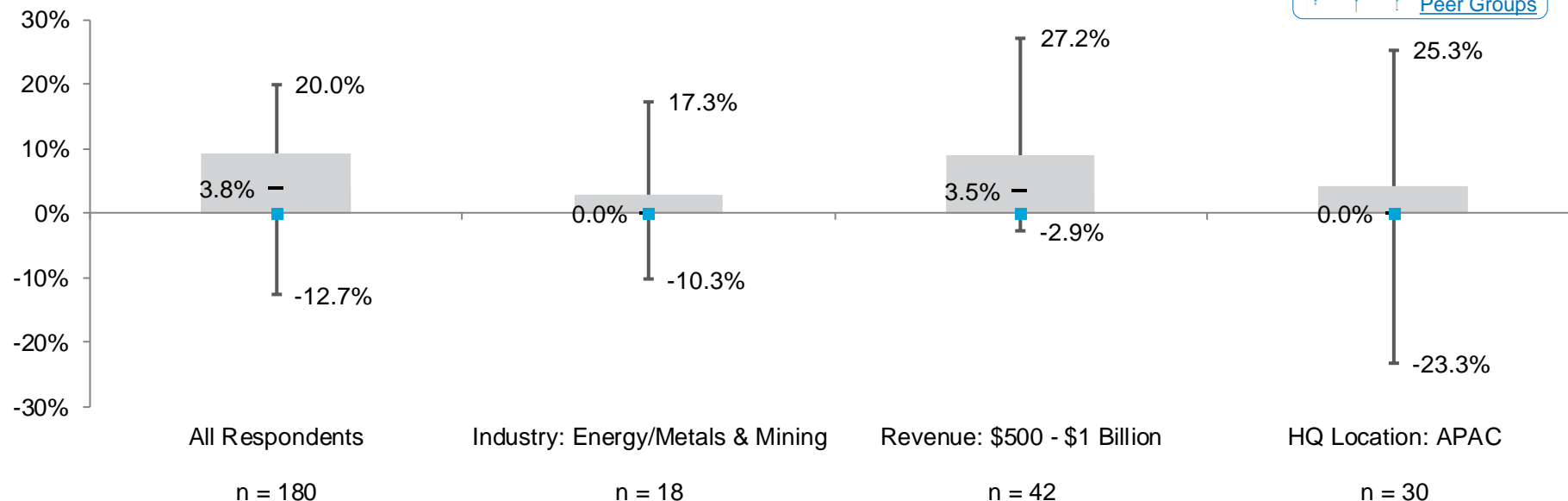
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CONSERVATIVE INTERNAL IT FTE GROWTH EXPECTED AT THE MEDIAN

Percentage Change in Internal IT FTE Levels
2016 – 2017 (E)

Your Response: 0.0%

 [Additional Peer Groups](#)



Note: Internal IT FTEs do not include contractors.

CIOs plan to increase their team sizes in 2017, expecting a 3.8% growth in internal FTEs, as compared to this year.

- In 2015, CIOs expected greater internal FTE growth at 4.9% for 2016, but saw 4.2% growth in actuality. This suggests that additional internal IT FTE growth may occur as the project queue for 2016 is finalized and staffing needs become more visible, and that staffing levels for 2017 will likely increase, at the median.

Your Survey Responses for this Metric: [Internal IT FTEs\(D1\)](#) [Contractors\(D1\)](#)

[Aggregate Findings](#)

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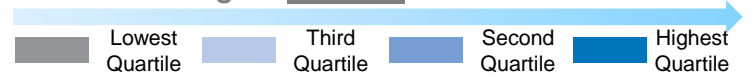
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YOUR METRICS KEY TAKEAWAYS

Direction of Higher Numeric Value

Key Metrics Dashboard for 2016

Your Quartile Position Relative to Peer Group

Metric Group	Metrics	Your Value	All Respondents	Industry: Energy/Metals & Mining	Revenue: \$500 - \$1 Billion	HQ Location: APAC
			N = 236	N = 20	N = 54	N = 41
			Median Value	Median Value	Median Value	Median Value
IT EXPENDITURE	Total IT Expenditure as a Percentage of Business Entity Revenue, 2016	3.5%	4.0%	3.5%	3.9%	4.5%
	Total IT Expenditure per Business Entity FTE, USD, 2016	\$19,297	\$10,690	\$15,905	\$10,380	\$11,118
	Percentage of Total IT Expenditure Outsourced to Third-Party Providers, 2016	13.3%	10.4%	12.4%	13.3%	12.2%
	IT FTEs as a Percentage of All Business Entity FTEs, 2016	5.7%	4.5%	5.4%	4.3%	4.7%
BUDGET FORECASTING	Expected Change in Total IT Expenditure 2016-2017 (E)	-1.7%	5.0%	1.6%	5.0%	2.4%
	Expected Change in IT Capital Expenditure 2016-2017 (E)	-4.9%	0.0%	0.0%	0.0%	0.0%
	Expected Change in IT Operating Expenditure 2016-2017 (E)	0.0%	5.0%	5.0%	5.7%	1.7%
	Expected Change in Total IT FTE Levels 2016-2017 (E)	0.0%	2.6%	0.0%	2.0%	0.0%
SPENDING ALLOCATIONS	Total IT Expenditure Allocated to Innovation and Business Opportunity, 2016	N/A	26.0%	22.0%	25.0%	25.0%
	Share of Project Budget Allocated to Collaboration, Data & Analytics, and Customer Interface, 2016	60.0%	30.0%	16.6%	30.0%	39.1%

HOW CEB CAN HELP: ADDITIONAL CEB RESOURCES

IT Expenditure

- **[Investing for Business Outcomes](#)**: Rethink the capital allocation process to ensure investments are rooted in a clear understanding of business value using examples from [First Group](#) and [Brocade](#).
- **[IT Budget Benchmark Analysis Tool](#)**: Further benchmark your organization's functional technology spending as well as other critical spending and staffing metrics through this online tool.

Spending Allocation

- **[Total Cost of Ownership Calculator](#)**: Make effective budgeting decisions by uncovering all hidden costs incurred across an application's lifecycle.
- **[Budget Reallocation Toolkit](#)**: Improve your ability to quickly move resources to meet unplanned demand using this compilation of tools and tactics.

Resourcing Models

- **[Sourcing Handbook—Tactics and Templates for Sourcing Strategy and Vendor Management](#)**: Use the set of tools, tactics and templates in this handbook to improve key IT sourcing activities.

IT Talent

- **[The Talent Implications of Digitization](#)**: draws on data from more than 30 million job listings to determine the technology skills that are present and in demand in IT functions and across the broader enterprise.
- **[IT Strategic Workforce Planning Handbook](#)**: Use the proven tools and templates in this handbook to shorten the time to build an IT strategic workforce plan.
- **[Premium CEB Talent Products](#)**: Explore CEB's premium talent services to build your team's leadership skills ([CEB IT Leadership Academy](#)), obtain critical role-based training ([CEB Project Manager Development Accelerator](#)), and assess your team against critical competencies ([CEB IT Talent Assessment](#)).

Digitization and IT Function Strategic Model

- **[The Digital Enterprise in 2020: Six Shifts That Will Shape the Business Landscape](#)**: Define digital strategy by assessing six shifts that will characterize the digital enterprise in 2020. These shifts will inform your planning and investment choices across the next five years.
- **[The Future Roles of CIOs](#)**: Career trajectories that CIOs plan to pursue as the pace of digital transformation picks up.
- **[Implementing DevOps](#)**: Get answers to critical DevOps questions around objectives, organizing teams, and relocating decision rights.

Visit the [IT Leadership Council for Midsized Companies](#) or contact your account manager for more information about these resources.

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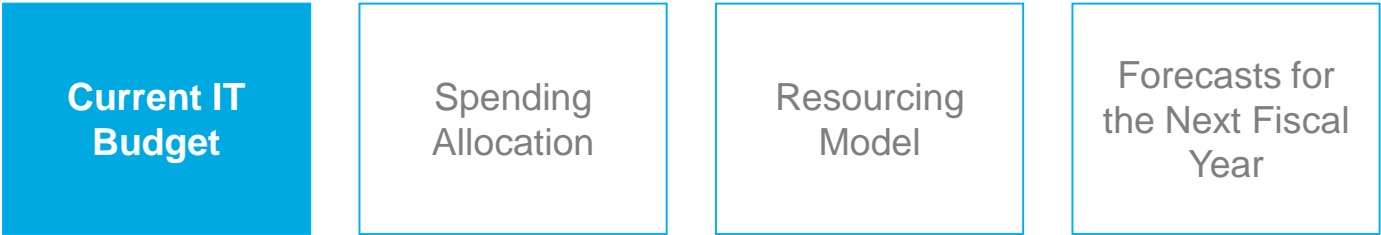
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Detailed Survey Findings

- Current IT Budget
- Spending Allocation
- Resourcing Model
- Forecasts for the Next Fiscal Year

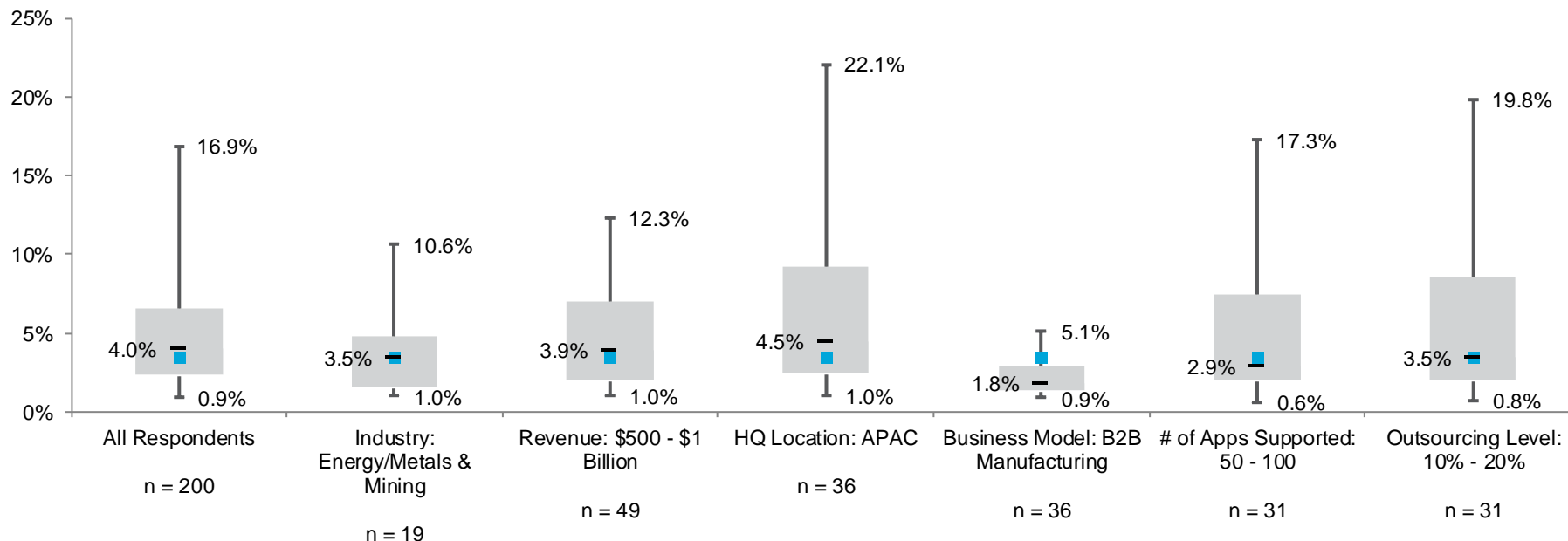


TOTAL IT EXPENDITURE BY REVENUE

Total IT Expenditure as a Percentage of Business Entity Revenue

Your Response: 3.5%

2016



At the median, IT Expenditure as a percentage of Business Entity Revenue is 4.0%.

- Total IT expenditure includes IT operating expenditure and capital expenditure but excludes depreciation.
- Business entity revenue is defined as net sales, excluding expected returns. Government organizations provided enacted budget/annual appropriations for their agencies.

Your Survey Responses for this Metric: [IT Capital Expenditure\(B1b\)](#) [IT Operating Expenditure\(B1a\)](#) [Business Entity Revenue\(A4\)](#)

Current IT Budget

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[Resourcing Model](#)

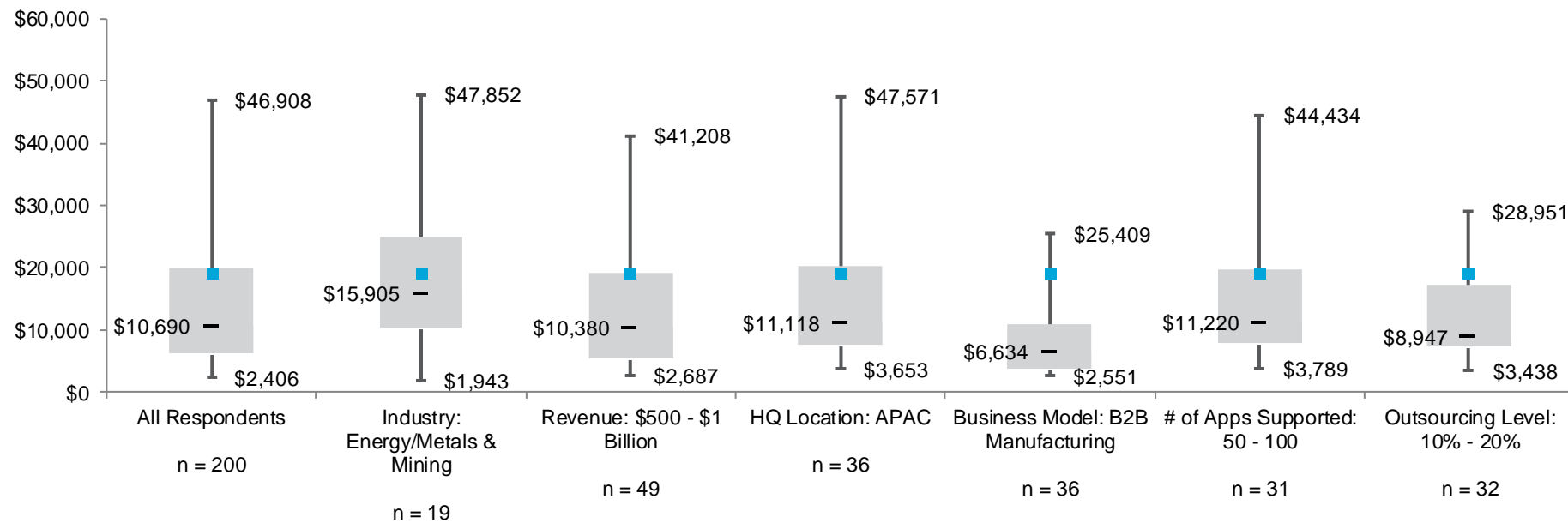
[Forecasts for the Next Fiscal Year](#)

TOTAL IT EXPENDITURE BY TOTAL BUSINESS ENTITY FTEs

Total IT Expenditure per Business Entity FTE

USD, 2016

Your Response: \$19,297



At the median, IT Expenditure per FTE is approximately \$10,690.

- Total IT expenditure includes IT operating expenditure and IT capital expenditure but excludes depreciation.
- A full-time equivalent (FTE), as determined by the organization's standard working hours (typically 40 hours per week), can represent either a staff member working full-time or the aggregation of part-time employees, such as two part-time employees each working 50% of standard hours.

Your Survey Responses for this Metric: [IT Capital Expenditure\(B1b\)](#) [IT Operating Expenditure\(B1a\)](#) [Business Entity FTEs\(A5\)](#)

Current IT Budget

[Spending Allocation](#)

[Resourcing Model](#)

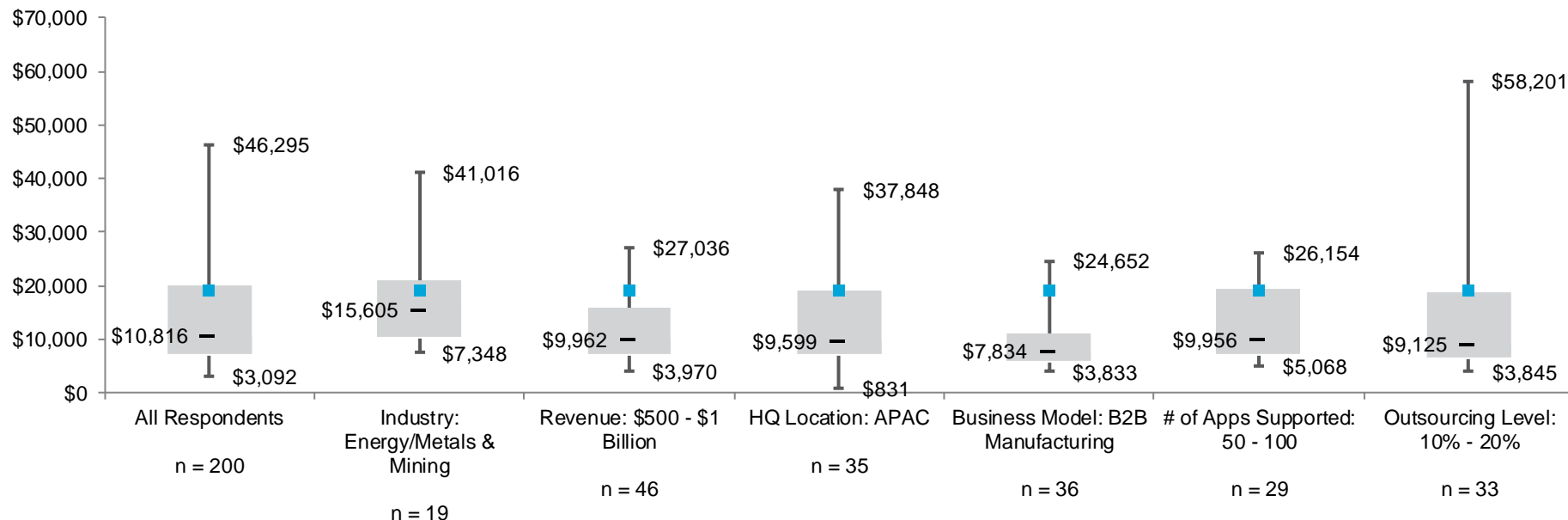
[Forecasts for the Next Fiscal Year](#)

TOTAL IT EXPENDITURE BY IT USER

Total IT Expenditure per IT User

USD, 2016

Your Response: \$19,297



At the median, IT Expenditure per IT User is approximately \$10,816.

- Total IT expenditure includes IT operating expenditure and IT capital expenditure but excludes depreciation.
- An IT user is a regular consumer of the IT services directly administered by corporate IT. Users include internal employees, contractors, and consultants.

Your Survey Responses for this Metric: [IT Capital Expenditure\(B1b\)](#) [IT Operating Expenditure\(B1a\)](#) [IT Users\(A7\)](#)

Current IT Budget

[Spending Allocation](#)

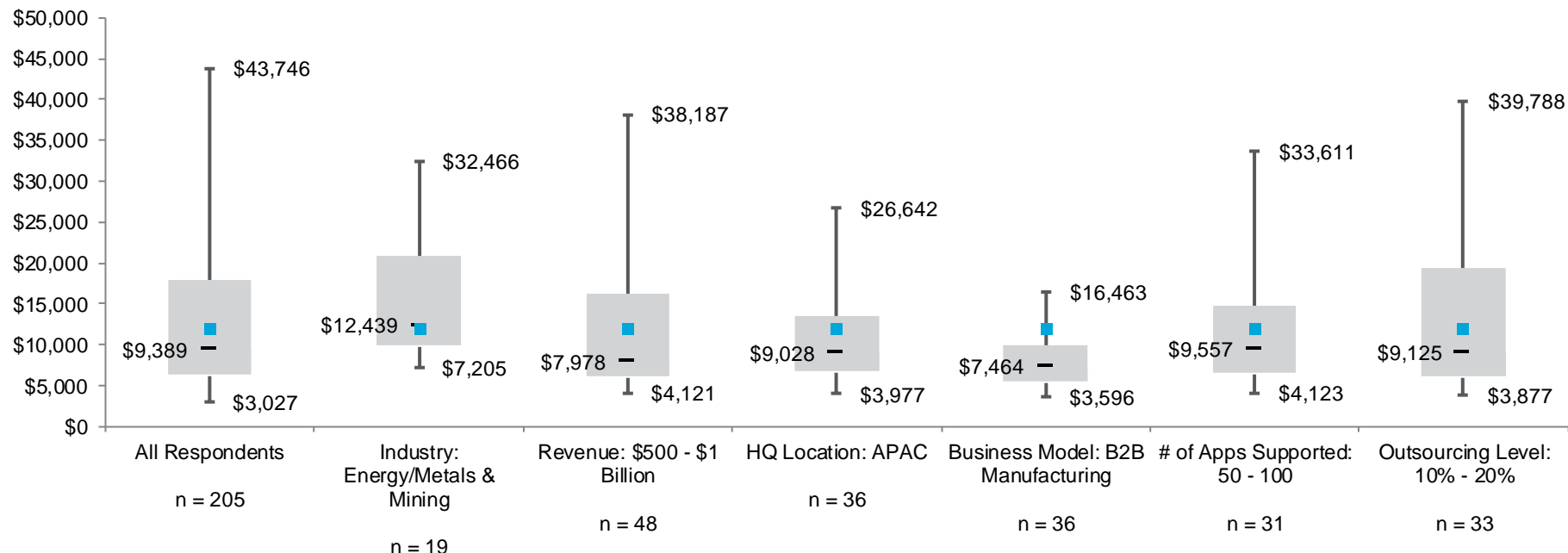
[Resourcing Model](#)

[Forecasts for the Next Fiscal Year](#)

TOTAL IT EXPENDITURE BY PC SUPPORTED

Total IT Expenditure per PC Supported
USD, 2016

Your Response: \$12,061



The median total IT Expenditure per PC supported is approximately \$9,389.

- Total IT expenditure includes IT operating expenditure and IT capital expenditure but excludes depreciation.
- The number of PCs includes computers (desktops and laptops) and tablets that the IT organization supports and maintains. This does not include hand-held devices or mobile devices.

Your Survey Responses for this Metric: [IT Capital Expenditure\(B1b\)](#) [IT Operating Expenditure\(B1a\)](#) [Desktops, Tablets & Laptops\(A6\)](#)

Current IT Budget

[Spending Allocation](#)

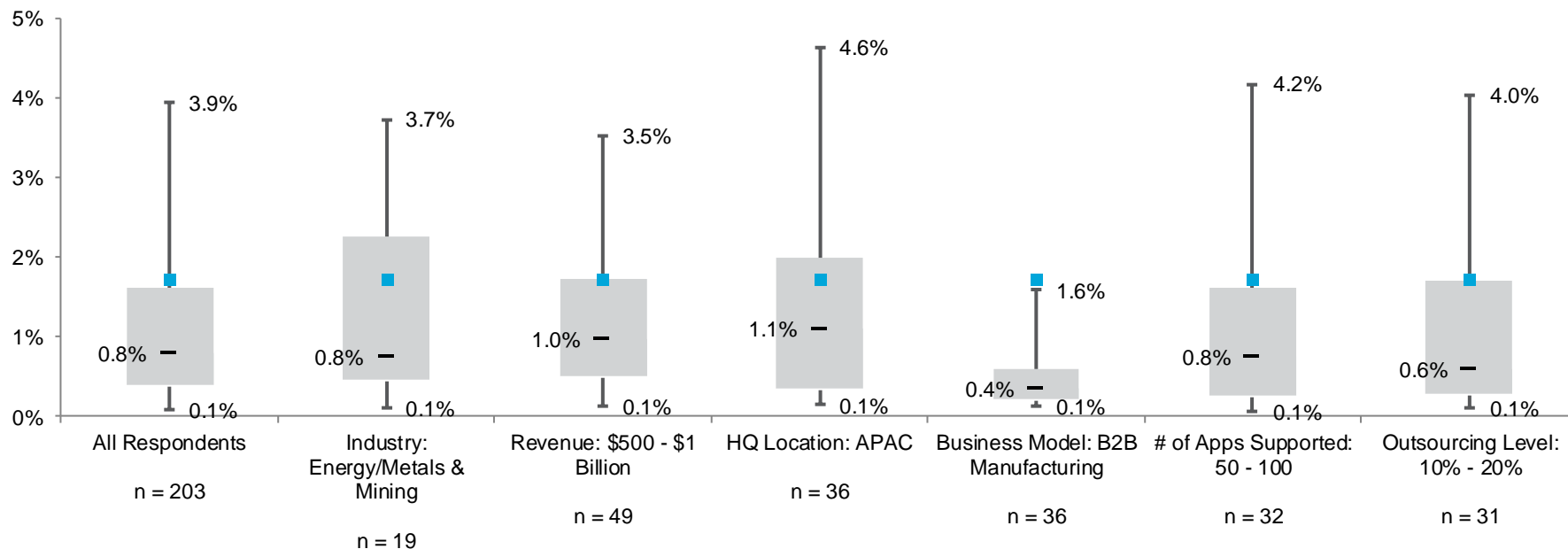
[Resourcing Model](#)

[Forecasts for the Next Fiscal Year](#)

IT CAPITAL EXPENDITURE BY REVENUE

IT Capital Expenditure as a Percentage of Business Entity Revenue
2016

Your Response: 1.7%



In 2016, IT Capital Expenditure as a share of Revenue is 0.8% at the median.

- IT capital expenditure is defined as one-time costs to buy a new asset or to upgrade an existing asset. The cost is spread across the useful life of the asset as depreciation/amortization.
- Business entity revenue is defined as net sales, excluding expected returns. Government organizations provided enacted budget/annual appropriations for their agencies.

Your Survey Responses for this Metric: [IT Capital Expenditure\(B1b\)](#) [Business Entity Revenue\(A4\)](#)

Current IT Budget

[Spending Allocation](#)

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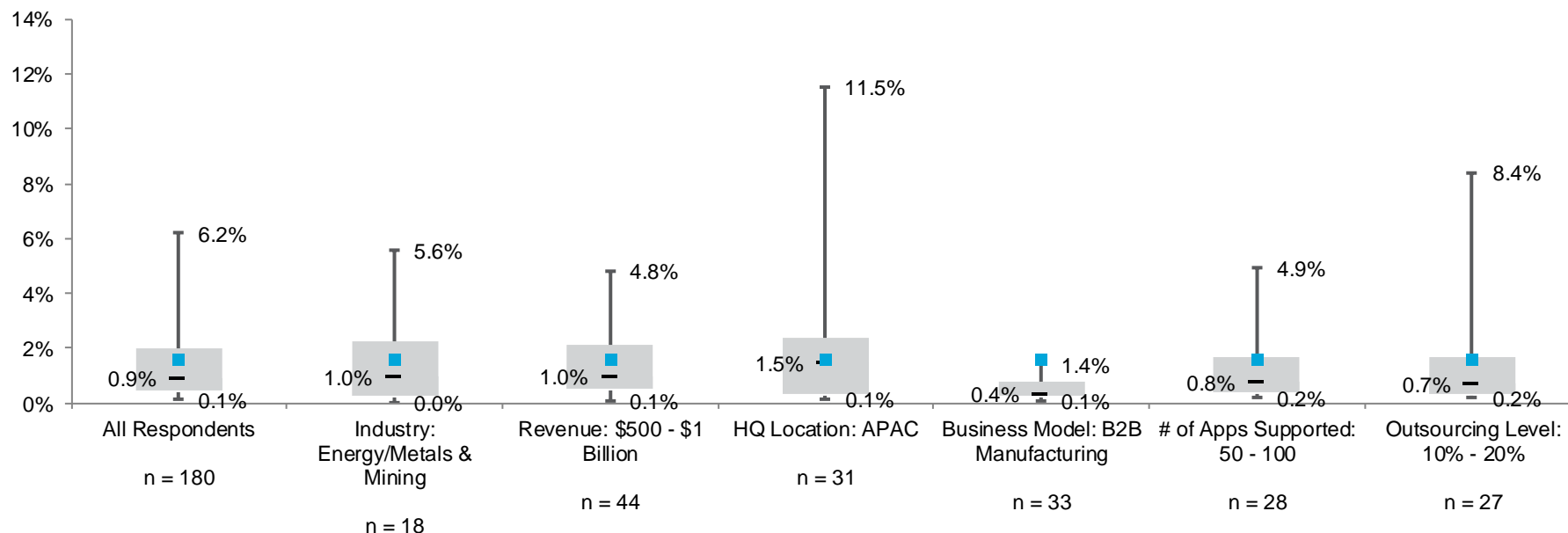
[Forecasts for the Next Fiscal Year](#)

IT PROJECT BUDGET BY REVENUE

IT Project Budget as a Percentage of Business Entity Revenue

Your Response: 1.6%

2016



At the median, Project Spending as a percentage of Revenue is 0.9% at the median.

- IT project budget is defined as the total amount budgeted for all the IT-enabled projects, including foundational infrastructure and business enablement projects. IT projects that span multiple years have been divided across the time period. Capital and external expenses are included.
- Business entity revenue is defined as net sales, excluding expected returns. Government organizations provided enacted budget/annual appropriations for their agencies.

Your Survey Responses for this Metric: [IT Project Budget\(C5\)](#) [Business Entity Revenue\(A4\)](#)

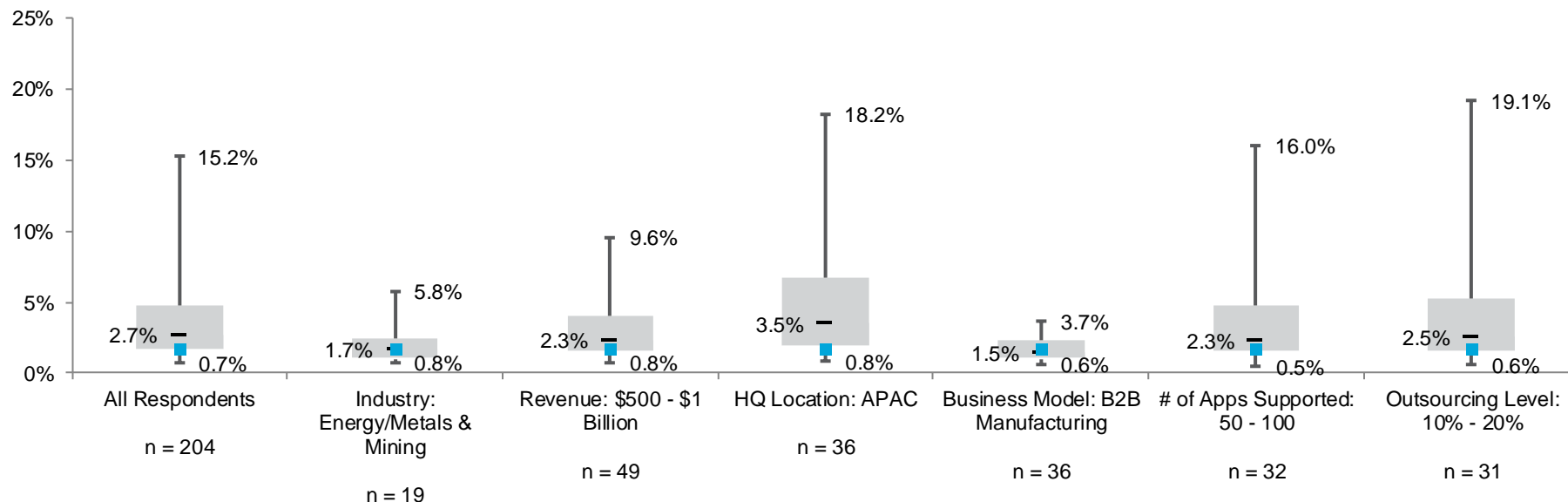
[Current IT Budget](#)
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IT OPERATING EXPENDITURE BY REVENUE

IT Operating Expenditure as a Percentage of Business Entity Revenue

Your Response: 1.7%

2016



At the median, IT Operating Expenditure in 2016 is 2.7% of Revenue.

- The annual total expenditure for all IT-related technology, staff, and externally-provided services. The total IT operating expenditure includes costs related to HW/SW maintenance; application development; cost of operating, supporting, maintaining, and managing existing IT systems; and infrastructure components and services. IT operating expenditure excludes depreciation and all capital expenses.
- Business entity revenue is defined as net sales, excluding expected returns. Government organizations provided their agencies' enacted budget/annual appropriations.

Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#)

[Business Entity Revenue\(A4\)](#)

Current IT Budget

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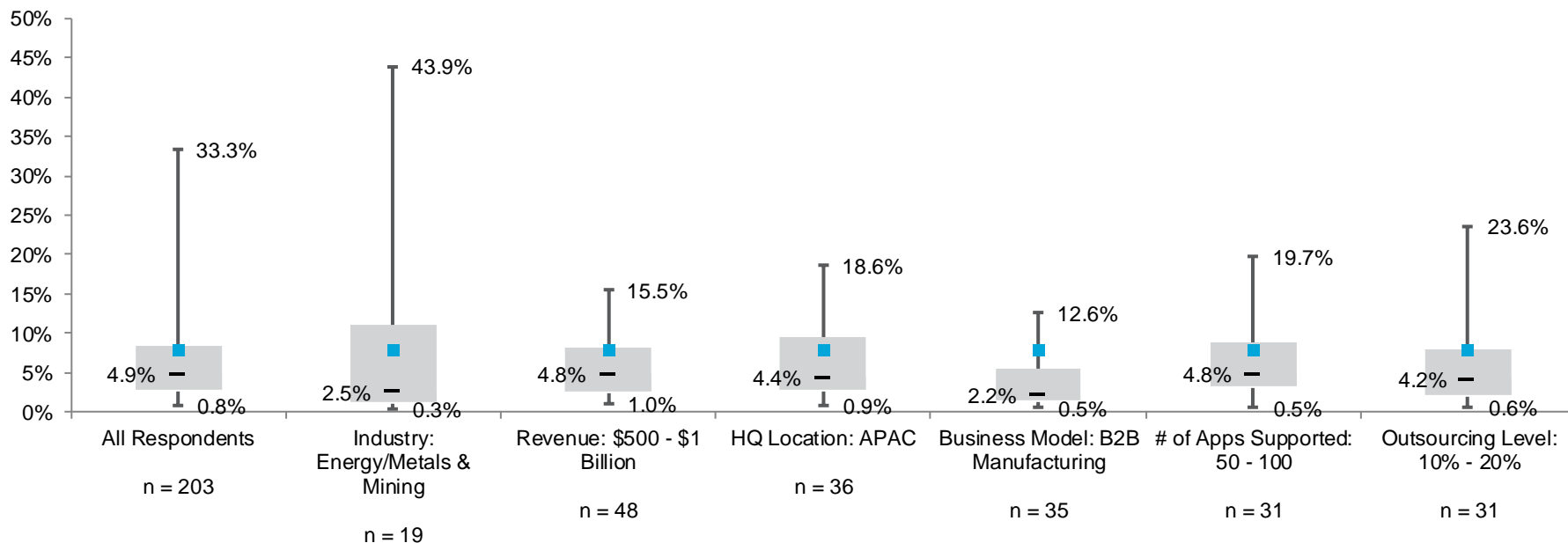
[Forecasts for the Next Fiscal Year](#)

IT OPEX BY BUSINESS ENTITY OPEX

IT Operating Expenditure as a Percentage of Business Entity Operating Expense

Your Response: 7.9%

2016



IT Operating Expenditure as a percentage of Business Entity Operating Expenditure is 4.9%.

- The annual total expenditure for all IT-related technology, staff, and externally-provided services. The total IT operating expenditure includes costs related to hardware and software maintenance; application development; cost of operating, supporting, maintaining, and managing existing IT systems; and infrastructure components and services. IT Operating expenditure excludes depreciation and all capital expenses.
- Business entity operating expense is the day-to-day expense, such as sales and administration, or research & development. This includes depreciation of assets which are used in the production process, but excludes one-time capital expenses.

Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#)

[Business Entity Operating Expenditure\(A3\)](#)

Current IT Budget

[Spending Allocation](#)

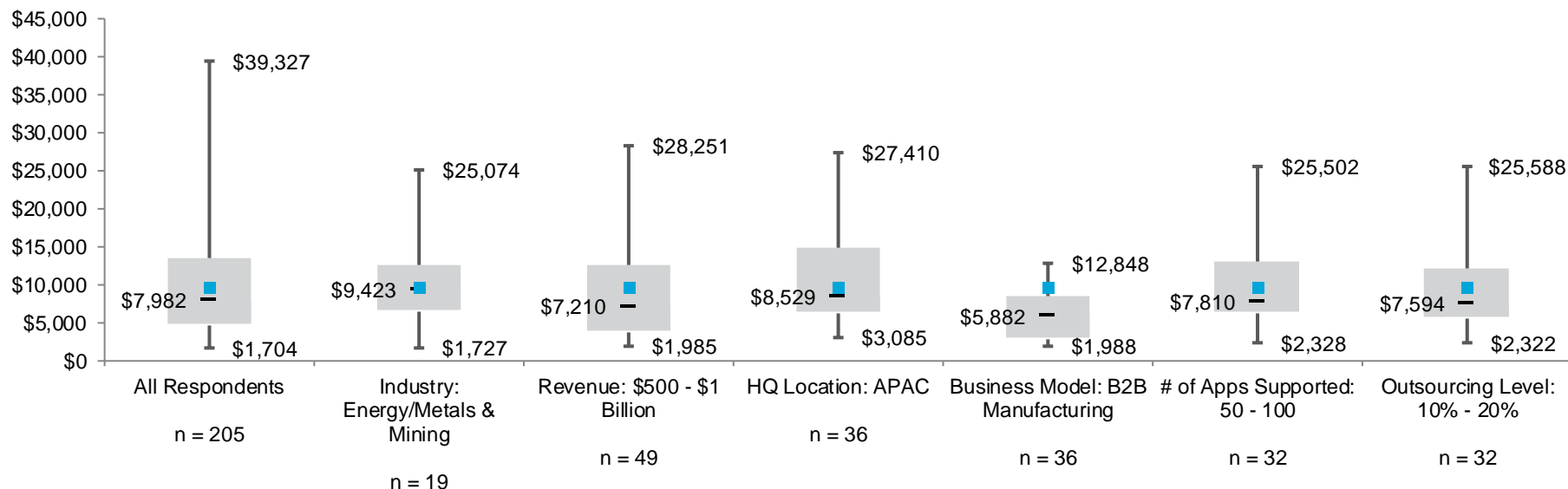
[Resourcing Model](#)

[Forecasts for the Next Fiscal Year](#)

IT OPERATING EXPENDITURE BY BUSINESS ENTITY FTEs

IT Operating Expenditure per Business Entity FTE
USD, 2016

Your Response: \$9,709



IT Operating Expenditure per FTE is approximately \$7,982 at the median.

- IT operating expenditure does not include depreciation/amortization or IT capital expenditure.
- A full-time equivalent (FTE), as determined by the organization's standard working hours (typically 40 hours per week), can represent either a staff member working full-time or the aggregation of part-time employees, such as two part-time employees each working 50% of standard hours. FTEs include both internal employees and contractors that may or may not be regular users of IT services.

Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#) [Business Entity FTEs\(A5\)](#)

Current IT Budget

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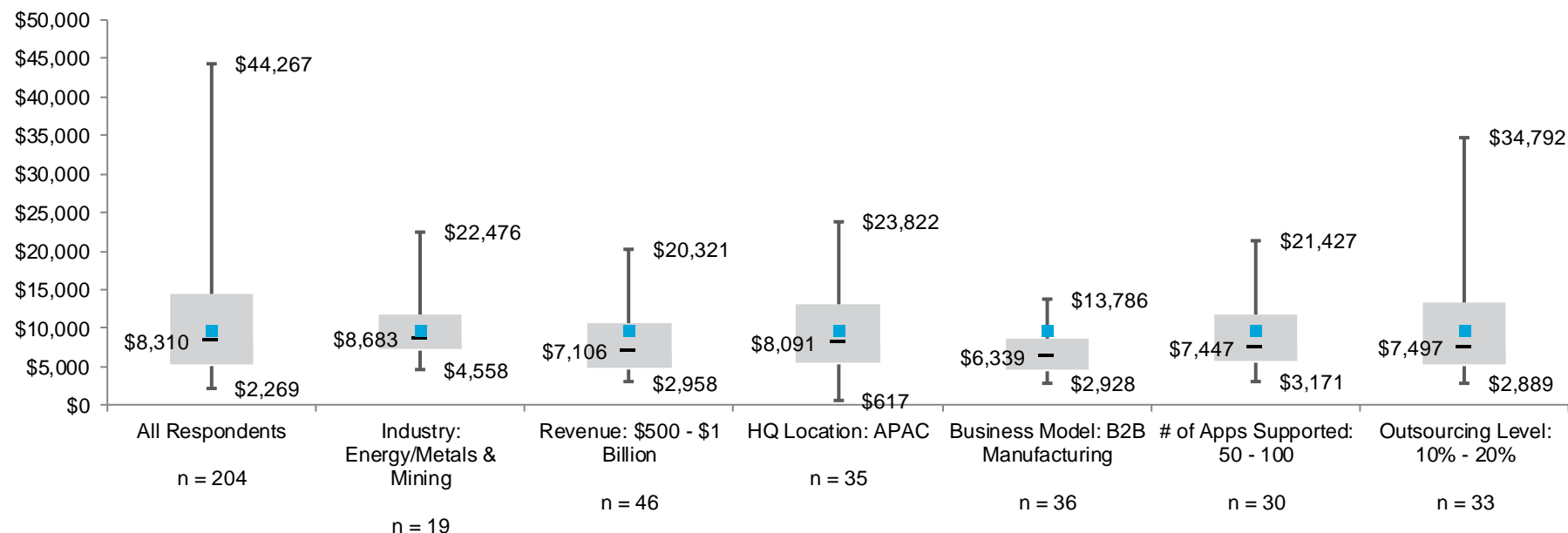
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IT OPERATING EXPENDITURE BY IT USER

IT Operating Expenditure per IT User

USD, 2016

Your Response: \$9,709



This metric measures how Total IT Operating Expenditure is spread across the regular users of services provided by IT. Companies with many employees 'in the field' (i.e. store clerks, rig workers) have relatively fewer IT Users, so they often have higher values for this metric.

- At the median, IT operating expenditure per IT User is \$8,310.
- IT operating expenditure does not include depreciation/amortization or IT capital expenditure.
- An IT user is a regular consumer of the IT services directly administered by corporate IT. Users include internal employees, contractors, and consultants.

Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#) [Total IT Users\(A7\)](#)

Current IT Budget

[Spending Allocation](#)

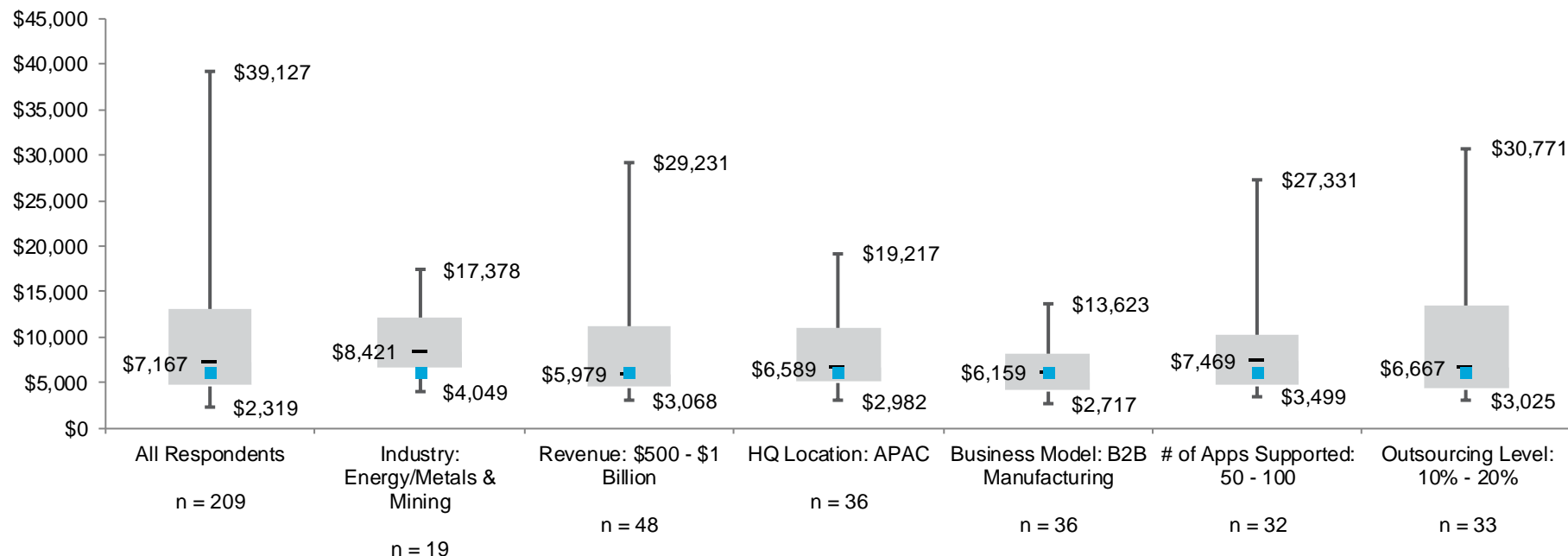
[Resourcing Model](#)

[Forecasts for the Next Fiscal Year](#)

IT OPERATING EXPENDITURE BY PC SUPPORTED

IT Operating Expenditure per PC Supported
USD, 2016

Your Response: \$6,068



The median IT Operating Expenditure per PC supported holds steady at approximately \$7,167.

- IT operating expenditure does not include depreciation/amortization or IT capital expenditure.
- The number of PCs includes computers (desktops and laptops) and tablets that the IT organization supports and maintains. This does not include hand-held devices or mobile devices.

Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#) [Desktops, Tablets & Laptops\(A6\)](#)

Current IT Budget

[Spending Allocation](#)

[Resourcing Model](#)

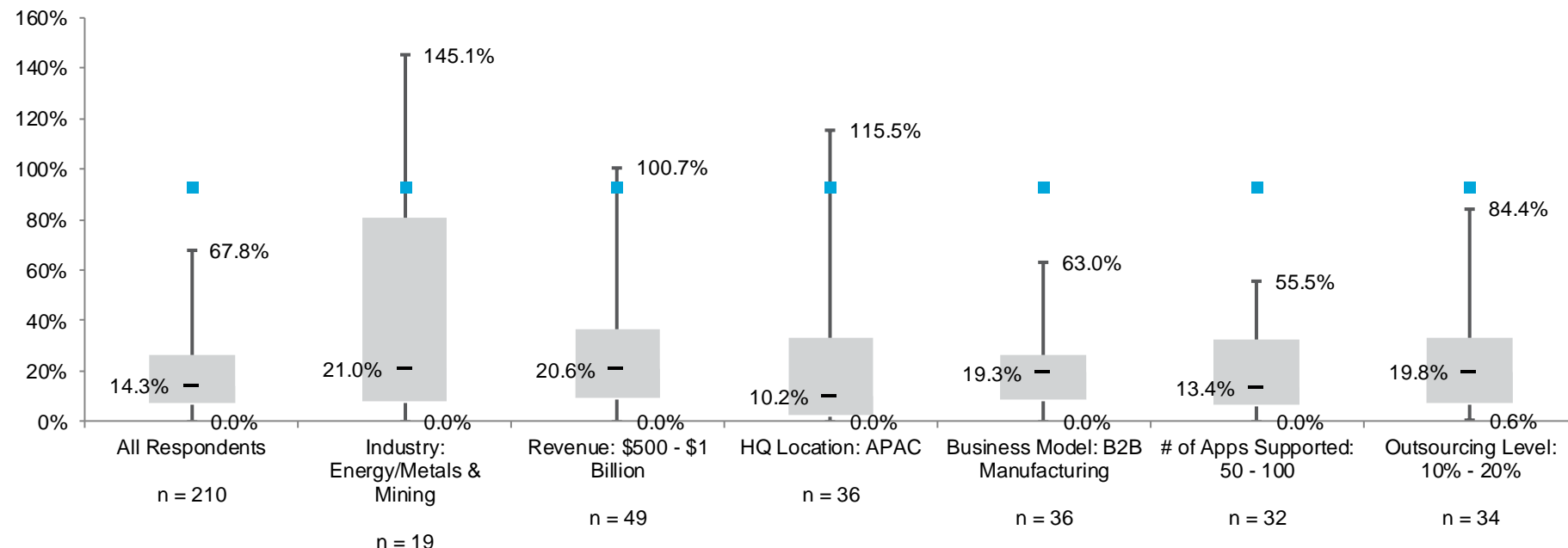
[Forecasts for the Next Fiscal Year](#)

DEPRECIATION AS A SHARE OF IT OPEX

Depreciation as a Percentage of IT Operating Expenditure

Your Response: 93.2%

2016



Depreciation represents 14.3% of IT Operating Expenditure at the median organization.

- Depreciation as a percent of IT operating expenditure is up from 6.2% in 2015. A jump of over 8% is likely based, at least in part, on last year's growth in capital spending (9.3%). Organizations begin to depreciate those capital investments this year.
- IT operating expenditure does not include depreciation/amortization or IT capital expenditure.

 Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#)
[Depreciation\(B1a\)](#)

Current IT Budget

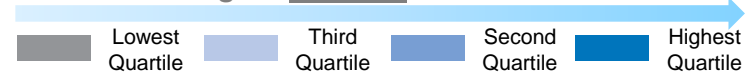
[Spending Allocation](#)
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YOUR METRICS KEY TAKEAWAYS

Key Metrics Dashboard for Your Current IT Budget

Your Quartile Position Relative to Peer Group

Direction of Higher Numeric Value



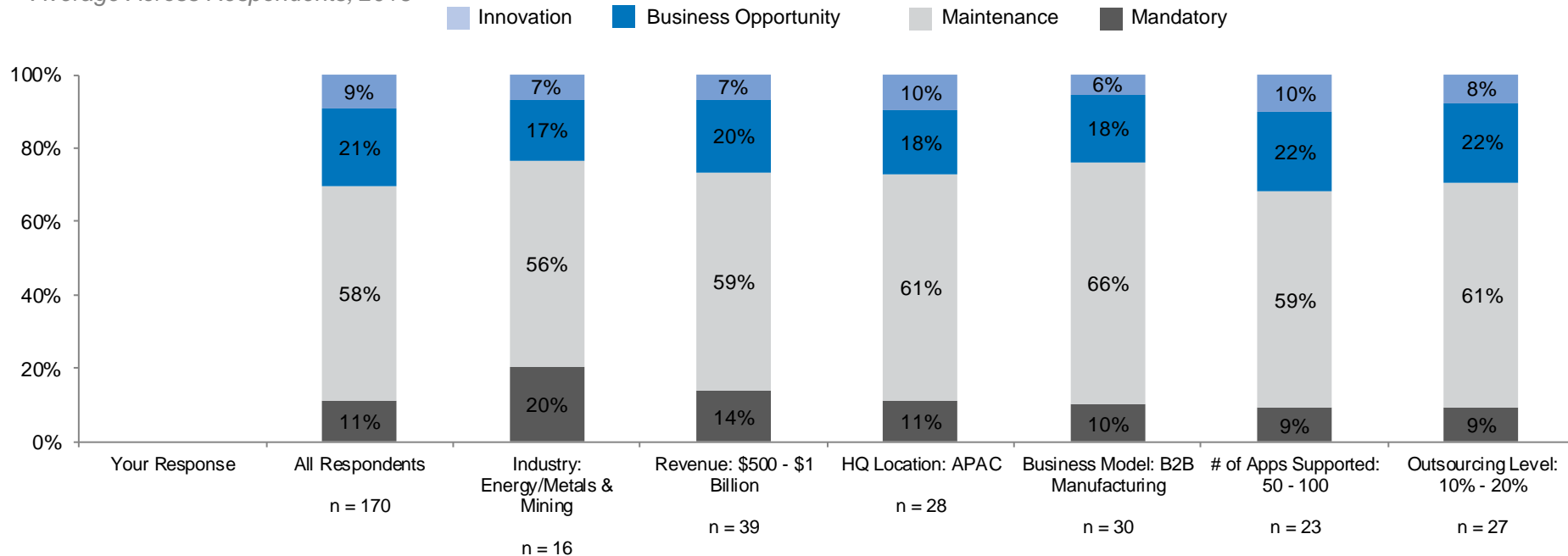
Metric Group	Metrics	Your Value	All Respondents N = 236 Median Value	Industry: Energy/Metals & Mining N = 20 Median Value	Revenue: \$500 - \$1 Billion N = 54 Median Value	HQ Location: APAC N = 41 Median Value
CURRENT IT BUDGET	Total IT Expenditure as a Percentage of Business Entity Revenue, 2016	3.5%	4.0%	3.5%	3.9%	4.5%
	Total IT Expenditure per Business Entity FTE, USD, 2016	\$19,297	\$10,690	\$15,905	\$10,380	\$11,118
	Total IT Expenditure per IT User, USD, 2016	\$19,297	\$10,816	\$15,605	\$9,962	\$9,599
	Total IT Expenditure per PC Supported, USD, 2016	\$12,061	\$9,389	\$12,439	\$7,978	\$9,028
	IT Capital Expenditure as a Percentage of Business Entity Revenue, 2016	1.7%	0.8%	0.8%	1.0%	1.1%
	IT Project Budget as a Percentage of Business Entity Revenue, 2016	1.6%	0.9%	1.0%	1.0%	1.5%
	IT Operating Expenditure as a Percentage of Business Entity Revenue, 2016	1.7%	2.7%	1.7%	2.3%	3.5%
	Depreciation as a Percentage of IT Operating Expenditure, 2016	93.2%	14.3%	21.0%	20.6%	10.2%



TOTAL IT EXPENDITURE ALLOCATION

Allocation of Total IT Expenditure by Asset Class

Average Across Respondents, 2016



Note: Percentages in bars may not sum exactly to 100% due to rounding.

IT organizations allocated approximately one-third of their Expenditure to Innovation and Business Opportunity investments in 2016. This allocation matches the results from 2014 and 2015.

- **Innovation** spending is allocated to transformative sources of competitive advantage that are often outside your organization's current line of business. **Business opportunity** investments deliver new capabilities that drive the realization of business benefits.
- **Maintenance** spending refers to costs associated with the day-to-day operations of "keeping the lights on." **Mandatory** spending is that which is necessary to ensure legal or regulatory compliance.

Your Survey Responses for this Metric: [IT Expenditure Allocation by Asset Class\(B4\)](#)

[Current IT Budget](#)

Spending Allocation

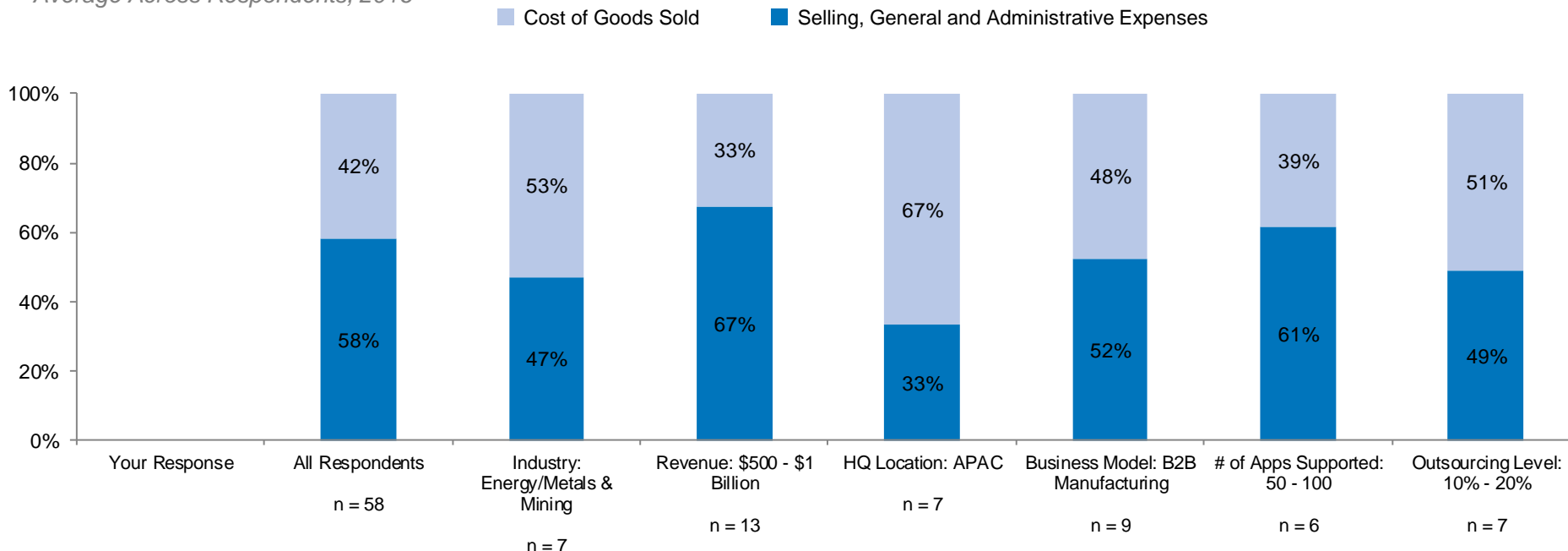
[Resourcing Model](#)

[Forecasts for the Next Fiscal Year](#)

TOTAL IT EXPENDITURE ALLOCATION BY BUSINESS FUNCTION

Allocation of Total IT Expenditure by Business Function

Average Across Respondents, 2016



Note: Percentages in bars may not sum exactly to 100% due to rounding.

On average, more IT Expenditure is allocated to Selling, General, and Administrative expenses than Cost of Goods Sold. However, less than 50% of all IT organizations track their spending in this way.

- **Cost of goods sold (COGS)** are the direct costs attributable to the production of the goods sold by a company. COGS includes operations, supply chain, and manufacturing.
- **Selling, general and administrative expenses (SG&A)** are all direct and indirect selling expenses and all general and administrative expenses. SG&A includes marketing, sales, HR, finance, procurement, R&D, legal and communications.

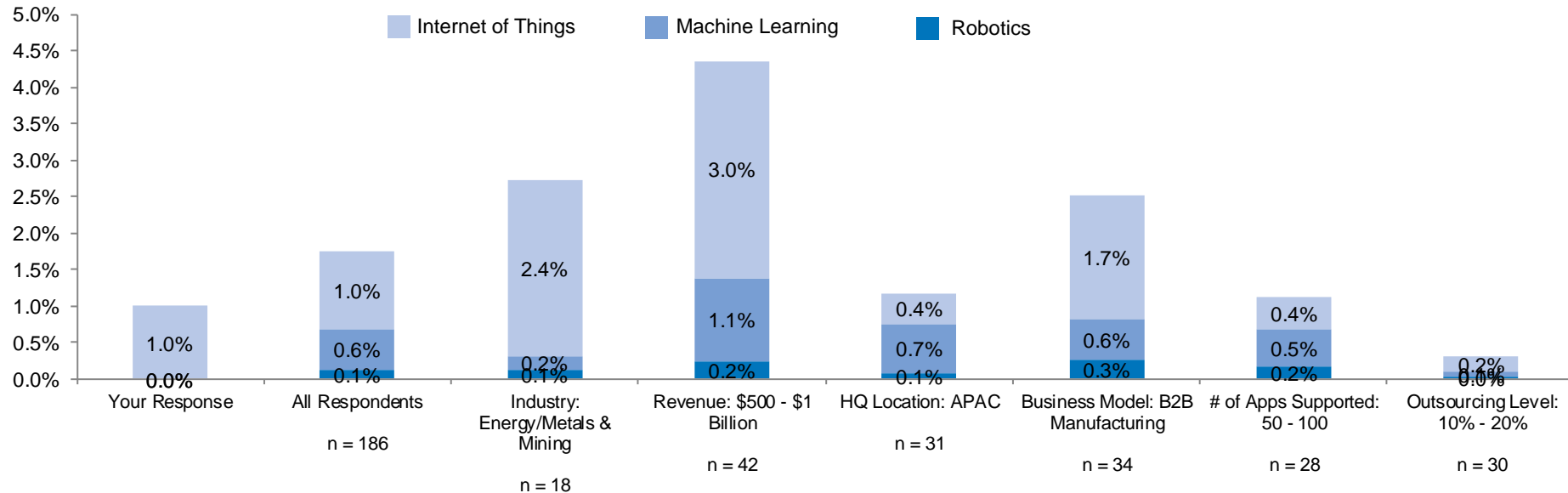
Your Survey Responses for this Metric: [Total IT Expenditure Allocation by Business Function\(B3\)](#)

[Current IT Budget](#)
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TOTAL IT EXPENDITURE ON SELECT DIGITIZATION INVESTMENTS

Percentage of Total IT Expenditure Allocated to Emerging Technology Type

Average Across Respondents, 2016



On average, spending on Internet of Things, Machine Learning, and Robotics amounts to 1.7% of all IT Expenditure.

- **Internet of Things:** The Internet of Things uses software and sensors to connect physical objects to the Internet to help organizations gather data on how the object is being used.
- **Machine Learning:** Machine learning is the use of algorithms to enable computers to continuously learn from patterns in data without being explicitly programmed to do so.
- **Robotics:** Robotics includes physical devices that automate manual tasks or augment human activity. Many robots are mobile and may operate either with rules-based software or cognitive intelligence approaches.

Your Survey Responses for this Metric: [Total IT Expenditure Allocation by Digitization Opportunity\(B6\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

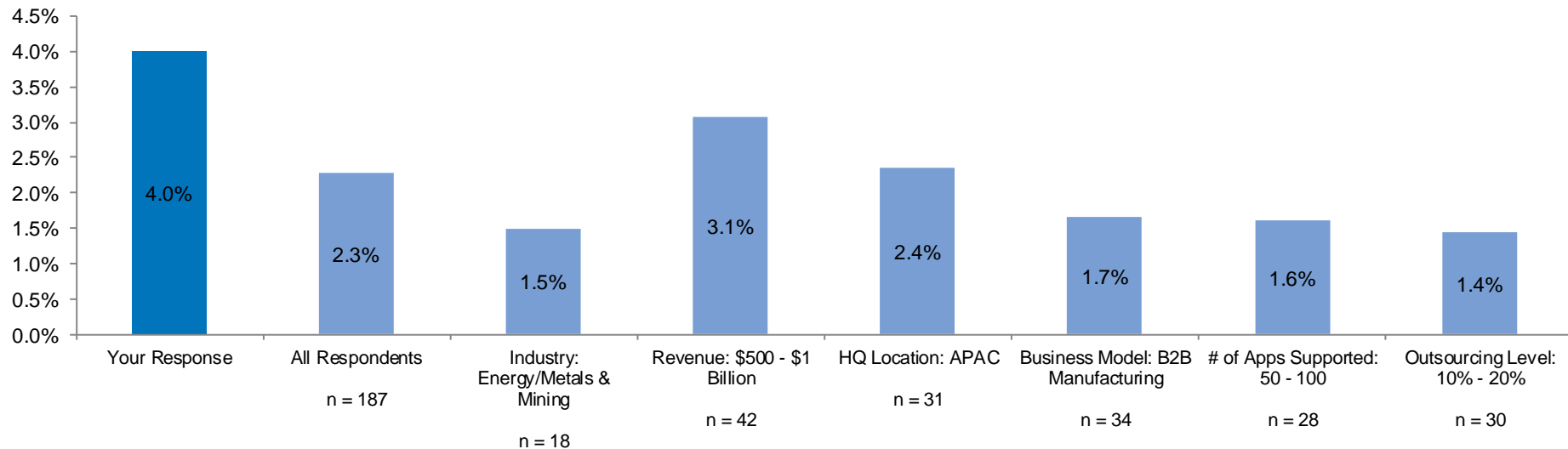
[Resourcing Model](#)

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MOBILE APPLICATION DEVELOPMENT

Percentage of Total IT Expenditure Allocated to Mobile Applications

Average Across Respondents, 2017 (E)



Investments in Mobile Applications can improve productivity, but need to reflect employee workflow and technology demand patterns to balance employee needs with enterprise cost.

- Mobile application development spending includes foundational efforts (such as investment in new hardware, training, SOA services, etc.) as well as spending to develop new-to-world mobile applications and to convert currently existing applications to mobile versions.
- Mobile application development spending does not include the cost of buying or supporting devices.
- Total IT expenditure includes IT operating expenditure and IT capital expenditure but excludes depreciation.

Your Survey Responses for this Metric: [Total IT Expenditure Allocated to Mobile Application Development\(B8\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

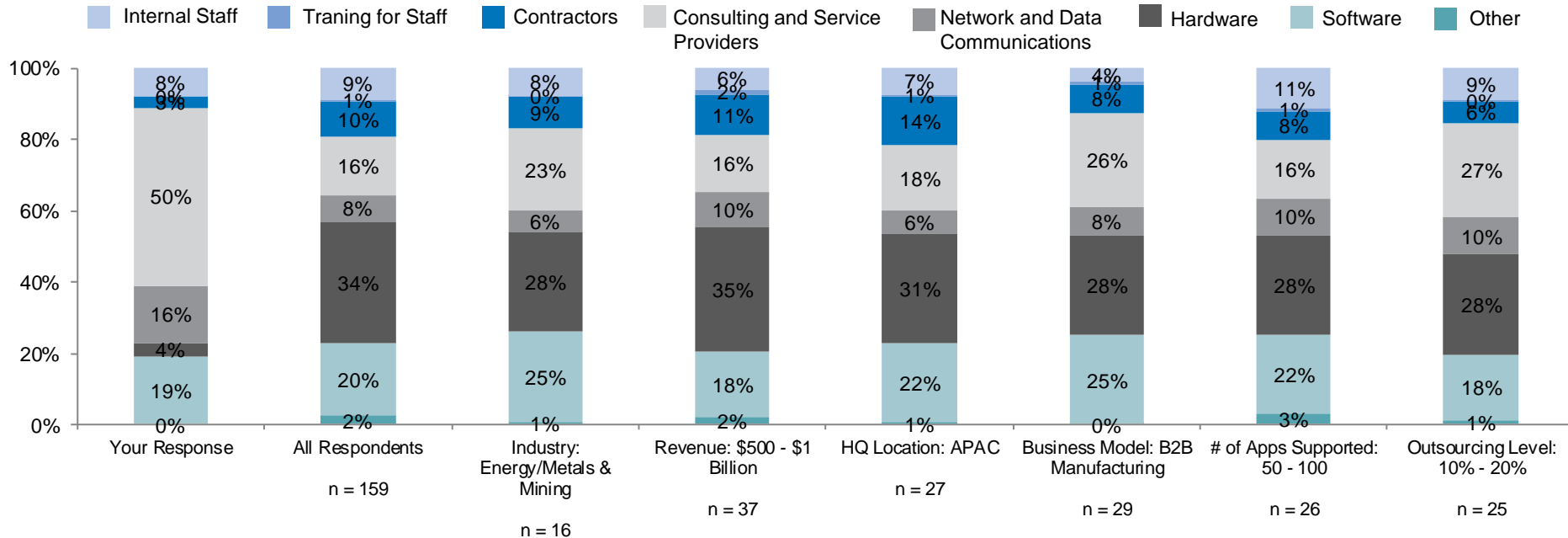
[Resourcing Model](#)

[Forecasts for the Next Fiscal Year](#)

IT CAPITAL EXPENDITURE ALLOCATION

Allocation of IT Capital Expenditure by Budget Category

Average Across Respondents, 2016



Note: Percentages in bars may not sum exactly to 100% due to rounding.

On average, more than half of IT Capital Expenditure is spent on Technology Hardware, Software, and Network Communications.

- Over the past year, we have observed flat growth in the capital expenditure allocation to contractors versus a 5% decrease for internal staff.
- IT capital expenditure is defined as one-time costs to buy a new asset or to upgrade an existing asset. The cost is spread across the useful life of the asset as depreciation/amortization.
- Consult the glossary of survey terms starting on page 87 for a [definition of each budget category](#).

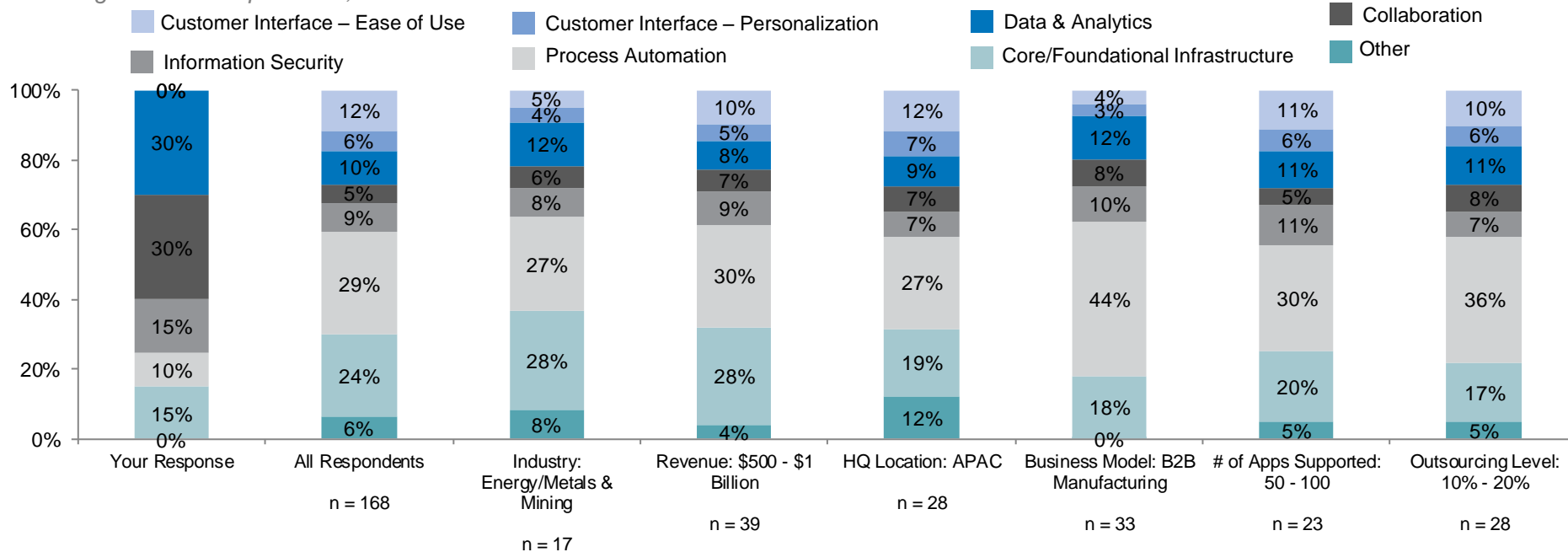
Your Survey Responses for this Metric: [Total IT Capital Expenditure Allocation\(C4\)](#)

[Current IT Budget](#)
[Spending Allocation](#)
[Resourcing Model](#)
[Forecasts for the Next Fiscal Year](#)

IT PROJECT BUDGET ALLOCATION

Allocation of IT Project Budget by Enablement Type

Average Across Respondents, 2016



Note: Percentages in bars may not sum exactly to 100% due to rounding.

In response to the threat of data breaches, CIOs are allocating significant budget dollars to Information Security and Data & Analytics in 2016.

- Information security and data & analytics both make up 9-10% of IT project budgets, each.
- CIOs continue to respond to end-customer demand regarding their technology, and are thus allocating 18% of the budget to the end-customer experience in 2016. This is up 3% from last year. The majority of this spending is allocated to ease of use investments.
- Consult the glossary of survey terms starting on page 87 for a [definition of each enablement type](#).

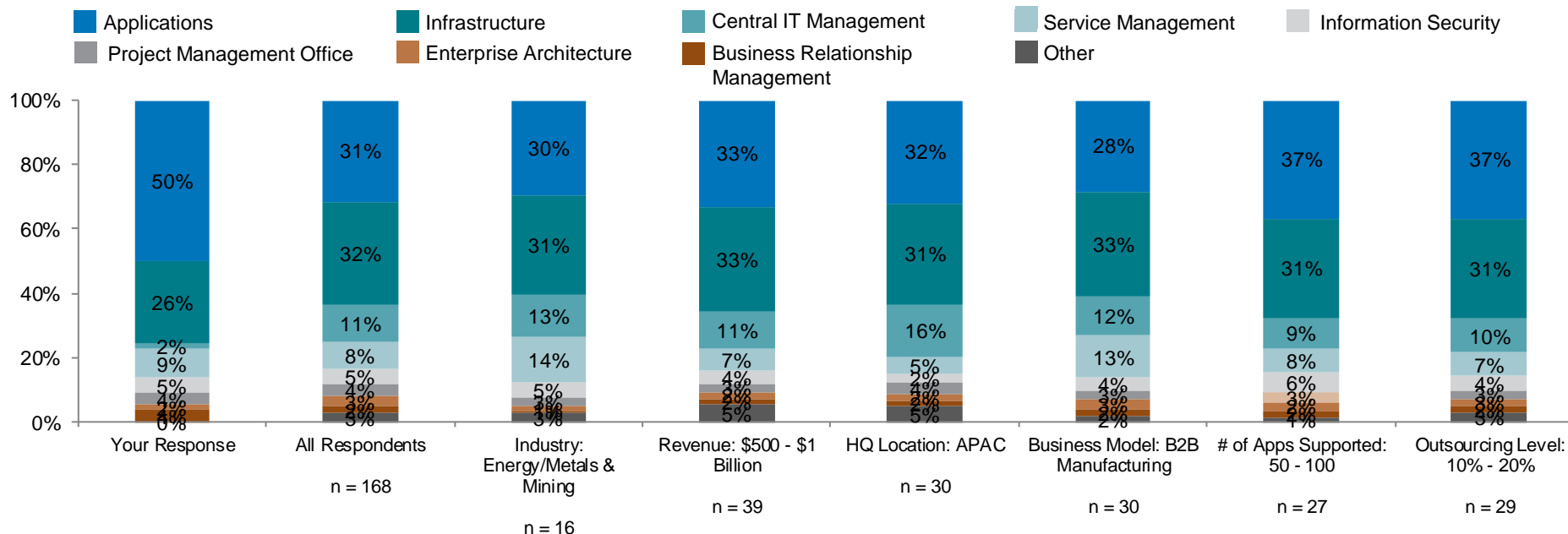
Your Survey Responses for this Metric: [Total IT Project Budget Allocation\(C6\)](#)

[Current IT Budget](#)
[Spending Allocation](#)
[Resourcing Model](#)
[Forecasts for the Next Fiscal Year](#)

IT OPERATING EXPENDITURE ALLOCATION

Allocation of IT Operating Expenditure by IT Sub-Function

Average Across Respondents, 2016



Note: Percentages in bars may not sum exactly to 100% due to rounding.

Applications and Infrastructure still make up approximately one-third of the operating expenditure each. Both have increased slightly; Applications' budget is up by 4% and Infrastructure's budget by 1% relative to 2015.

- The total IT operating expenditure includes costs related to hardware and software maintenance; application development; cost of operating, supporting, maintaining, and managing existing IT systems; and infrastructure components and services. IT operating expenditure excludes depreciation and all capital expenses.
- Consult the glossary of survey terms starting on page 87 for a [definition of each function](#).

Your Survey Responses for this Metric: [Total IT Operating Expenditure Allocation\(C1\)](#)

[Current IT Budget](#)

Spending Allocation

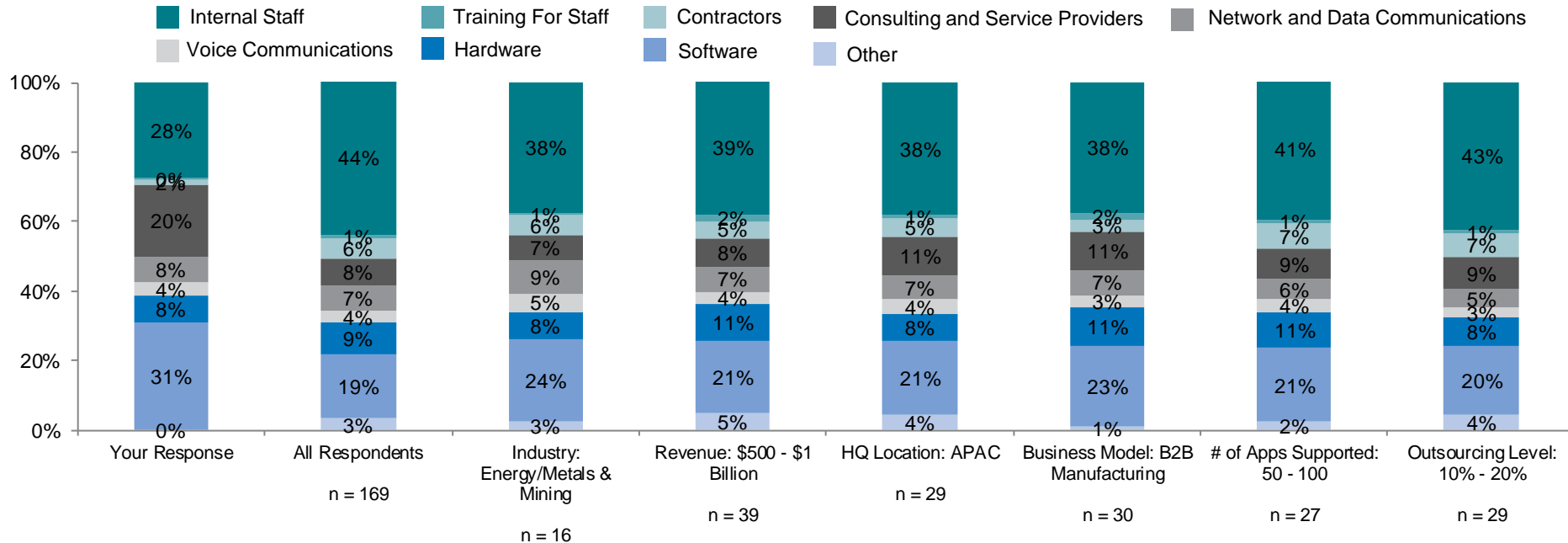
[Resourcing Model](#)

[Forecasts for the Next Fiscal Year](#)

IT OPERATING EXPENDITURE ALLOCATION

Allocation of IT Operating Expenditure by Budget Category

Average Across Respondents, 2016



Note: Percentages in bars may not sum exactly to 100% due to rounding.

Consistent with the last several years, roughly half of IT Operating Expenditure is allocated to workforce spending, which consists of Internal Staff, Training for Staff, Contractors, and Consulting and Service Providers.

- IT operating expenditure excludes depreciation and all capital expenses.
- Consult the glossary of survey terms starting on page 87 for a [definition of each budget category](#).

Your Survey Responses for this Metric: [Total IT Operating Expenditure Allocation\(C2\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

[Resourcing Model](#)

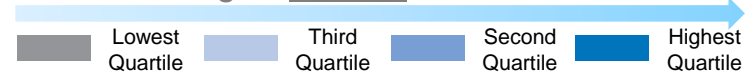
[Forecasts for the Next Fiscal Year](#)

YOUR METRICS KEY TAKEAWAYS

Key Metrics Dashboard for IT Spending Allocation

Your Quartile Position Relative to Peer Group

Direction of Higher Numeric Value



Metric Group	Metrics	Your Value	All Respondents	Industry: Energy/Metals & Mining	Revenue: \$500 - \$1 Billion	HQ Location: APAC
			N = 236 Median Value	N = 20 Median Value	N = 54 Median Value	N = 41 Median Value
SPENDING ALLOCATION	Total IT Expenditure Allocated to Innovation and Business Opportunity, 2016	N/A	26%	22%	25%	25%
	Allocation of Total IT Expenditure to Cost of Goods Sold, 2016	N/A	39%	59%	30%	80%
	Share of Project Budget Allocated to Collaboration, Data & Analytics, and Customer Interface, 2016	60%	30%	17%	30%	39%

Note: Total IT Expenditure is allocated to Cost of Goods Sold (COGS) and Selling, General, and Administrative Expense (SG&A). The allocation to SG&A is: 100% – the Allocation to COGS.

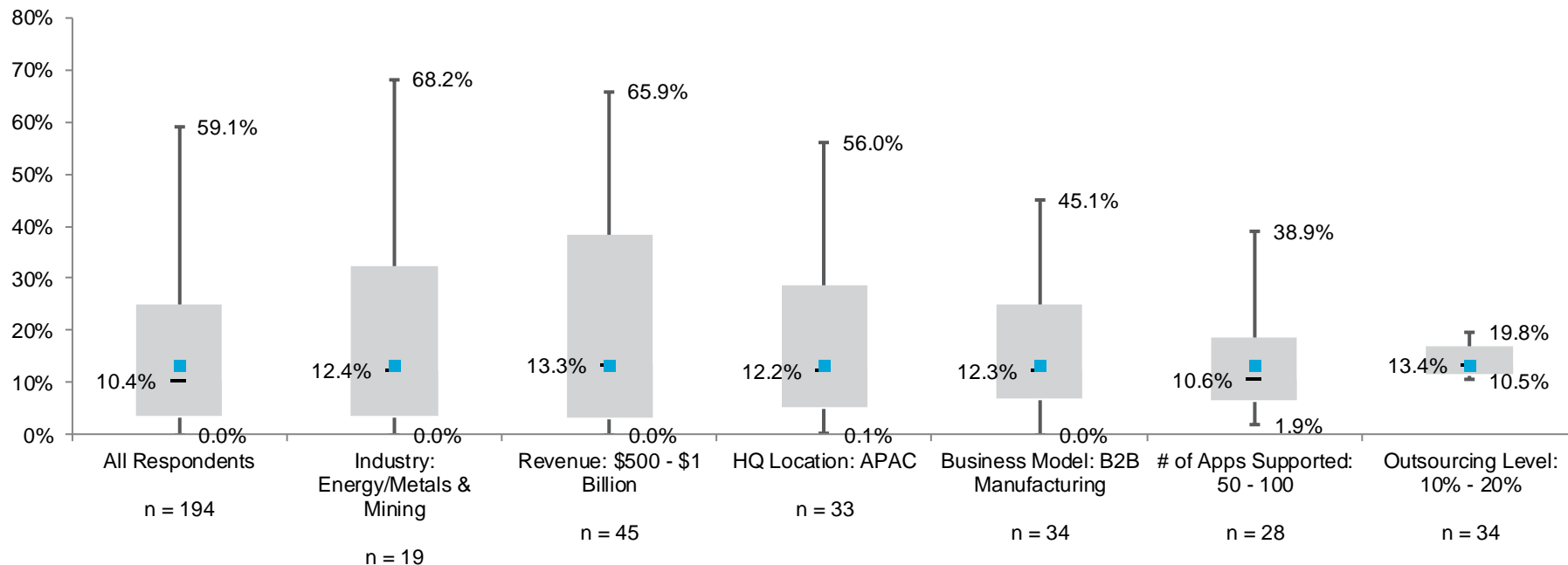


OUTSOURCING: TOTAL IT EXPENDITURE

Percentage of Total IT Expenditure Outsourced to Third-Party Providers

Your Response: 13.3%

2016



The median IT organization outsources 10.4% of its Total IT Expenditure to third-party providers.

- Leading organizations are selective in determining which activities are outsourced, and this discrimination pushes those organizations to outsource less overall.
- Outsourcing level is defined as the percentage of your total IT expenditure that is incurred by activities completed by external providers.
- Consultants and service providers are included in outsourcing, while contractors are considered “in-house”.

Your Survey Responses for this Metric: [Percentage of Total IT Expenditure Outsourced\(B7\)](#)

[Current IT Budget](#)

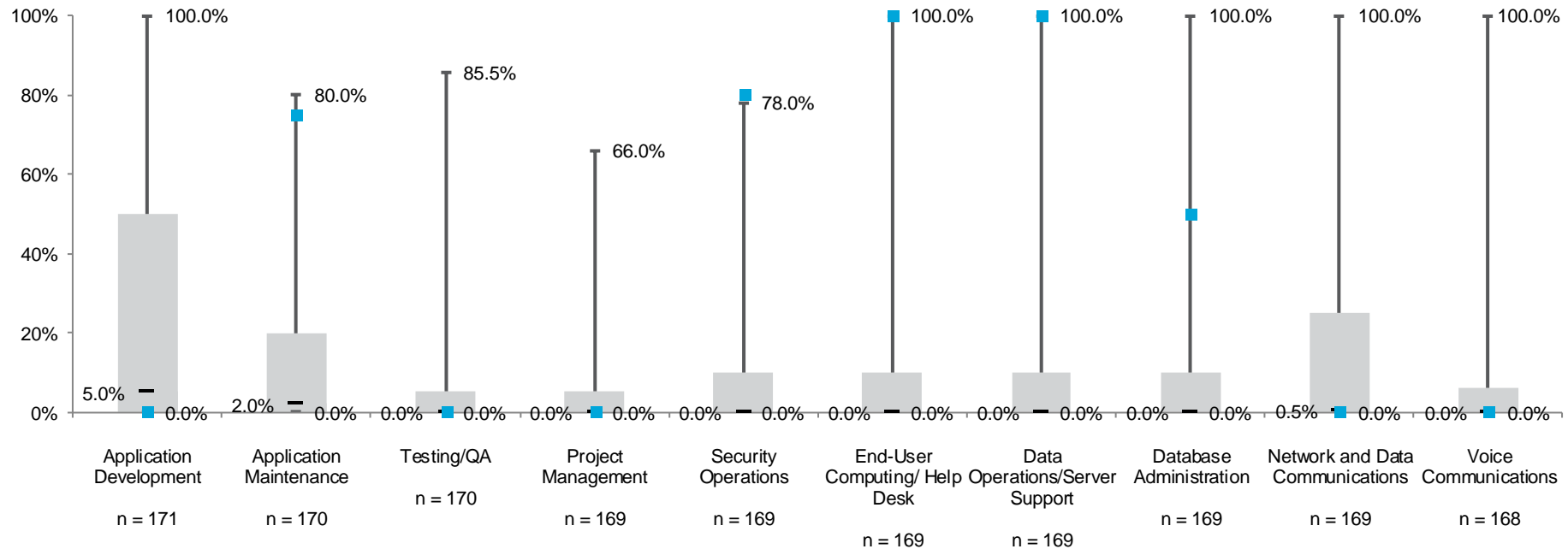
[Spending Allocation](#)

Resourcing Model

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OUTSOURCING BY SUB-FUNCTION

Percentage of Total IT Sub-Function Expenditure Outsourced 2016



Application Development and Application Maintenance continue to be the two IT sub-functions that are most often outsourced, closely followed by Network and Data Communications.

- Outsourcing level is defined as the percentage of your total IT expenditure that is incurred by activities completed by external providers.
- Consultants and service providers are included in outsourcing, while contractors are considered “in-house”.
- Consult the glossary of survey terms starting on page 87 for a [definition of each sub-function](#).

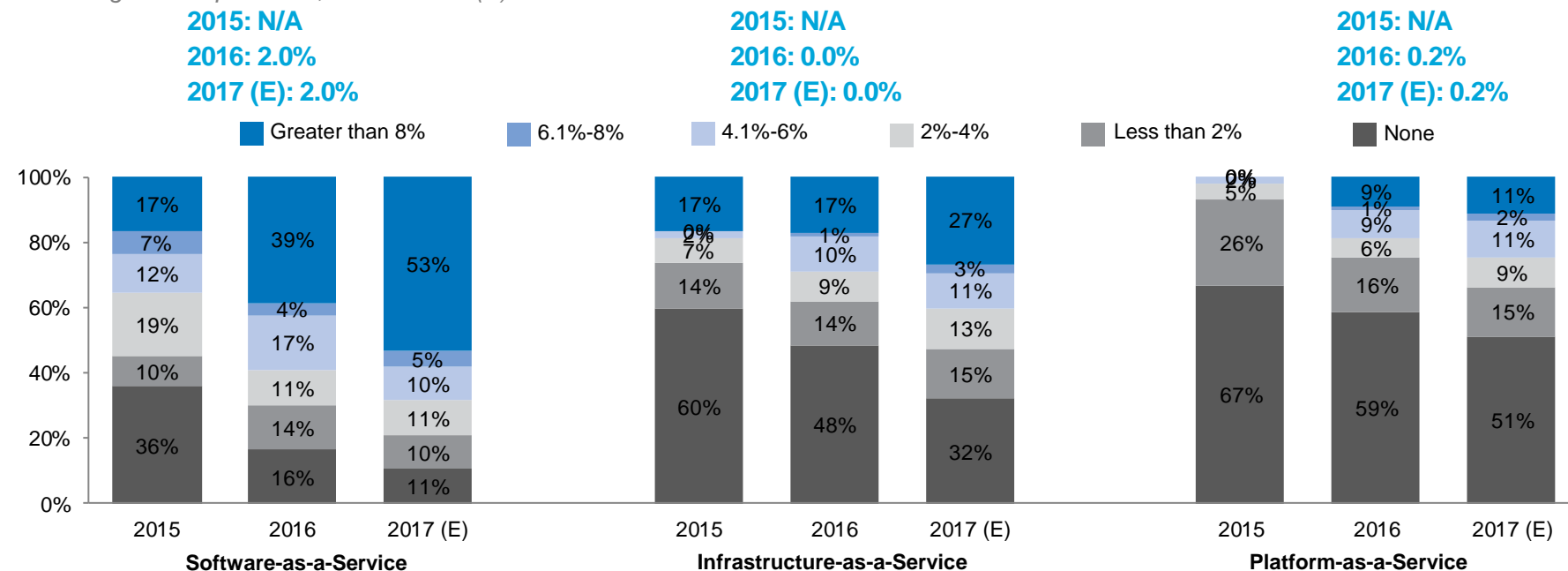
Your Survey Responses for this Metric: [Percentage of Total IT Sub-Function Expenditure Outsourced\(B8\)](#)

[Current IT Budget](#)
[Spending Allocation](#)
[Resourcing Model](#)
[Forecasts for the Next Fiscal Year](#)

MIGRATION TO THE CLOUD

Share of Total IT Expenditure Allocated to Cloud Sourcing

Percentage of Respondents, 2015 – 2017 (E)



Note: Percentages in bars may not sum exactly to 100% due to rounding.

n=180, 2016

Movement to cloud-based solutions continues as IT organizations enable greater service responsiveness and cost flexibility.

- **Software-as-a-Service (SaaS)** includes applications accessible through a web browser where the consumer does not manage the underlying infrastructure or individual application capabilities, (e.g., Salesforce.com, Google Apps).
- **Infrastructure-as-a-Service (IaaS)** includes fundamental computing resources where the consumer does not manage the underlying infrastructure but has control over the deployed application and the operating systems, (e.g., Amazon EC2, Rackspace).
- **Platform-as-a-Service (PaaS)** includes consumer-created or acquired applications using programming languages and tools furnished by a provider, where the consumer does not manage the underlying cloud infrastructure but has control over the deployed applications, (e.g., Microsoft Azure, Apache Stratos).

Your Survey Responses for this Metric: [Share of Total IT Expenditure Allocated to Cloud Sourcing\(B4\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

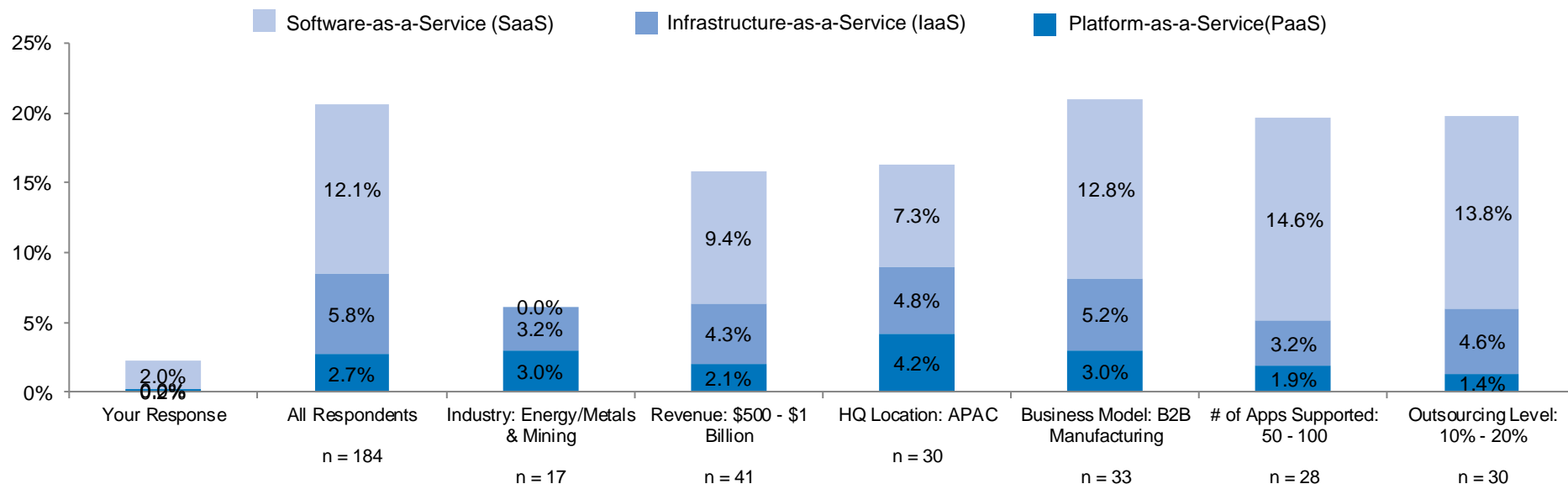
[Resourcing Model](#)

[Forecasts for the Next Fiscal Year](#)

MIGRATION TO THE CLOUD – 2017 DETAIL

Percentage of Total IT Expenditure Allocated to Cloud Sourcing

Average Across Respondents, 2017 (E)



IT organizations continue to invest most in Software-as-a-Service followed by Infrastructure-as-a-Service.

- **Software-as-a-Service (SaaS)** includes applications accessible through a web browser where the consumer does not manage the underlying infrastructure or individual application capabilities, (e.g., Salesforce.com, Google Apps).
- **Infrastructure-as-a-Service (IaaS)** includes fundamental computing resources where the consumer does not manage the underlying infrastructure but has control over the deployed application and the operating systems, (e.g., Amazon EC2, Rackspace).
- **Platform-as-a-Service (PaaS)** includes consumer-created or acquired applications using programming languages and tools furnished by a provider, where the consumer does not manage the underlying cloud infrastructure but has control over the deployed applications, (e.g., Microsoft Azure, Apache Stratos).

Your Survey Responses for this Metric: [Percentage of Total IT Expenditure Allocated to Cloud Sourcing\(B4\)](#)

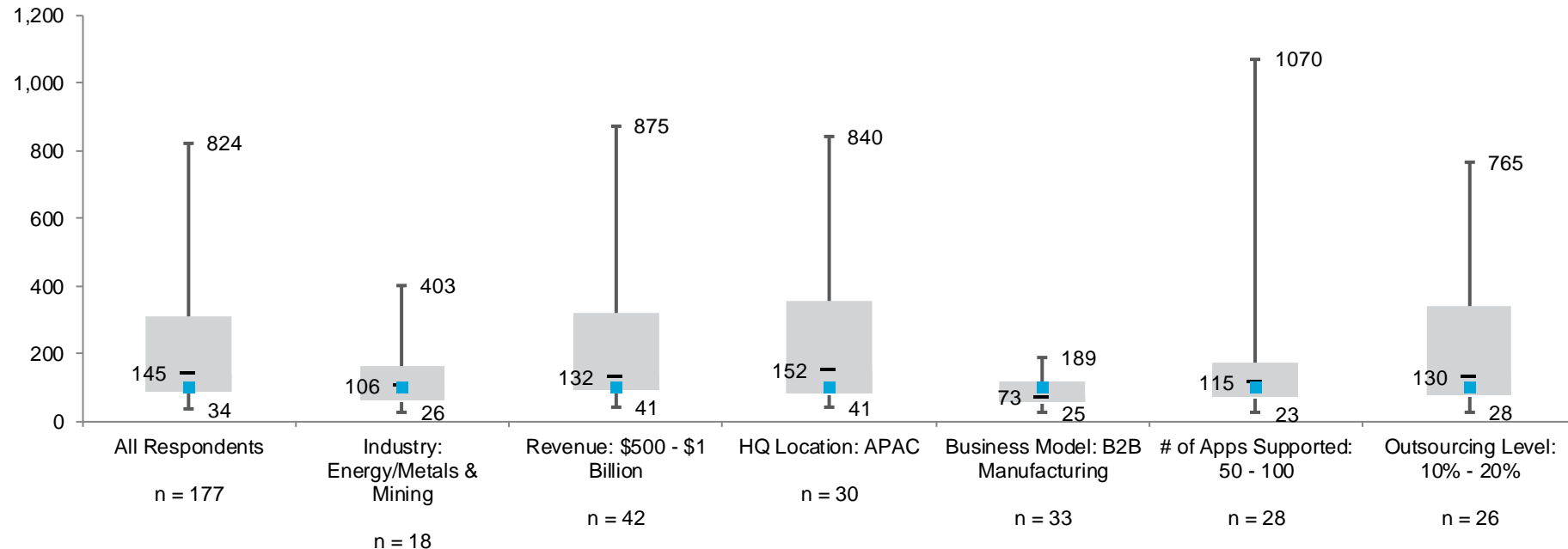
[Current IT Budget](#)
[Spending Allocation](#)
[Resourcing Model](#)
[Forecasts for the Next Fiscal Year](#)

TOTAL IT STAFF BY REVENUE

Total IT Staff per Billion U.S. Dollars in Business Entity Revenue

Your Response: 102

2016



Benchmark your staffing level to ensure adequate support for your organization.

- A full-time equivalent (FTE), as determined by the organization's standard working hours, can represent either a staff member working full-time or the aggregation of part-time employees, such as two part-time employees each working 50% of standard hours.
- Total IT staff includes internal staff and contractors, but does not include outsourced job functions where responsibility is entirely handed off to a third party.
- Business entity revenue is net sales, excluding expected returns. Government organizations provided their agencies' enacted budget/annual appropriations.

Your Survey Responses for this Metric: [Internal IT FTEs\(D1\)](#) [IT Contractors\(D1\)](#) [Business Entity Revenue\(A4\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

[Resourcing Model](#)

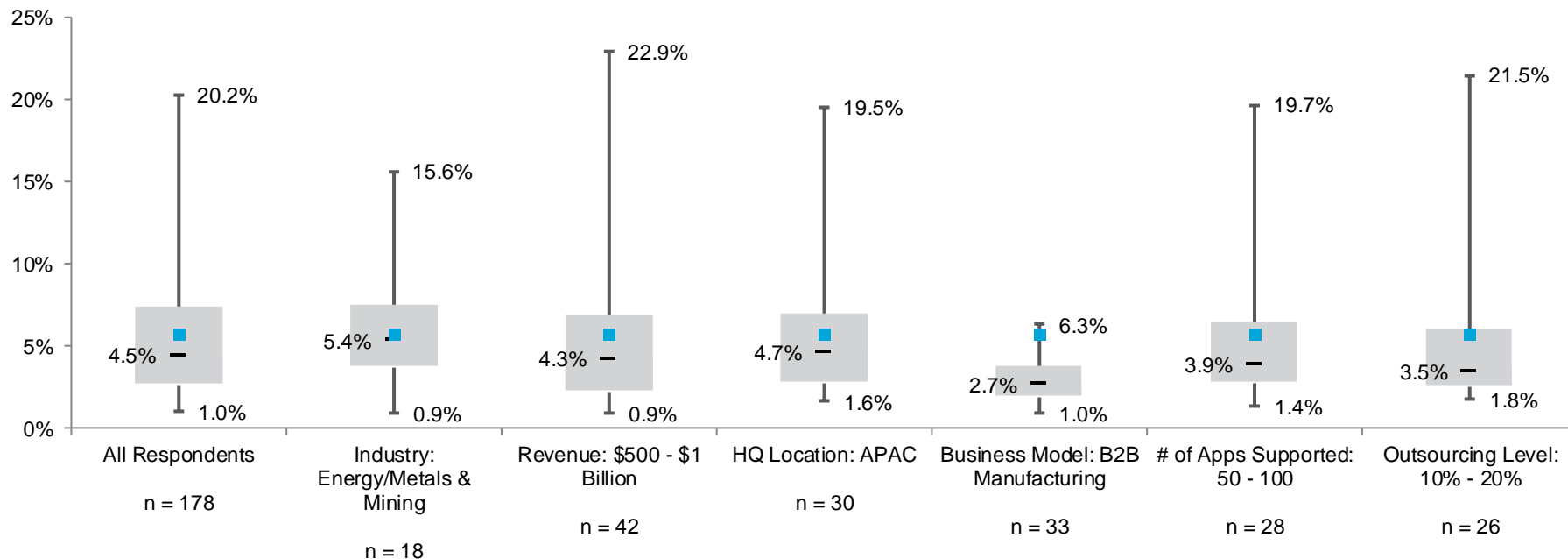
[Forecasts for the Next Fiscal Year](#)

TOTAL IT STAFF BY BUSINESS ENTITY FTEs

Total IT Staff as a Percentage of All Business Entity FTEs

Your Response: 5.7%

2016



In 2016, 4.5% of all Business Entity employees work in IT at the median. This percentage is up from 4.3% in 2015.

- Total IT staff includes both internal IT FTEs and contractors, but does not include outsourced job functions where responsibility has been entirely handed off to a third party. Total IT staff can be an aggregation of part-time employees.
- Business entity full-time equivalents (FTE) can be an aggregation of part-time employees. Business entity FTEs include both internal employees and contractors.

Your Survey Responses for this Metric: [Internal IT FTEs\(D1\)](#) [IT Contractors\(D1\)](#) [Business Entity FTEs\(A4\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

[Resourcing Model](#)

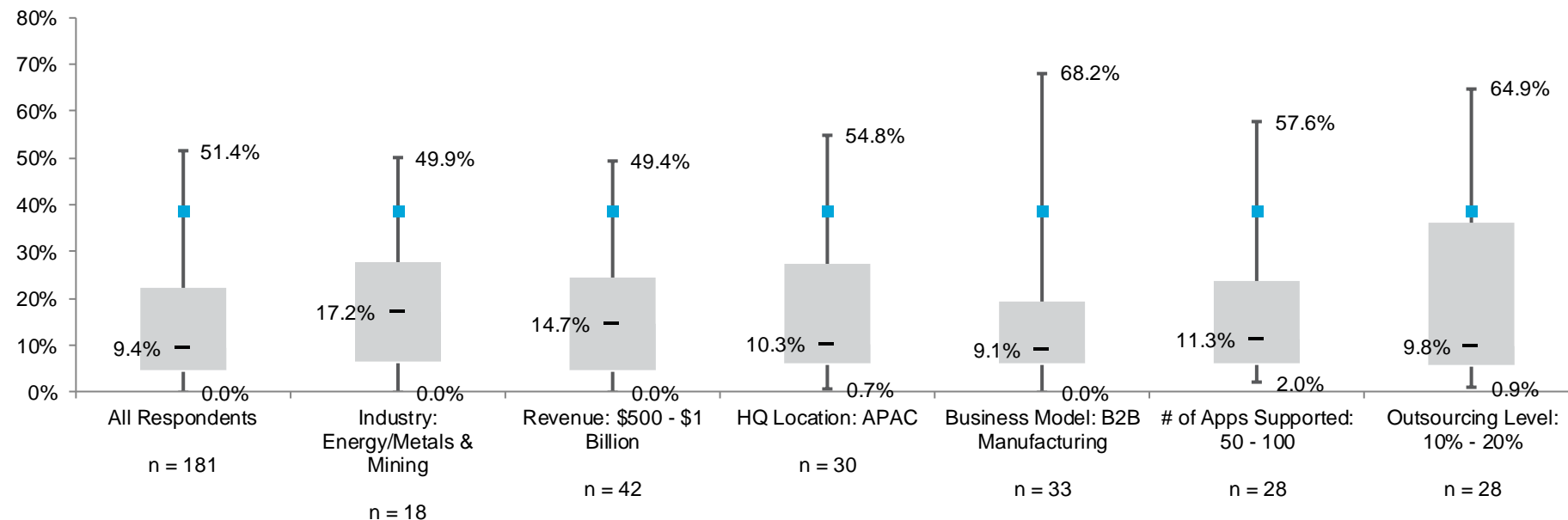
[Forecasts for the Next Fiscal Year](#)

IT CONTRACTORS AS A SHARE OF TOTAL IT STAFF

IT Contractors as a Percentage of Total IT Staff

Your Response: 38.6%

2016



Calibrate your use of IT Contractors to ensure that your organization is not relying too heavily on these more expensive resources.

- Total IT staff includes both internal IT FTEs and contractors, but does not include outsourced job functions where responsibility has been entirely handed off to a third party. Total IT staff can be an aggregation of part-time employees.
- Contractors provide services under terms specified in a contract, usually used for staff augmentation. Like an internal FTE, a contractor often works on-site. Unlike an internal FTE, a contractor performs specific services for a specific period of time and for specific amounts of money.

Your Survey Responses for this Metric: [Internal IT FTEs\(D1\)](#)

[IT Contractors\(D1\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

[Resourcing Model](#)

[Forecasts for the Next Fiscal Year](#)

TOTAL IT STAFFING ALLOCATION

Percentage of Total IT Staff by Sub-Function

Average Across Respondents, 2016

Two IT sub-functions with the highest allocation of staff within each peer group.

Functions	Your Response	All Respondents	Industry: Energy/Metals & Mining	Revenue: \$500 - \$1 Billion	HQ Location: APAC	Business Model: B2B Manufacturing	# of Apps Supported: 50 - 100	Outsourcing Level: 10%-20%
Application Development	10.5%	17.2%	12.2%	18.2%	13.6%	16.7%	17.3%	21.9%
Application Maintenance	10.5%	15.8%	20.0%	17.6%	16.3%	18.3%	17.5%	18.7%
End-User Computing/Help Desk	15.8%	13.6%	13.2%	13.4%	11.1%	15.2%	13.7%	10.9%
Data Operations/Server Support	10.5%	8.4%	9.8%	8.3%	7.4%	9.8%	8.5%	7.9%
Network and Data Communications	0.0%	6.2%	5.6%	6.1%	5.7%	6.2%	5.0%	4.7%
Central IT Management	3.5%	5.8%	5.4%	4.8%	6.7%	6.8%	5.7%	6.3%
PMO	8.8%	5.4%	9.3%	4.8%	8.4%	4.1%	4.2%	4.5%
Other Staff	0.0%	4.0%	4.7%	2.0%	5.4%	0.0%	3.1%	3.6%
Business Relationship Management	8.8%	3.8%	2.0%	3.3%	3.9%	4.3%	3.3%	3.4%
Service Management	5.3%	3.3%	3.1%	3.0%	3.9%	2.3%	3.1%	2.2%

n=164

Your Survey Responses for this Metric: [Total IT Staff by Sub-Function\(D2\)](#)

(continued on next page)

[Current IT Budget](#)

[Spending Allocation](#)

[Resourcing Model](#)

[Forecasts for the Next Fiscal Year](#)

TOTAL IT STAFFING ALLOCATION (CONTINUED)

Percentage of Total IT Staff by Sub-Function

Average Across Respondents, 2016

Two IT sub-functions with the highest allocation of staff within each peer group.

Functions	Your Response	All Respondents	Industry: Energy/Metals & Mining	Revenue: \$500 - \$1 Billion	HQ Location: APAC	Business Model: B2B Manufacturing	# of Apps Supported: 50 - 100	Outsourcing Level: 10%-20%
Security Operations	1.8%	3.3%	4.0%	2.9%	2.5%	2.6%	4.2%	2.6%
Testing/QA	3.5%	3.1%	1.2%	3.7%	3.0%	1.7%	2.7%	3.2%
Database Administration	8.8%	3.0%	2.7%	4.5%	3.2%	3.3%	3.1%	3.4%
Enterprise Architecture	2.6%	2.4%	2.3%	2.2%	2.9%	2.8%	3.2%	2.7%
Voice Communications	0.0%	1.5%	1.2%	1.4%	1.3%	1.7%	1.7%	1.3%
Strategy/Planning	1.8%	1.1%	1.0%	0.9%	1.8%	1.1%	0.8%	0.8%
Vendor Management	2.6%	0.9%	1.2%	0.6%	1.5%	1.2%	0.7%	0.6%
IT Finance	3.5%	0.9%	0.9%	1.6%	0.9%	1.0%	1.6%	0.8%
IT Human Resources	1.8%	0.4%	0.3%	0.7%	0.4%	0.7%	0.6%	0.4%

Note: Percentages in columns may not sum exactly to 100% due to rounding.

n=164

Compare your staffing allocation with peers' to assess your IT talent needs.

- These data include both internal FTEs and contractors, but exclude employees who do not fall under the control of the IT organization.

Your Survey Responses for this Metric: [Total IT Staff by Sub-Function\(D2\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

[Resourcing Model](#)

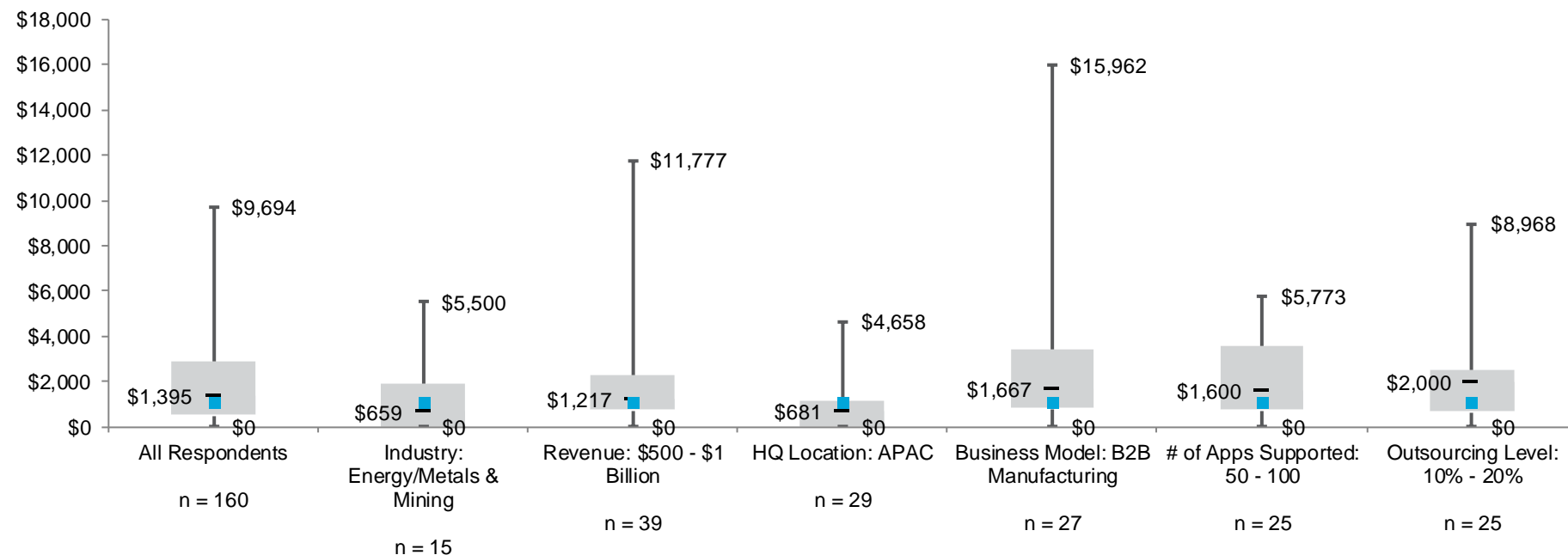
[Forecasts for the Next Fiscal Year](#)

TRAINING BUDGET PER INTERNAL IT FTE

Training Budget Per Internal IT FTE

USD, 2016

Your Response: \$1,051



At the median, IT organizations spend \$1,395 per internal IT FTE on training.

- Internal IT FTEs do not include contractors.

Your Survey Responses for this Metric: [IT Capital Expenditure Allocation\(C4\)](#) [IT Operating Expenditure Allocation\(C2\)](#) [Internal IT FTEs\(D1\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

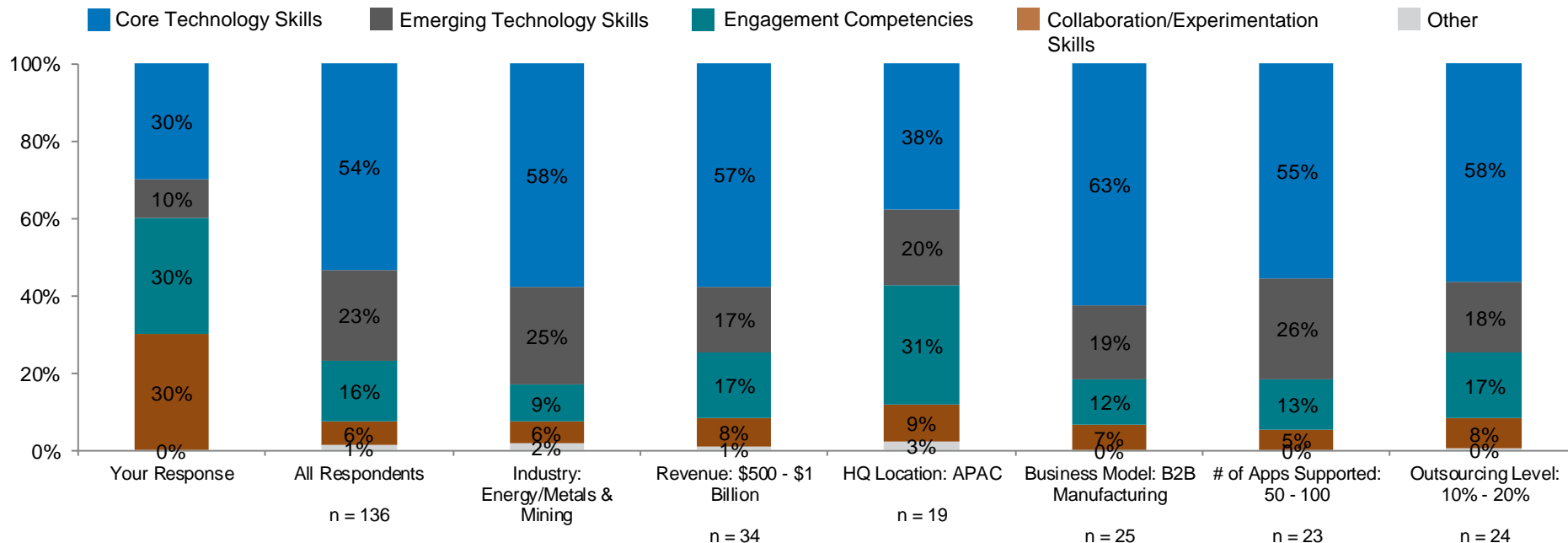
Resourcing Model

[Forecasts for the Next Fiscal Year](#)

IT TRAINING BUDGET ALLOCATION

Allocation of IT Training Budget by Skill and Competency Type

Average Across Respondents, 2016



Note: Percentages in columns may not sum exactly to 100% due to rounding.

While CIOs recognize the need for engagement competencies and collaboration/experimentation skills to respond a dynamic business environment, the bulk of the training budget is still allocated to technology skills development.

- Engagement competencies include skills such as learning agility, influence, and communication.

Your Survey Responses for this Metric: [IT Training Budget Allocation\(C3\)](#)

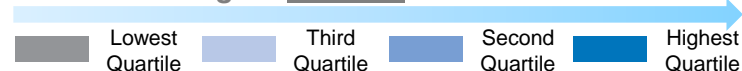
[Current IT Budget](#)
[Spending Allocation](#)
[Resourcing Model](#)
[Forecasts for the Next Fiscal Year](#)

YOUR METRICS KEY TAKEAWAYS

Key Metrics Dashboard for Resourcing Model

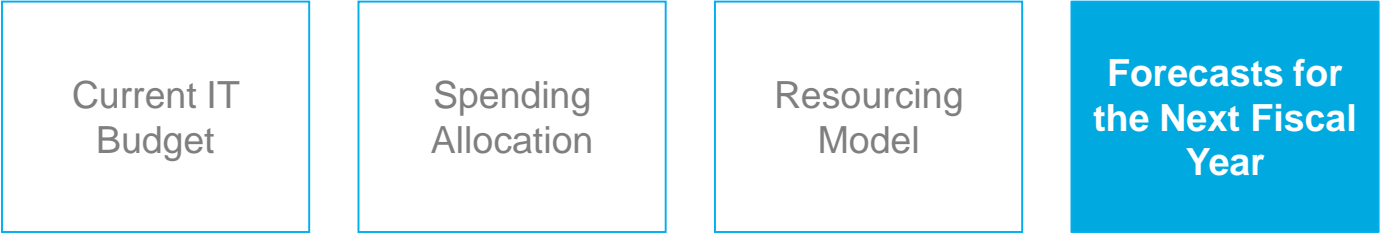
Your Quartile Position Relative to Peer Group

Direction of Higher Numeric Value



Metric Group	Metrics	Your Value	All Respondents	Industry: Energy/Metals & Mining	Revenue: \$500 - \$1 Billion	HQ Location: APAC
			N = 236 Median Value	N = 20 Median Value	N = 54 Median Value	N = 41 Median Value
RESOURCING MODEL	Percentage of Total IT Expenditure Outsourced to Third-Party Providers, 2016	13.3%	10.4%	12.4%	13.3%	12.2%
	Percentage of Total IT Expenditure Allocated to Cloud Sourcing, 2016	2.2%	9.0%	2.0%	7.5%	4.5%
	IT FTEs per Billion USD in Business Entity Revenue, 2016	102	145	106	132	152
	IT FTEs as a Percentage of All Business Entity FTEs, 2016	5.7%	4.5%	5.4%	4.3%	4.7%
	IT Contractors as a Percentage of IT FTEs, 2016	38.6%	9.4%	17.2%	14.7%	10.3%
	Training Budget Per Internal IT FTE, USD, 2016	\$1,051	\$1,395	\$659	\$1,217	\$681

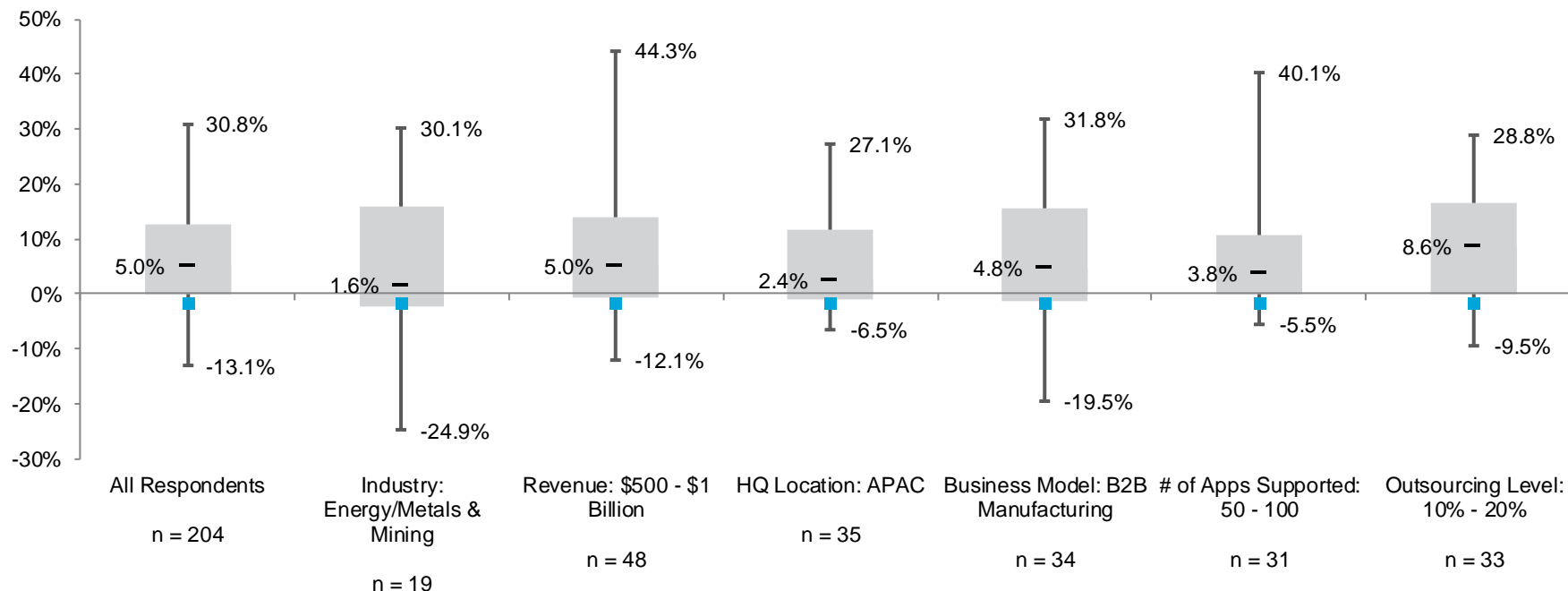
[Current IT Budget](#)
[Spending Allocation](#)
[Resourcing Model](#)
[Forecasts for the Next Fiscal Year](#)



TOTAL IT INVESTMENT CHANGE

Expected Change in Total IT Investment
2016 – 2017 (E)

Your Response: -1.7%



Change in Total IT Investment is expected to grow by 5.0% at the median in 2017.

- Leading IT organizations establish triggers for inter-cycle adjustments to reflect shifts in strategic priorities.
- Total IT investment includes IT operating expenditure, IT capital expenditure, and depreciation. This measure is an all-inclusive view of the cost to run IT in a given year. By contrast, IT expenditure includes IT operating expenditure and IT capital expenditure but excludes depreciation, providing a cash view of IT's spending for a given year.

Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#)

[Depreciation\(B1a\)](#)

[IT Capital Expenditure\(B1b\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

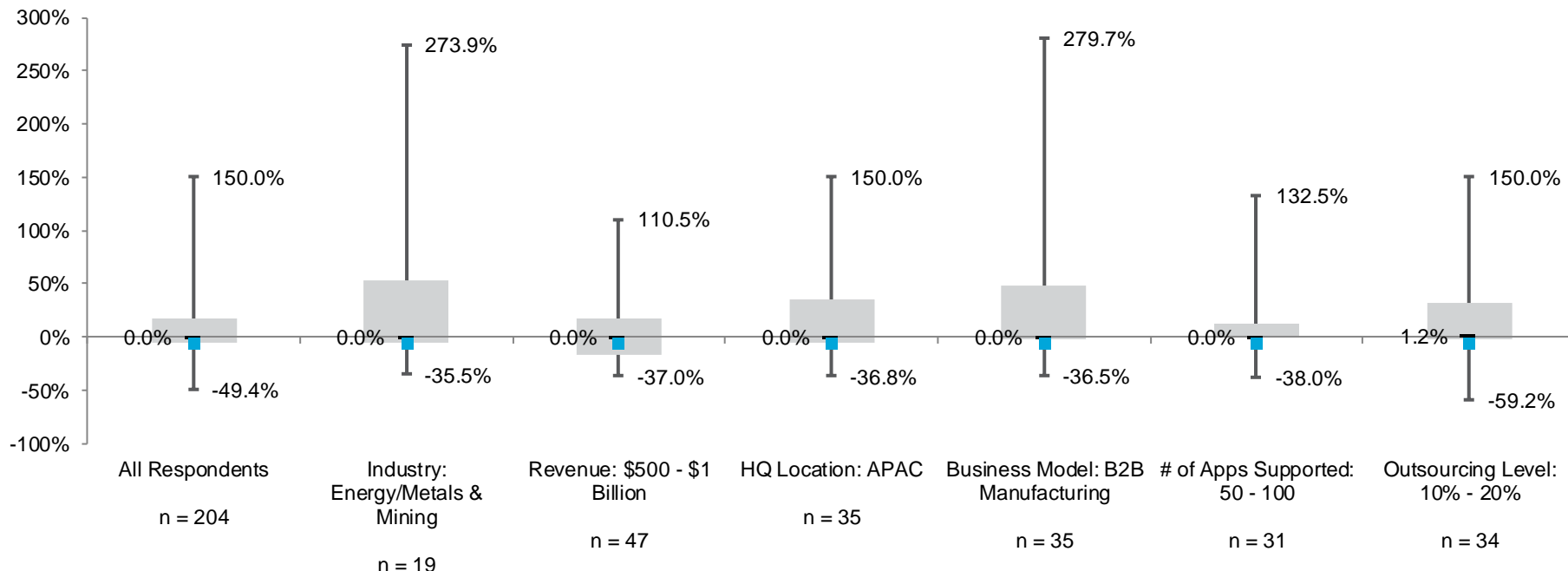
[Resourcing Model](#)

Forecasts for the Next Fiscal Year

EXPECTED IT CAPITAL EXPENDITURE CHANGE

Expected Change in IT Capital Expenditure
2016 – 2017 (E)

Your Response: -4.9%



IT Capital Expenditure is not expected to change at the median. This is likely a conservative estimate, as organizations tend to adjust expectations as visibility into demand for capital-intensive IT Projects becomes more clear.

- Organizations tend to adjust their expectations in the coming months as visibility into demand for capital-intensive IT projects becomes more clear.
- IT capital expenditure is defined as one-time costs to buy a new asset or to upgrade an existing asset. The cost is spread across the useful life of the asset as depreciation/amortization.

Your Survey Responses for this Metric: [IT Capital Expenditure\(B1b\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

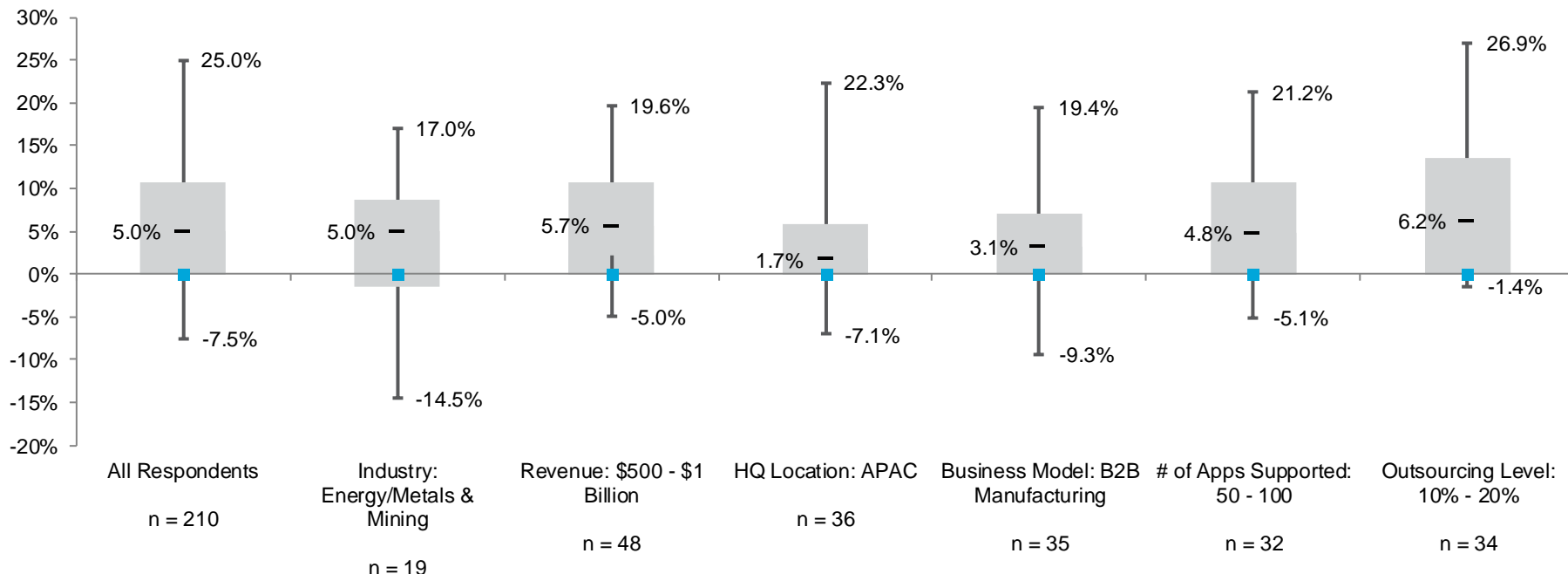
[Resourcing Model](#)

Forecasts for the Next Fiscal Year

EXPECTED IT OPERATING EXPENDITURE CHANGE

Expected Change in IT Operating Expenditure
2016 – 2017 (E)

Your Response: 0.0%



At the median, IT organizations expect a 5.0% growth in IT Operating Expenditure for 2016.

- Last year, expected change in IT operating expenditure was 2.0%, but IT organizations saw an actual increase of 3.4% from 2015. Actual growth tends to exceed expectations every year.
- IT operating expenditure does not include depreciation/amortization or IT capital expenditure.

Your Survey Responses for this Metric: [IT Operating Expenditure\(B1a\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

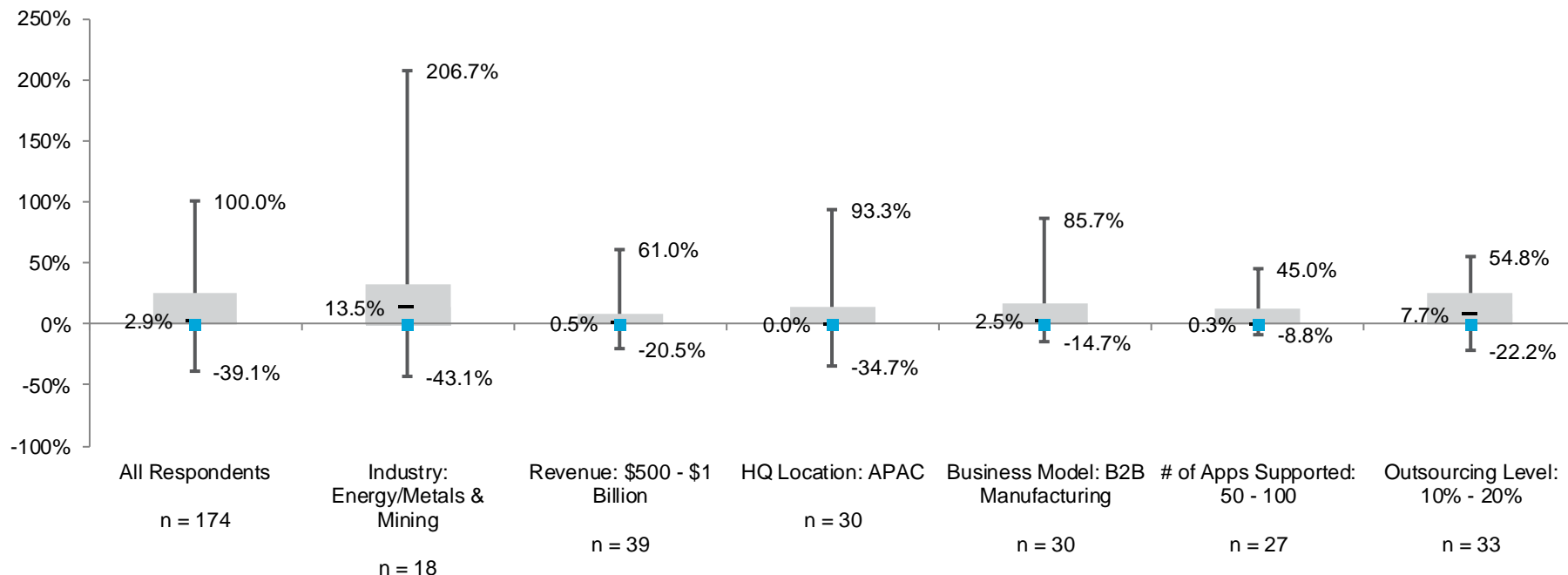
[Resourcing Model](#)

Forecasts for the Next Fiscal Year

EXPECTED IT OUTSOURCING CHANGE

Change in Total IT Expenditure Outsourced to Third-Party Providers
2016 – 2017 (E)

Your Response: 0.0%



Total IT Expenditure dedicated to third-party providers is expected to grow by 2.9% at the median.

- IT organizations are more frequently using newer-niche vendors, as they look to a widening range of vendors to support capabilities that drive competitive advantage.
- Outsourcing level is defined as the percentage of your total IT expenditure that is incurred by activities completed by external providers.
- Consultants and service providers are included in outsourcing, while contractors are considered “in-house”.

Your Survey Responses for this Metric: [Total IT Expenditure Outsourced\(B7\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

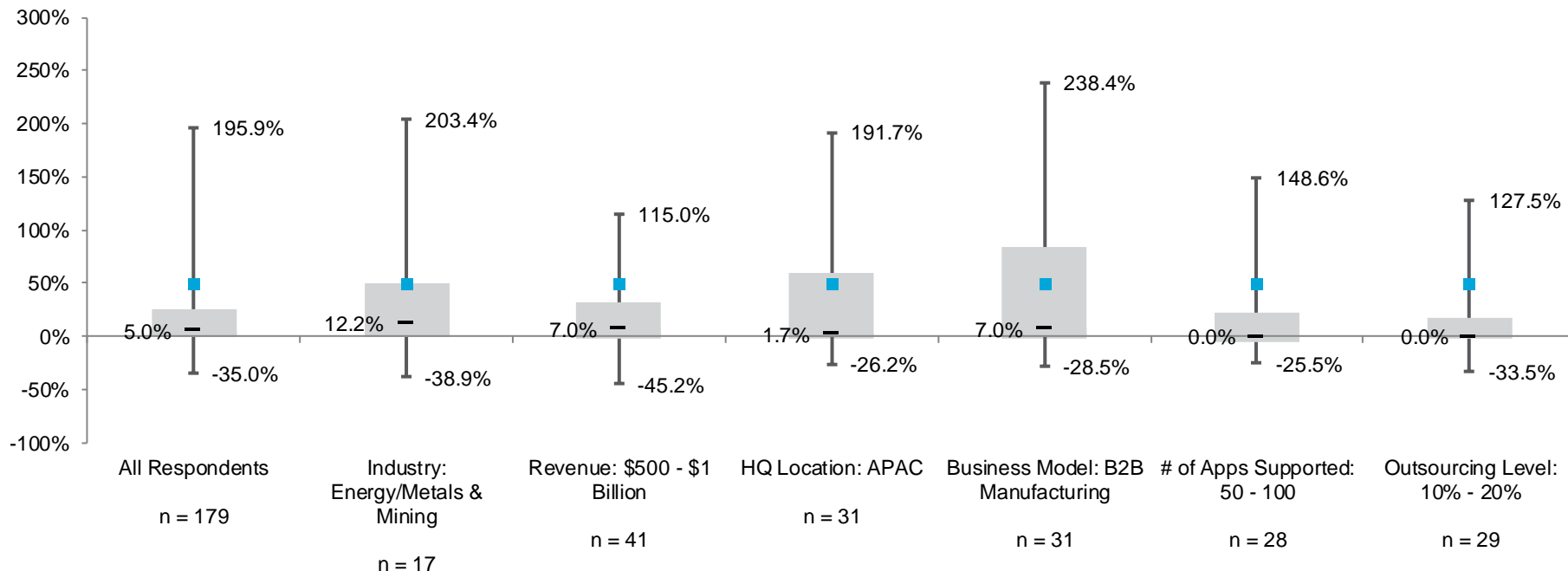
[Resourcing Model](#)

Forecasts for the Next Fiscal Year

EXPECTED IT PROJECT BUDGET CHANGE

Expected Change in IT Project Budget
2016 – 2017 (E)

Your Response: 50.0%



CIOs expect the IT Project Budget to grow by 5.0% in 2017, at the median.

- IT project budget is defined as the total amount budgeted for all the IT-enabled projects in a given year. This includes foundational infrastructure projects and business enablement projects. IT projects that span multiple years have been divided across the time period. All expenses, including capital and external expenses, are included in IT project budgets.

Your Survey Responses for this Metric: [IT Project Budget\(C5\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

[Resourcing Model](#)

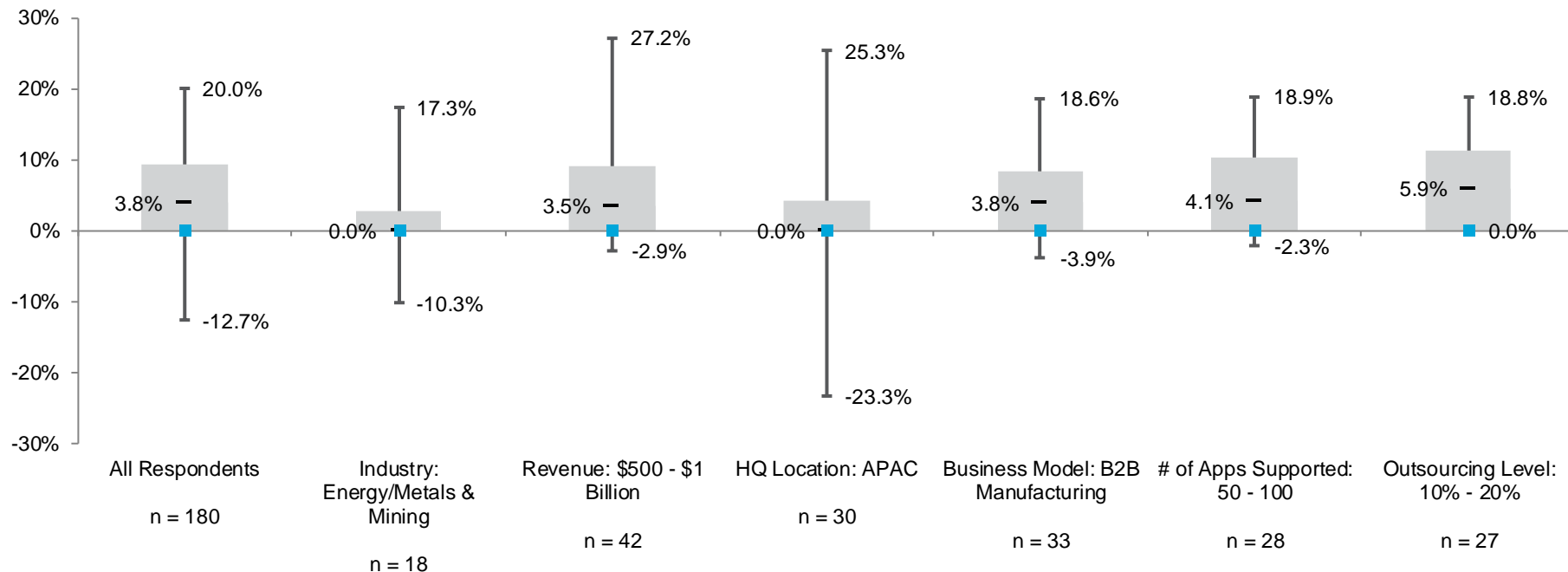
Forecasts for the Next Fiscal Year

EXPECTED IT STAFFING CHANGE: INTERNAL IT FTEs

Expected Change in Internal IT FTE Levels

2016 – 2017 (E)

Your Response: 0.0%



While staffing levels for 2016 are expected to grow modestly at the median, there is wide variation across organizations.

- Internal IT FTEs do not include contractors.

Your Survey Responses for this Metric: [Internal IT FTEs\(D1\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

[Resourcing Model](#)

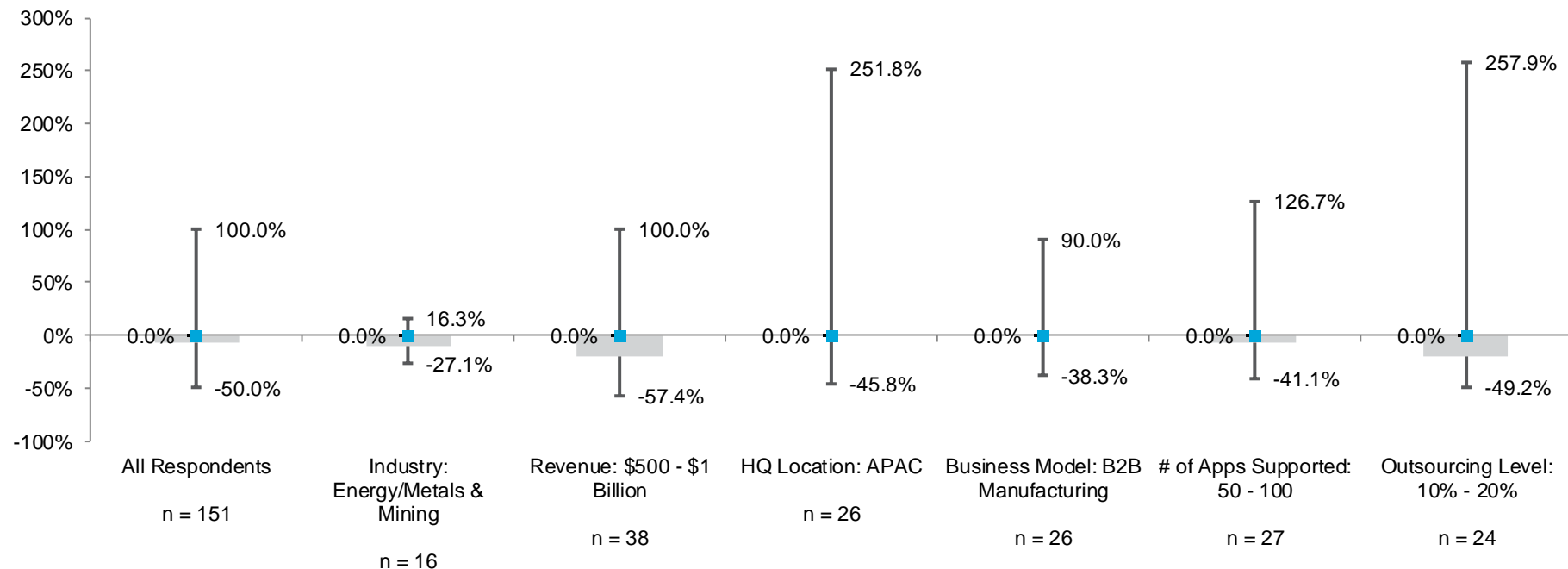
Forecasts for the Next Fiscal Year

EXPECTED IT STAFFING CHANGE: IT CONTRACTORS

Expected Change in Internal IT Contractor Levels

2016 – 2017 (E)

Your Response: 0.0%



Contractor levels are expected to remain flat at the median, but there is wide variation across organizations.

- Contractors are defined as individuals who provide services under terms specified in a contract, usually used for staff augmentation. Like an internal full-time equivalent (FTE), a contractor often works on-site. Unlike an internal FTE, a contractor performs specific services for a specific period of time and for specific amounts of money, the terms of which are negotiated for every service performed.

Your Survey Responses for this Metric: [IT Contractors\(D1\)](#)

[Current IT Budget](#)

[Spending Allocation](#)

[Resourcing Model](#)

Forecasts for the Next Fiscal Year

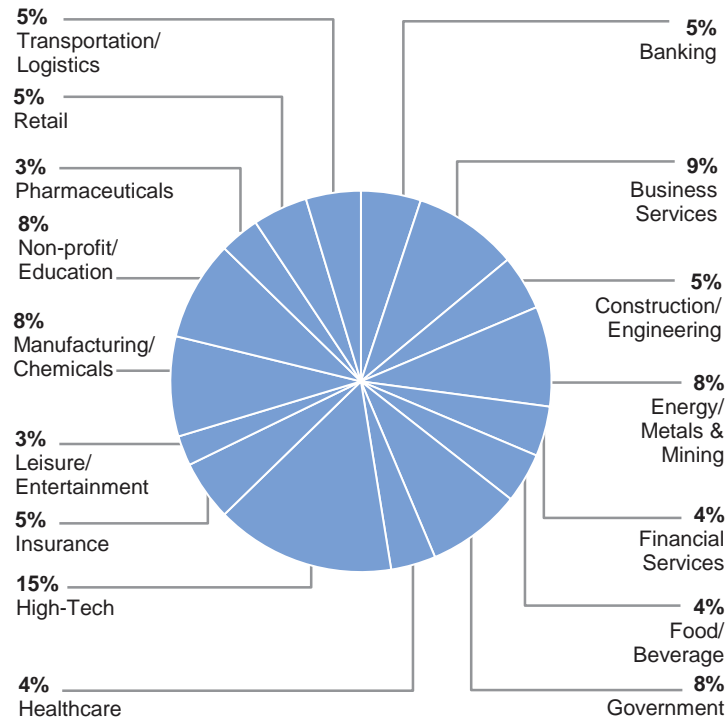


Appendix

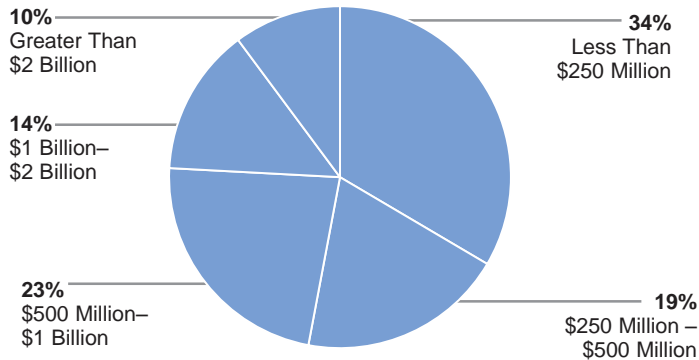
- Survey Participant Profile
- Your Survey Responses
- Glossary

PARTICIPANT PROFILE

Respondents by Industry
Percentage of Responding Organizations



Respondents by Organization Revenue⁽¹⁾
Percentage of Responding Organizations, USD



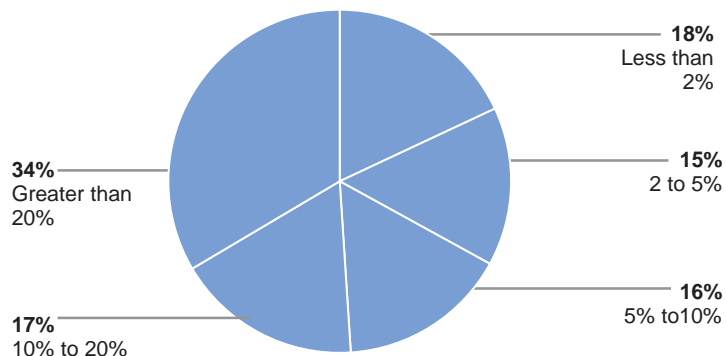
Note: (1) Revenue is defined as net sales, excluding expected returns. Government organizations provided their agencies' enacted budget/annual appropriations. (2) Percentages may not sum exactly to 100% due to rounding.

n = 237

PARTICIPANT PROFILE (CONTINUED)

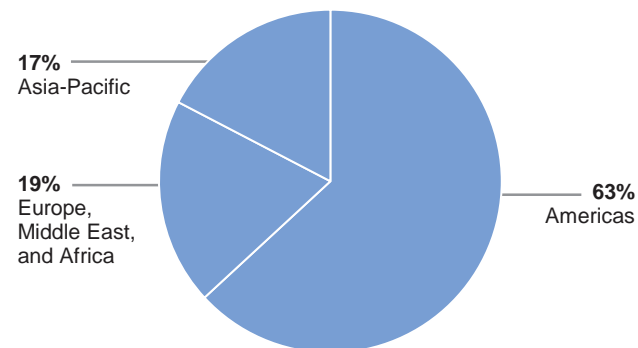
Respondents by Level of Outsourcing

Percentage of Responding Organizations



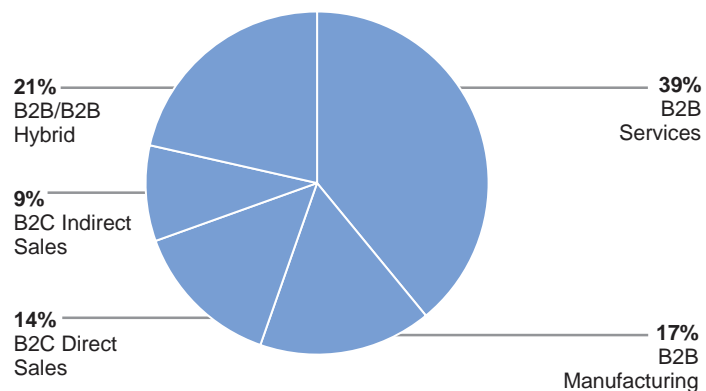
Respondents by Headquarters Region

Percentage of Responding Organizations



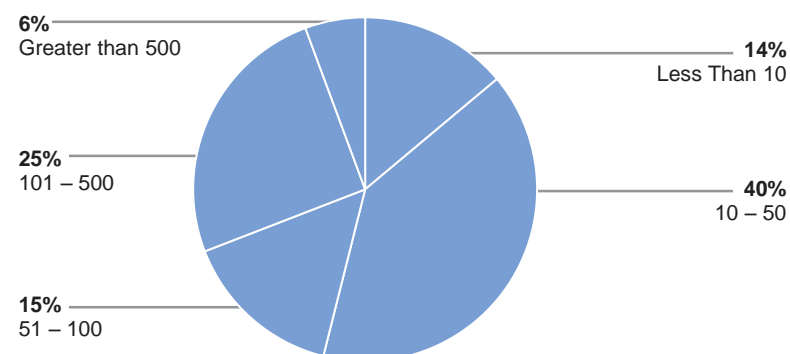
Respondents by Business Model

Percentage of Responding Organizations



Respondents by IT Support Environment

Number of Applications Supported



n = 237

YOUR SURVEY RESPONSES

Your organization's responses are shown in the right-hand column of the table below.

Section A: Organizational Profile		
A1	Many questions in this survey are financial in nature. Please indicate the currency you will use to answer those questions:	Australian Dollars
A2	Please select the region where your headquarters is located:	Australia/New Zealand
A3	Please provide the FY2015 operating expense (in millions of your currency) for your business entity.	165
A4	Please provide the FY2015 revenue (in millions of your currency) for your business entity.	750
A5	How many Full-Time Equivalents did your business entity employ in FY 2015?	1000
A6	How many desktops, laptops, and tablets did your IT organization support in FY2015?	1600
A7	How many IT users did your organization support in FY2015?	1000
A8	How many enterprise applications did your IT organization support in FY2015?	80
A9	Which of the following business models best describes your business entity's primary economic sector?	Business Model: B2B Manufacturing

Note: Some of your data values may have been updated through CEB's validation conversations with your organization.

YOUR SURVEY RESPONSES (CONTINUED)

Your organization's responses are shown in the right-hand column of the table below.

Section B: Total IT Spending				
B1a	What is your total IT operating expenditure (in millions of your currency), depreciation (in millions of your currency) and capital expenditure for the following fiscal years?	FY2015 (Actual)	FY2016 (Expected)	FY2017 (Anticipated)
	IT Operating Expenditure (<i>Excluding Depreciation</i>)	\$12.6	\$13.2	\$13.2
	Depreciation	\$9.0	\$12.3	\$12.3
B1b	IT Capital Expenditure	\$17.5	\$13.0	\$12.4
B2a	What percentage of your Total IT Spending is allocated to COGS (i.e., product or service creation) and SG&A expenses (i.e., indirect, non-production costs)?	Percentage of Total IT Spending - 2016 (Expected)		
COGS	Operations	N/A		
	Supply Chain	N/A		
	Manufacturing	N/A		
	Other COGS Expenses	N/A		
SG&A	Marketing	N/A		
	Sales	N/A		
	HR	N/A		
	Finance	N/A		
	Procurement	N/A		
	R&D	N/A		
	Legal	N/A		
SG&A	Communications	N/A		
	Other SG&A Expenses	N/A		
B2b	On a scale of 1-10, please indicate how confident you are in the accuracy of the data provided in question B3a above.	0		

Note: Some of your data values may have been updated through CEB's validation conversations with your organization.

YOUR SURVEY RESPONSES (CONTINUED)

Your organization's responses are shown in the right-hand column of the table below.

Section B: Total IT Spending				
B3	What percentage of your total IT spending is classified as each of the following for FY2016? Please estimate these percentages if they are not known exactly.	Percentage of Total IT Spending - 2016 (Expected)		
	Innovation	N/A		
	Business Opportunity	N/A		
	Maintenance	N/A		
	Mandatory	N/A		
B4	What percentage of your total IT spending is allocated to all lifecycle costs for Software-as-a-Service (SaaS) applications, Infrastructure-as-a-Service (IaaS) and Platform-as-a Service (PaaS)	FY2015 (Actual)	FY2016 (Expected)	FY2017 (Anticipated)
	Percentage of total IT spending allocated to all lifecycle costs for Software-as-a-Service (SaaS)	N/A	2.0%	2.0%
	Percentage of total IT spending allocated to all lifecycle costs for Infrastructure-as-a-Service (IaaS)	N/A	0.0%	0.0%
	Percentage of total IT spending allocated to all lifecycle costs for Platform-as-a-Service (PaaS)	N/A	0.2%	0.2%
B5/B6	What percentage of your total IT spending is allocated to developing mobile applications or to investments in the following technology types for each of the following fiscal years?	FY2015 (Actual)	FY2016 (Expected)	FY2017 (Anticipated)
	Developing mobile applications	N/A	4.0%	4.0%
	Internet of Things	N/A	1.0%	2.0%
	Machine Learning	N/A	0.0%	0.0%
	Robotics	N/A	0.0%	0.0%

Note: Some of your data values may have been updated through CEB's validation conversations with your organization.

YOUR SURVEY RESPONSES (CONTINUED)

Your organization's responses are shown in the right-hand column(s) of the table below.

Section B: Total IT Spending (Continued)				
B7	How much of your total IT spending is outsourced (in millions of your currency) for each of the following fiscal years?	FY2015 (Actual)	FY2016 (Expected)	FY2017 (Anticipated)
	Total Outsourced Spending	N/A	\$3.5	\$3.5
B8	What percentage of your total IT Spending in each of the following activities is outsourced?	Percentage of IT Spend Outsourced		
	Application Development	0%		
	Application Maintenance	75%		
	Testing/QA	0%		
	Project Management	0%		
	Security Operations	80%		
	End-User Computing/Help Desk	100%		
	Data Operations/Server Support	100%		
	Database Administration	50%		
	Network and Data Communications (e.g., VoIP, WAN, LAN, VPN)	0%		
	Voice Communications (e.g., voice, cellular, and mobile)	0%		
	Other Activities	0%		

Note: Some of your data values may have been updated through CEB's validation conversations with your organization.

YOUR SURVEY RESPONSES (CONTINUED)

Your organization's responses are shown in the right-hand column(s) of the table below.

Section C: Detailed Budget Allocations		
C1	How is your total IT operating budget (in millions of your currency) allocated to each of the following functional areas?	FY2016 (Expected)
	Central IT Management (including Office of the CIO)	\$0.2
	Infrastructure	\$3.4
	Applications	\$6.6
	Information Security	\$0.6
	Project Management Office(s) (excluding project budgets)	\$0.5
	Enterprise Architecture	\$0.2
	Service Management	\$1.2
	Business Relationship Management (BRM)	\$0.5
	Other (please specify):	\$0.0
C2	How is your total IT operating budget (in millions of your currency) allocated to each of the following areas?	FY2016 (Expected)
	Internal Staff	\$3.7
	Training for Staff	\$0.1
	Contractors	\$0.2
	Consulting and Service Providers (Including outsourcing, but excluding telecom and network outsourcing)	\$2.7
	Network and Data Communications (e.g., VoIP, WAN, LAN, VPN)	\$1.0
	Voice Communications (e.g. voice, cellular and mobile)	\$0.5
	Hardware: On Premise/Company-Owned	\$1.0
	Hardware: Non-cloud hosting capacity leased from vendors	\$0.0
	Hardware: Cloud hosting capacity leased from vendors	\$0.0

Note: Some of your data values may have been updated through CEB's validation conversations with your organization.

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YOUR SURVEY RESPONSES (CONTINUED)

Your organization's responses are shown in the right-hand column(s) of the table below.

Section C: Detailed Budget Allocations		
C3	(OPTIONAL) What percentage of your 2015 (forecasted) training budget (value G/H29 above) is allocated to each of the following skills and competencies?	FY2016 (Expected)
	Core technology skills (i.e. skills to work with existing technologies, systems, applications, hardware we already have)	30.0%
	Emerging technology skills (i.e. skills to work with technologies that we are adopting or plan to adopt)	10.0%
	Engagement competencies (e.g. learning agility, influence, communication)	30.0%
	Collaboration or Experimentation skills	30.0%
	Other (please specify):	0.0%
C4	What is your IT capital expenditure (in millions of your currency) on the following categories for FY2016?	FY2016 (Expected)
	Internal Staff	\$1.0
	Traning for Staff	\$0.0
	Contractors	\$0.4
	Consulting and Service Providers (Including outsourcing, but excluding telecom and network outsourcing)	\$6.5
	Network and Data Communications (e.g., Voice, VoIP, WAN, LAN, VPN)	\$2.1
	Hardware	\$0.5
	Software	\$2.5
	Other (please specify):	\$0.0

Note: Some of your data values may have been updated through CEB's validation conversations with your organization.

YOUR SURVEY RESPONSES (CONTINUED)

Your organization's responses are shown in the right-hand column of the table below.

Section C: Detailed Budget Allocations (Continued)		
C5	What is your total IT project budget (in millions of your currency) for each of the following fiscal years?	Millions
	FY2015 (Actual)	N/A
	FY2016 (Forecasted)	\$12.0
	FY2017 (Anticipated)	\$18.0
C6	What percentage of your total IT project budget is allocated to each of the following categories for FY2016?	FY2016(Expected)
	Process Improvement/Automation: Processes enabled by enterprise applications such as ERP, PLM, HRIS, and CRM	10.0%
	Customer Interface - Ease of Use: Systems used directly by customers or consumers with the purpose of reducing time and effort on the part of the customer to consuming your company's end product or services (e.g., mobile applications that enable purchases or customer service support).	0.0%
	Customer Interface - Personalization: Systems used directly by customers or consumers with the purpose of customizing the experience for the individual consumer (e.g., external website or mobile application that greets the user by name upon launch).	0.0%
	Data & Analytics: Systems for aggregating, analyzing and visualizing structured and unstructured information (e.g., Hadoop, Tableau, MicroStrategy)	30.0%
	Collaboration: Systems for synchronous and asynchronous collaboration and knowledge sharing within the organization and with external parties	30.0%
	Information Security: Systems (technical controls) for protecting the sensitive information of the organization	15.0%
	Core/Foundational Infrastructure: Infrastructure investments such as networks, routing, security services, etc., that support your organization	15.0%
	Other (please specify):	0.0%

Note: Some of your data values may have been updated through CEB's validation conversations with your organization.

YOUR SURVEY RESPONSES (CONTINUED)

Your organization's responses are shown in the right-hand column(s) of the table below.

Section D: Staffing Structure				
D1	Please indicate the total number of Full-Time Equivalents (FTEs) employed by the IT organization in each of the following fiscal years.	FY2015 (Actual)	FY2016 (Expected)	FY2017 (Anticipated)
	Internal FTEs	35	35	35
	Contractors	22	22	22
D2	Please indicate the number of Full-Time Equivalents (FTEs) that are currently or will be assigned to each of the following functional areas.	FY2016 (Expected)		
	Application Development	6		
	Application Maintenance	6		
	Business Relationship Management	5		
	Central IT Management (including Office of the CIO)	2		
	Network and Data Communications	0		
	Data Operations/Server Support	6		
	Database Administration	5		
	End-User Computing/Help Desk	9		
	Enterprise Architecture	2		
	IT Finance	2		
	IT Human Resources	1		
	Project Management Offices (PMOs)	5		
	Security Operations	1		
	Service Management	3		
	Strategy/Planning	1		
	Testing/QA	2		
	Vendor Management	2		
	Voice Communications	0		
	Other	0		

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YOUR SURVEY RESPONSES (CONTINUED)

Your organization's responses are shown in the right-hand column(s) of the table below.

Section E: Budget Model and Cycle		
E1	Please select the month of the start of your organization's fiscal year.	July
E9	How much flexibility is there in how the planned budget is allocated within IT once it has been approved? That is, how easy or challenging is it to move around line items within the approved budget to accommodate business demand changes.	
	IT Operating Expenditure (FY2016)	Somewhat Flexible
	IT Capital Expenditure (FY2016)	Somewhat Inflexible
	IT Project Budget (FY2016)	Somewhat Flexible
E10	Because we recognize that organizations refine budgets across the year, CEB will send a brief follow-up poll in January 2017. If you wish to designate someone beside yourself to receive this follow-up poll, please do so below.	
	Name:	
	Title:	
	Email:	
	Telephone Number:	

Note: Some of your data values may have been updated through CEB's validation conversations with your organization.

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GLOSSARY OF SURVEY TERMS

Term	Definition
3D Printing	3D printing uses digital images or models to create physical objects. Without using a mold, 3D printing adds layers of material on top of one another to create an object.
Advanced Robotics	Increasingly capable robots with enhanced senses, dexterity, and intelligence used to automate tasks or augment humans. Advanced robots will be mobile (i.e. no longer stationary), operated in unstructured or uncertain environments, be capable of manipulating or interacting with their environment, will not require fully pre-programmed precise set of actions to achieve outcomes.
Advanced Threat Anticipation	Using tools such as total packet capture and machine-readable threat intelligence in combination with AI and machine learning to quickly respond to and even anticipate security threats.
Application Development	Activities related to specifying, developing, testing, and putting into production new business applications. Includes the development of major enhancements to existing applications.
Application Maintenance	The modification of an application after delivery to correct faults or to improve performance attributes.
Application Services	Refers to a set of product solutions aligned to managed business capabilities. Specifically not services in the context of SOA.
Applications	The planning, design, deployment, operation, and support of software that directly supports business functions and processes. This category includes application development and maintenance, as well as applications sourcing. This category does not include system software or software, such as Web servers, databases, or content management systems that enable or manage business applications.
Augmented Reality	Augmented reality is a real-time view of a person's surroundings that is supplemented by additional images, video, or sounds displayed through a second screen, such as a smart phone or headset.
B2B Manufacturing	Sell raw materials/ industrial parts/ physical technology that will be transformed into finished products and only to businesses/ institutions - not individual consumers.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
B2B Services	Sell business services/ information/ non-physical technology to businesses/ institutions - not individual consumers
B2C Direct Sales	Primarily sell goods/ services directly to individual consumers - not businesses/ institutions
B2C Indirect Sales	Primarily sell goods/ services to individual consumers - not businesses/ institutions - and sales are through third party retailer, distributor, channel, franchisee.
B2C/B2B Hybrid	50% of sales are to consumers and 50% are to businesses/institutions
Blockchain	Blockchain is a set of distributed databases that develop a chronological overview of digital transactions that is usually shared through a public ledger.
Broker	A broker introduces new technologies and vendors to business units and multifunctional shared service group to ensure that business-partners who lead their own technology initiatives get the most valuable and relevant technology solutions, while mitigating potential risk and avoiding duplicative solutions across business units.
Big Data and Analytics	The skills, technologies, and practices for the capture and analysis of structured and unstructured data from company and external sources to gain insight and drive business decisions.
Business Architect	Develops a business-architecture for the business unit or multi-functional shared-service organization and analyzes and documents, activities, processes, information structures and governance structures.
Business Entity	The revenue-generating business unit that your IT organization directly supports.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
Business Opportunity	Investments that deliver new capabilities that drive the realization of business benefits; typically involve initiatives that expand your organization's current line of business (e.g., a new customer-facing system).
Business Relationship Management (BRM)	The practice of delivering business capabilities to further organizational goals, while managing business partner expectations of what IT can deliver. Involves communicating and managing projects and services between the IT organization and IT customers (often the business units).
Business Services	Individual offerings from a multi-functional shared services organization (such as 'Hire an Employee' or 'Invoice Processing') that typically involve IT working in unison with HR/Finance/Procurement processes to serve a business end-user directly by combining IT and non-IT aspects of service delivery.
Central IT Management (including Office of the CIO)	The people and processes responsible for providing central IT management across your business entity. Core responsibilities may include organization-wide coordination, administration, and oversight of financial and contract management, administration and planning, IT HR, vendor management, and communications.
Centralized IT Organization Structure	Single IT organization under control of corporate CIO with central IT providing services to the business units; sometimes known as IT shared services.
Chief Data Officer	Senior leader who defines and provides thought leadership around the organization's data assets, data strategy, and how best to address business challenges through improved data and analytics. Defines and manages the organization-wide strategic data roadmap and engagement model for data governance, data engineering, data science and analytics. Leads teams working with internal and external data, developing solutions data solutions, tools, and products.
Chief Digital Officer	Senior leader who defines and provides thought leadership around the organization's digital vision and overall business strategy. Leads the technical strategy, approach, deployment, and management of digital channels across the organization. Leads a cross functional team responsible for internal and external work streams across the organization
Cloud Security Architect	The cloud security architect is responsible for evaluating and mitigating the risk to IT systems and applications from the use of cloud-based SaaS, PaaS, and IaaS solutions.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
Collaboration	Systems for synchronous and asynchronous collaboration and knowledge sharing within the organization and with external parties
Company	The legal entity of which your business entity is a part.
Consulting and Service Providers	External vendors who provide specific IT services and often work off-site. Consulting and service providers supply specific skills and are typically employed for a limited project.
Contractor	A person who provides services under terms specified in a contract, usually used for staff augmentation. Like an employee, a contractor often works on-site, but unlike an employee, a contractor performs specific services for a specific period of time and for specific amounts of money, the terms of which are negotiated for every service performed.
Core/Foundational Infrastructure	Infrastructure investments such as networks, routing, security services, etc., that support your organization
Corporate Procurement of Direct Inputs	The acquisition of goods, services, or works from an outside external source, all of which directly enter into the production process of that company. For the food industry, as an example, ingredients and packaging will be the key direct procurement inputs.
Corporate Procurement of Indirect Inputs	The acquisition of goods, services, or works from an external source, all of which enable the company's activity. This entails a wide scope, including services related to various business units. For IT related services, this might include procurement of things like hardware and software.
Cost Leadership Strategy	Focus on being the low cost producer in an industry for a given level of quality. Business entity sells its products or services either at or below average industry prices to gain market share.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
Council of Equals IT Organization Structure	IT Function consolidated within the corporate center, but ownership of systems, customer segments, and processes is split across two or more CIOs.
Customer Interface - Ease of Use	Systems used directly by customers or consumers with the purpose of reducing time and effort on the part of the customer to consuming your company's end product or services (e.g., mobile applications that enable purchases or customer service support).
Customer Interface - Personalization	Systems used directly by customers or consumers with the purpose of customizing the experience for the individual consumer (e.g., external website or mobile application that greets the user by name upon launch).
Cyber Hunter	Actively seeks out indicators of compromise that conventional information security processes cannot find and tracks threats and campaigns aimed at organizations. Collects and aggregates information from a wide variety of sources and formats them for relevance to our environment. Creates hypotheses for analytics and testing of threat data. Shares lessons learned, initial indicators of detection, and opportunities for strengthening signature based detection capabilities. Maintains and enhances the documentation standard for discoveries and reporting of malicious tactics, techniques, and procedures.
Data & Analytics	Systems for aggregating, analyzing and presenting structured and unstructured information.
Data Analyst	Identify trends and patterns in large data sets that provide insights for business leaders, and help the rest of the organization make better, data-driven decisions.
Data Operations/Server Support	Installing, expanding, streamlining, and securing data operation hardware, including installing, fixing, and supporting servers.
Data Scientist	Develops algorithms and models, conducts statistical analysis, and uses advanced techniques, such as machine learning and natural language processing, to generate and support new products and services, in addition to insights that optimize operations. Builds and manages data assets—including large databases, data lakes, and data warehouses. Contributes to building and developing in the organization's data infrastructure..

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
Database Administration	Managing and maintaining database software.
Decentralized IT Organization Structure	Multiple IT organizations localized within business units with small central staff promoting collaboration in select areas of benefit.
Depreciation/Amortization	A yearly expense recorded to allocate an asset's cost over its useful life. Amortization and depreciation are differentiated by whether the asset is intangible (amortization) or tangible (depreciation).
Desktops, Laptops, and Tablets	The computers and tablets that your IT organization supports and maintains. Do not include mobile devices. Include desktops, laptops, and tablets supported for you by external providers.
DevOps	DevOps is defined as a set of organizational behaviors to minimize productivity loss between Applications and Infrastructure and promote end-to-end accountability across teams for IT product and service outcomes.
DevOps Engineer	The DevOps engineer identifies and optimizes the interdependencies between application development and infrastructure operations through a collaborative approach to continuous delivery.
Differentiation Strategy	Focus on development of a product or service that offers unique attributes that are valued by customers and that customers perceive to be better than or different from the products/services of the competition. Value added by the uniqueness may allow the firm to charge a premium price.
Distributed Data Processing	Networks that support the processing of large data sets by using distributed computing environments or servers. These provide the computing and processing power necessary to support and analyze the large volumes of data generated by IoT, analytics, etc. (e.g.: Hadoop, Apache Spark).
End-to-End IT Services	Services that package all the technologies, processes, and resources across IT needed to deliver a specific business outcome while hiding technical complexity. These services are defined by the core activities that business partners need to achieve their objectives and can be changed as business partners' needs shift.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
End-User Computing/Help Desk	The function responsible for the environment, workload, and total operating costs of Tier support and self-service.
Enterprise Applications	Business applications (as opposed to system software) for which incident and problem management services are provided by the company or a third party contracted by the company. Support also includes application maintenance activities. Enterprise applications include applications built or purchased (e.g., HCM, ERP), but does not include home-grown or "shadow IT" applications created/used by employees (e.g., a customized access databases).
Enterprise Apps for Mobile	The delivery of enterprise solutions via mobile platforms, so that employees can access information on the go. e.g. ERP and CRM apps for sales people on the road.
Enterprise Architecture	Helps achieve an organization's objectives by enabling business capabilities and driving operational efficiencies by documenting current and future state architectures, governing those architectures, and developing roadmaps that chart the path between them.
Enterprise Flash Array Storage	Storage subsystem built around solid-state drives or flash memory rather than traditional hard disk drives. They are capable of delivering from 1/2 million to 1 million input/output operations per second with latency figures of 1 millisecond or less.
Facilities	The physical structure and the infrastructure services provided to occupants of that structure.
Federated IT Organization Structure	Support of backbone systems centralized within corporate IT; support of remaining systems owned by business unit IT heads who report to the business unit and corporate IT.
Fiscal Year	A fiscal year (or financial year, or sometimes budget year) is a period used for calculating annual ("yearly") financial statements in businesses and other organizations. The "fiscal year" may also refer to the year used for income tax reporting.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
Full-Time Equivalent (FTE)	The equivalent of one full-time employee, as determined by the organization's standard working hours (typically 40 hours per week). An FTE can be represented either by a staff member working full-time or by the aggregation of part-time employees, such as two part time employees each working 50% of standard hours. FTEs include both internal employees and contractors.
Hardware	Expenses related to servers, storage, data center technology and all tangible parts of a computer system, including computers, power supplies, cables, circuits, keyboards, printers, etc.
Headquarters	The location where the majority of corporate business functions operate (also known as Head Office).
Hybrid Cloud	Hybrid cloud includes both public and private clouds that operate as separate entities but are integrated in an automated environment to allow for seamless transfer of data and applications.
Information Architect	Develops and maintains information architecture for the organization to improve integration, enhance knowledge-worker productivity and improve decision-making capabilities.
Information Content of a Product/Service	Refers to the amount of useful information contained within that product/service that is actually received and understood by its users.
Information Insight Enabler	Identify trends and patterns in large data sets that provide insights for business leaders, and help the rest of the organization make better decisions from big data.
Information Intensity of a Business Entity	An organization's information intensity is defined and captured by: (1) the information intensity of its process/value-chain, and (2) the information content contained within its products/services.
Information Intensity of a Process/Value-Chain	Refers to the amount of information processing that is required to acquire, process, and deliver the product/service in its final form to users.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
Information Security	The people and processes responsible for protecting information and IT systems from unauthorized access, use, disruption, modification, or destruction. Includes information risk assessment, firewall management, intrusion prevention, IT asset management, network security, and end user security awareness training and education.
Information Security Projects	Systems (technical controls) for protecting the sensitive information of the organization
Infrastructure	The planning, design, deployment, operation, and technical support of component technologies. This category includes infrastructure maintenance, data center, end user computing and support, telecom, e-mail, storage, WAN/ LAN and associated labor, infrastructure sourcing, and infrastructure licensing. It does NOT include information security.
Infrastructure Services	Refer to services related to maintaining infrastructure operations such as collaboration and end-user computing.
Infrastructure-as-a-Service (IaaS)	Fundamental computing resources like processing, storage, and networks, where the consumer does not manage the underlying cloud infrastructure but has control over the deployed application and the operating systems, e.g., Amazon EC2.
Innovation	Transformative sources of competitive advantage; investment returns are typically hard to measure; typically involve initiatives that are outside your organization's current line of business, (e.g., a system for sharing competitive intelligence).
Internal FTE	The equivalent of one full-time employee, as determined by the organization's standard working hours (typically 40 hours per week). An FTE can be represented either by a staff member working full-time or by the aggregation of part-time employees, such as two part time employees each working 50% of standard hours. Internal FTEs include only internal employees and not contractors.
Internal Staff	Compensation, benefits, and development expenses for all internal employees.
Internet of Things	The Internet of Things uses software and sensors to connect physical objects to the Internet to help organizations gather data on how the object is being used.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
IT Capital Expenditure	One-time costs to buy a new asset or upgrade an existing asset. The cost is spread across the useful life of the asset as depreciation/amortization.
IT Chief of Staff	A direct report to the CIO, often considered his/her "right hand," who works on strategic planning and strategy development; IT performance measurement and value communication; and often IT workforce planning and organizational development. Other titles for this role include: Head of the Office of the CIO, Head of IT Strategy and Planning, Head of the IT Business Office, and IT Business Operations.
IT Finance	The process of providing effective stewardship of the IT assets and the financial resources used in providing IT services. It provides the necessary management information to ensure that services are delivered efficiently and effectively.
IT Human Resources	The process of providing effective stewardship of the IT assets and the HR resources used in providing IT services. It provides the necessary management information to ensure that services are delivered efficiently and effectively.
IT Operating Expenditure	The annual total expenditure for all IT-related technology, staff, and externally-provided services. The total IT Operating Expenditure includes costs related to hardware and software maintenance; application development; cost of operating, supporting, maintaining, and managing existing IT systems; and infrastructure components and services. IT Operating expenditure excludes Depreciation and all capital expenses.
IT User	A regular consumers of the IT services directly administered by Corporate IT. Users include internal employees and contractors.
ITIL	Information Technology Infrastructure Library, a framework of IT service management processes and best practices.
Legal Entity	An association, corporation, partnership, proprietorship, trust, or subsidiary that has legal standing in the eyes of the law.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
Machine Learning	Machine learning is the use of algorithms to enable computers to continuously learn from patterns in data without being explicitly programmed to do so.
Maintenance	Projects designed to maintain existing service levels, reduce IT costs, or optimize existing IT assets (e.g., an ERP upgrade).
Mandatory	Investments required for legal or regulatory compliance (e.g., a payroll tax deduction system).
Microservices	Componentizing applications into sections that run autonomously but are not interconnected in order to make software updates faster, facilitating faster release cycles.
Multifunctional Shared Services	A shared services organization that brings together people, processes, and technologies cutting across multiple functional groups such as IT, Finance, Procurement, or HR under one roof to offer integrated business services such as “Hire an Employee” or “Invoice Processing.” In such a scenario, technology is delivered within each business service.
Network and Data Communications (e.g., VoIP, WAN, LAN, VPN)	Expenses related to data network, including external network charges, internal hardware and software charges primarily used for data communications. This also includes VoIP infrastructure and handsets expenses.
Next Generation Sensors	Next generation sensors are sensors that are smaller, more accurate, and more secure, and will provide the foundation for the internet of things.
Next Generation Touch Screens	Specialized toughened glass (e.g. Gorilla Glass, developed and manufactured by Corning), designed to be thin, light and damage-resistant and is particularly used in touchscreens. Currently it is mainly used in smartphones, but new use cases include smart fridges, smart windshields for cars, and interactive displays in shops. New technologies (OLED) that allow screens to be flexible and foldable offer even more potential for touchscreens and interfaces in the future.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
Offshore	FTEs that are located outside of your business entity's core region.
Online Division	Management of business entity's online presence, including creating, updating, and supporting externally-facing online content and usage.
Onshore	FTEs that are located within your business entity's core region.
Open Platforms	Open platforms promote interoperability for a product or system to work with other products or systems, present or future, without any restricted access or implementation.
Operating Expense (Business Entity)	Operating expense is the day-to-day expense, such as sales and administration, or research & development. Operating expense includes depreciation of assets which are used in the production process, but excludes one-time capital expenses.
Other COGS Expenses	These would typically include organizationally and operationally distinct units within an enterprise. This could include lines of business that offer different products and services and have different business processes.
Outsourced	All technologies, labor, and services that are provided by an external service provider, regardless of geographic location. This does not include contractors that are used to augment internal staff.
Ownership	Has full control of the resources devoted to this activity and is held responsible for the outcomes they deliver.
Platform-as-a-Service (PaaS)	Consumer-created or acquired applications using programming languages and tools furnished by a provider, where the consumer does not manage the underlying cloud infrastructure but has control over the deployed applications, e.g., Microsoft Azure.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
PMO (Project Management Office)	The department responsible for program and portfolio management activity as well as defining, implementing, and executing standard processes associated with project execution to increase the standardization of IT project development.
Process Improvement/Automation	Processes enabled by enterprise applications such as ERP, PLM, HRIS, and CRM.
Project Budget	The total amount that is budgeted in dollars or equivalent currency for all the IT-enabled projects in a given year. This includes both core/foundational infrastructure projects as well as business enablement projects. If it's a multi-year project and budgeted for more than one year, then divide the total project budget across the total time period. All expenses including capital and external expenses should be included in your project budget.
Project Management	Activities associated with defining, implementing, and executing standard processes associated with project execution to increase the standardization of IT project development.
Revenue	Sales generated by business entity. For the purpose of this survey, include net sales, which excludes expected returns. For government participants, please provide the total operating budget for your state, city, department, etc.
Robotics	Robotics includes physical devices that automate manual tasks or augment human activity. Many robots are mobile and may operate either with rules-based software or cognitive intelligence approaches.
Security Operations	IT security deals with protecting information on computer systems and networks. This includes using anti-virus software, firewalls, and password protected access.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
Service Architect	Integrates business, information and technology architecture to create a service architecture for each business service.
Service Management	Responsibility of developing and delivering one or more end-to-end services within the multi-functional shared-service or IT organization; accountable for designing, building, pricing, and enhancing the service, as well as service management and cost recovery.
Service Manager	Responsible for developing and delivering one or more end-to-end services within the multifunctional shared-service or IT organization; accountable for designing, building, pricing, and enhancing the service, as well as service management and cost recovery.
Software	Expenses related to a set of programs, procedures, and related documentation used to operate a computer system.
Software-as-a-Service (SaaS)	Applications accessible through a web browser where the consumer does not manage the underlying cloud infrastructure or even individual application capabilities, e.g., Salesforce.com.
Solution Architect	Expenses related to voice communications, including voice, voicemail, external fees and charges, and all other costs related to providing pager, cell phone and other smart phones, and wireless broadband services.
Strategy/Planning	The people and processes responsible for the administrative planning, organization, and strategy creation and communication within IT.

GLOSSARY OF SURVEY TERMS (CONTINUED)

Term	Definition
Testing/QA	The process of testing or modifying applications or IT services prior to moving them to the production environment.
Total IT Expenditure	The sum of IT operating expenses, (less depreciation/amortization), and IT capital expenses.
User-Experience Architect	The user experience architect is responsible for ensuring the quality of the end-user digital experience and for advocating high standards in usability and functionality across the product development lifecycle.
Vendor Management	The process of selecting vendors, negotiating prices and service levels, monitoring contracts and managing vendor relationships.
Voice Communications (e.g., voice, cellular, and mobile)	Expenses related to voice communications, including voice, voicemail, external fees and charges, and all other costs related to providing pager, cell phone and other smart phones, and wireless broadband services.

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