

IT Key Metrics Data 2016: Key Industry Measures: Cross Industry Analysis: Current Year

Published: 14 December 2015

Analyst(s): Linda Hall, Eric Stegman, Shreya Futela, Disha Gupta

This research contains enterprise-level IT spending, staffing and cost metrics, as well as business productivity ratios across all industries (“Cross Industry”) in aggregate. Information provided was collected throughout 2015 from a global audience of CIOs and IT Leaders.

Key Findings

- By using multiple IT investment metrics, organizations are better able to view IT spending within the context of IT supply and demand requirements relative to business performance.
- The 2015 Cross Industry average IT spending as a percent of revenue is 3.4%, up from 3.2% in 2014.
- The 2015 Cross Industry average IT spending as a percent of operating expense is 4.3%, up from 4.2% in 2014.
- The 2015 Cross Industry average IT spending per employee is \$13,537, up from \$12,710 in 2014.

Recommendations

- Use this research (or your Gartner ITBudget Tool comparison report) as a source of comparative data to assist IT and enterprise leaders with fact-based decisions related to investments, planning, budgeting, ongoing operational assumptions and identification of quantitative best practices.
- These measures should be considered in the creation of future-state (both short and long term) objectives to quantify IT planning assumptions and to better understand niche or industry competitive drivers, inhibitors, conditions and trends.
- Use of this information should be considered the beginning of an ongoing measurement program. Organizations should consider investing in customized, refined, prescriptive or in-

depth benchmarking engagements on a recurring basis to support the budget cycle, or whenever making significant, fact-based IT or business decisions.

Table of Contents

Analysis.....	4
How Does Your IT Organization Stack Up Against the Competition?.....	4
IT Key Metrics Data Research Background.....	4
IT Key Metrics Data Key Industry Measures Overview.....	5
Using This Research.....	7
Gartner's ITBudget Tool: Compare Your IT Metrics to Your Industry.....	8
Gartner IT Key Metrics Data Series.....	9
IT Key Metrics Data Source.....	10
Data Variations.....	10
Demographics.....	10
Cross Industry Definition.....	10
Revenue Size Categories.....	12
IT Investment Measures.....	13
Total IT Spending/Budget Definition.....	13
Points of Clarification.....	15
IT Intensity.....	16
IT Spending as a Percent of Revenue.....	16
IT Spending as a Percent of Operating Expense.....	18
IT Spending per Employee.....	19
IT Full-Time Equivalents as a Percent of Employees.....	20
Business Productivity Ratios.....	22
Revenue per Employee.....	22
Operating Income per Employee.....	23
Profitability.....	24
IT Resource Distributions.....	26
IT Operational Versus Capital Spending.....	26
Strategic IT Spending Categories: IT Spending to Run the Business, IT Spending to Grow the Business and IT Spending to Transform the Business.....	27
IT Spending Distribution: Hardware, Software, Personnel and Outsourcing.....	29
Distribution of IT FTEs: Insourced Versus Contractor.....	31
Distribution of IT Resources by IT Functional Area.....	32

Conclusions.....	42
Related IT Key Metrics Data Research.....	43
Appendix: Exploring Gartner's Prescriptive Benchmark Analytics Capabilities.....	44
Gartner Benchmark Analytics Select Case Studies.....	45
Gartner Recommended Reading.....	47

List of Tables

Table 1. ITKMD Key Industry Measures: Vertical Industry Document Index.....	6
Table 2. Number of Observations, Average Revenue and Enterprise Employees.....	11
Table 3. Cross Industry: IT Spending as a Percent of Revenue: by Revenue Scale.....	17
Table 4. Cross Industry: IT Spending as a Percent of Operational Expense: by Revenue Scale.....	19
Table 5. Cross Industry: IT Spending per Employee: by Revenue Scale.....	20
Table 6. Cross Industry: IT FTEs as a Percent of Employees: by Revenue Scale.....	22
Table 7. Cross Industry: Revenue per Employee: by Revenue Scale.....	23
Table 8. Cross Industry: Operating Income per Employee: by Revenue Scale.....	24
Table 9. Cross Industry: Profitability: by Revenue Scale.....	26
Table 10. ITKMD 2016: Overview Document Index.....	44

List of Figures

Figure 1. ITBudget Tool Location.....	8
Figure 2. Distribution of the Cross Industry Data by Business Scale: Revenue Size.....	13
Figure 3. Cross Industry: IT Spending as a Percent of Revenue.....	17
Figure 4. Cross Industry: IT Spending as a Percent of Operational Expense.....	18
Figure 5. Cross Industry: IT Spending per Employee.....	20
Figure 6. Cross Industry: IT FTEs as a Percent of Employees.....	21
Figure 7. Cross Industry: Revenue per Employee.....	23
Figure 8. Cross Industry: Operating Income per Employee.....	24
Figure 9. Cross Industry: Profitability.....	25
Figure 10. Cross Industry: IT Operational vs. Capital Spending.....	27
Figure 11. Cross Industry: IT Spending to Run, Grow and Transform the Business.....	28
Figure 12. Business Value Category Decision Tree.....	29
Figure 13. Cross Industry: Distribution of IT Spending on Hardware, Software, Personnel, Outsourcing	31

Figure 14. Cross Industry: Distribution of IT FTEs: Insourced vs. Contractor.....	32
Figure 15. Cross Industry: Distribution of IT Cost and Staffing by IT Functional Area.....	33

Analysis

How Does Your IT Organization Stack Up Against the Competition?

IT and enterprise leaders are challenged constantly with dynamic market conditions, wherein the organization is evolving and technology is changing. The 2016 edition of the Gartner IT Key Metrics Data (ITKMD) series, provides insight into the latest industry trends to help enterprises change, make fact-based decisions and help answer key questions similar to these:

- Are you measuring the alignment between business and IT?
- Are your staffing and investment levels competitive in infrastructure and operations?
- Are you measuring your technology performance?
- Can you prove the success of current and future IT investments?

Big enterprise changes require fact-based decisions regarding IT investments and costs. A critical evaluation of IT capabilities — past, present and future — is the cornerstone of delivering business value. In general, clients find their journeys with benchmarking are more successful by participating in surveys, and in effect, they "get better at benchmarking by doing benchmarking.

This research provides an overview of the key findings on spending and staffing trends from leading organizations around the world and also provides the current comparison data included in the Gartner ITBudget Tool (see gartner.com/itbudget).

IT Key Metrics Data Research Background

The Gartner ITKMD series of reports was established in 1995 to support strategic IT investment decisions, and today the annual publication delivers more than 2,000 metrics, across 96 documents and covers 21 different industries. Allowing you to rapidly identify high-level IT spending, staffing, technology and performance trends.

In an ongoing effort to study, analyze, evolve and improve enterprise performance, Gartner drives a number of initiatives to continuously capture IT data and information from the greater Gartner client and non-client community to support the growth of the database, the industry insight and the published IT metrics series. We invite you to participate in and contribute to the study to represent your vertical industry and region. The Gartner client community provides an exemplary window into the global IT community, and, therefore, your participation is essential to this publication series.

To contribute to Gartner ITKMD research, start a survey and represent your industry and region. Surveys are available at: gartner.com/surveys.

IT Key Metrics Data Key Industry Measures Overview

This research contains relevant database averages and ranges from a subset of metrics and prescriptive engagements available through [Gartner Benchmark Analytics](#) consulting-based capabilities. While database averages are indicative of enterprise IT spending levels, actual spending will vary around these averages when considering the variations of unique competitive landscapes, niche vertical industry subsectors, business scale, and IT complexity and demand, which may be justified by specific enterprise needs. These factors typically drive the context of an IT cost or performance evaluation and often dictate long-term support requirements. Ultimately, business value IT spending and staffing data should be used as a high-level directional indicator and in the creation of planning assumptions — not viewed as a prescriptive benchmark in which significant budget decisions are made.

For detailed information and metrics specific to each of the listed ITKMD vertical industries, see Table 1 or review "IT Key Metrics Data 2016: Index of Published Documents and Metrics" for a comprehensive list of all available IT Key Metrics Data 2016 research.

Table 1. ITKMD Key Industry Measures: Vertical Industry Document Index

Document	Current Year	Multiyear
Executive Summary	G00291328	
Small and Midsize Enterprise Executive Summary	G00291329	
Cross-Industry	G00291337	G00291338
Banking and Financial Services	G00291339	G00291340
Chemicals	G00291341	G00291342
Construction, Materials and Natural Resources	G00291343	G00291344
Consumer Products	G00291345	G00291346
Education	G00291347	G00291348
Energy	G00291349	G00291350
Food and Beverage Processing	G00291351	G00291352
Government — National and International	G00291353	G00291354
Government — State and Local	G00291355	G00291356
Healthcare Providers	G00291357	G00291358
Industrial Electronics and Electrical Equipment	G00291359	G00291360
Industrial Manufacturing	G00291361	G00291362
Insurance	G00291363	G00291364
Media and Entertainment	G00291365	G00291366
Pharmaceuticals, Life Sciences and Medical Products	G00291367	G00291368
Professional Services	G00291369	G00291370
Retail and Wholesale	G00291371	G00291372
Software Publishing and Internet Services	G00291373	G00291374
Telecommunications	G00291375	G00291376
Transportation	G00291377	G00291378

Document	Current Year	Multiyear
Utilities	G00291379	G00291380

Source: Gartner IT Key Metrics Data (December 2015)

Using This Research

This research was commissioned to help IT and enterprise leaders compare IT investment levels (operational and capital expenses) with standard industry categories (revenue, operating expense, and total employees). To ensure a like for like comparison to the Gartner metrics it is important to adhere to the data definitions, which can be found throughout this report.

As with any published data, many potential interpretations and analyses exist. The dataset represents a mix of organizations of different sizes and vertical industry segmentations. The industry-specific spending profiles published here represent key metrics data collected directly from CIOs, CTOs, IT leaders and practitioners with respect to their organization's IT investment levels and future IT budgets. Most IT organizations follow an annual IT budgeting process and adjust their budgets based on changing economic and business conditions. In many organizations, IT spending levels are reviewed and revised on a quarterly or even monthly basis. Therefore, published IT spending benchmarks represent a "snapshot in time," and do not necessarily indicate what enterprises will or have ultimately spent on IT in the coming year or in the past.

Although the published figures represent what Gartner calls a "stalking horse" (that is, a position resulting from analysis of data that represents trends and results), each organization should assess its own situation carefully, and should not arbitrarily change to conform to published results (which do not necessarily represent best practices). For example, the metric of IT spending as a percent of revenue does not, by itself, provide valid comparative information that should be used to allocate IT or business resources. Moreover, IT spending statistics alone do not measure IT effectiveness and are not a gauge of successful IT organizations. They simply provide an indicative view of global investment levels for the market in general.

While the industry-specific spending metrics published here and in other research provide a high-level overview of spending priorities, many organizations feel the need to further evaluate their organization as compared to their niche competitive landscape when benchmarking. Many firms decide that a formal benchmarking exercise — one that is highly customized and prescriptive for the individual firm — is a natural follow-on to using the results presented in this research and in Gartner ITKMD publications. In such exercises, companies can be more assured that they are getting an "apples to apples" benchmark with a more refined peer group, and that the benchmark takes into consideration variations in complexity (such as the elements of industry, enterprise size, platforms, applications and other key variables).

Gartner recommends that organizations consider an investment in such customized or in-depth benchmarking engagements to support the budget cycle, significant IT or enterprise changes, or whenever making significant IT cost-based decisions. The information published in this research

can be used during the time periods between prescriptive or consulting-led benchmark engagements.

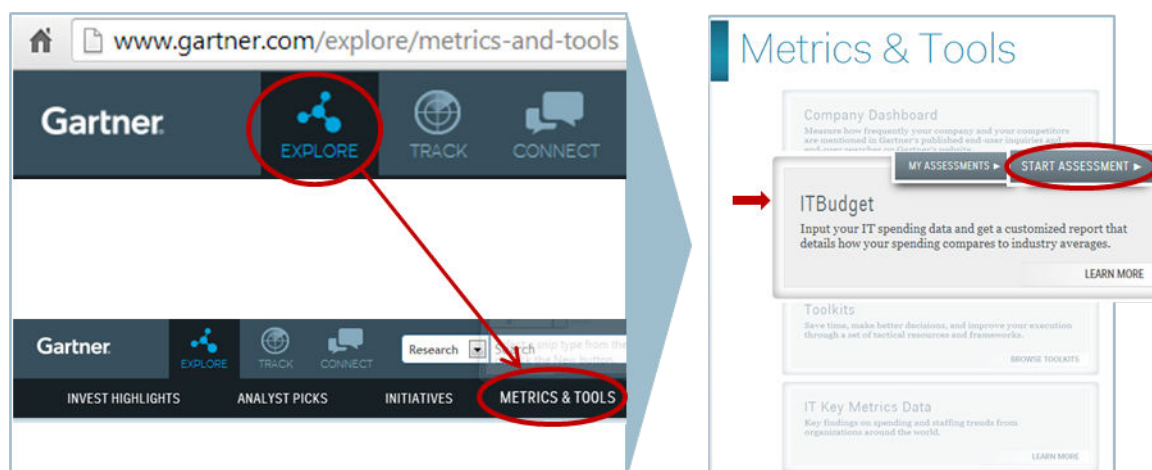
To explore Gartner's consulting-based prescriptive benchmark analytics capabilities and case studies, see the [Appendix](#).

Gartner's ITBudget Tool: Compare Your IT Metrics to Your Industry

As an easier way to access the information in this report, you can use the Gartner ITBudget Tool to start your benchmarking journey and compare your enterprise IT metrics (see gartner.com/itbudget). The tool can be used on an on-going basis, to analysis your current and future expenditure.

To start a new assessment and generate an IT metrics comparison report versus your industry, from gartner.com, select "Explore," "Metrics & Tools," and under "ITBudget," select "Start Assessment."

Figure 1. ITBudget Tool Location



Source: Gartner (December 2015)

Note: Many CIOs and IT leaders leverage the "Delegation" feature to email data collection and financial alignment activities to a colleague to complete on their behalf; as well as to drive a common measurement reporting structure across independent divisions, agencies, or business units to support coordinated budgeting, planning and communication exercises. Delegates do not need to have access to Gartner.

Once you have completed an assessment, the following notes highlight next steps to support IT business value discussions through IT financial transparency and cost optimization initiatives.

- "IT Key Metrics Data 2016: Resources to Review Your ITBudget Comparison Report"
- "Use Benchmarking to Identify IT Cost Optimization Opportunities"
- "Measure the Value of the IT Organization From Your Stakeholder's Perspective"
- "Making the Case for IT Investments by Focusing on the Business Strategy"

Access to the ITBudget Tool is dependent on your level of Gartner subscription.

Gartner IT Key Metrics Data Series

Depending on your subscription level for Gartner services, some clients have access to the complete Gartner ITKMD publication series. To access the series from gartner.com, select "Explore," "Metrics & Tools," and "IT Key Metrics Data."

ITKMD is part of the Gartner Benchmark Analytics range of solutions and offers a macro level look at Gartner's global database of comprehensive cost and performance measures. ITKMD provides you with immediate access to authoritative data on IT staffing and investment levels, as well as key technology cost and performance metrics. These metrics enable improved budget and investment decisions with regard to the changing environments of business and IT.

The ITKMD annual publication series contains more than 2,000 IT metrics published by way of 96 Gartner Benchmark Analytics research notes. In addition to the key IT financial metrics in this research, a variety of IT staffing and productivity metrics are available in the areas listed below. Some reports show vertical industry tendencies, while others tend to be cross-industry perspectives. Many of the metrics show averages by revenue scale or size of IT infrastructure environment supported (e.g. number of server operating system instances, number of installed MIPS, number of personal computing devices).

These key metrics reports are broadly defined by five key areas of the IT portfolio:

- **Key Industry Measures.** Enterprise-level total IT spending and staffing metrics across 21 vertical industries, including current-year and multiyear averages. Metrics based on enterprise size in terms of annual revenues are often provided.
- **Key Infrastructure Measures.** IT functional area-specific unit cost, productivity and performance measures for the IT infrastructure environments, including current-year and multiyear averages for the Windows server, Unix server, Linux x86 server, mainframe, storage, end-user computing, IT service desk, data and voice network environments. Metrics by workload size are often provided.
- **Key Applications Measures.** Application development and application support spending and staffing metrics, project measures, life cycle phases, productivity and quality measures (current year and multiyear).
- **Key Information Security Measures.** Enterprise-level total spending and staffing measures by industry and region.
- **Key Outsourcing Measures.** Enterprise-level total spending and staffing measures by industry and region.

For a complete outline of all related published research in the series, see "IT Key Metrics Data 2016: Index of Published Documents and Metrics."

IT Key Metrics Data Source

Information for ITKMD is continuously collected worldwide via direct fact-finding in our many benchmarking and consulting engagements, through surveys of the Gartner community and at Gartner events, in addition to surveys of non-Gartner-based communities. Financial information, such as revenue and operating income, is also collected from secondary research sources, such as annual reports and public databases.

Data Variations

As information for ITKMD is compiled by Gartner from multiple sources, we do not use a specific sampling method. The data collected each year may have a different distribution of organization sizes (revenue/business operating expenses/employees), and geographies. While we do group similar companies within each of the individual industry categories, there is always some diversity in businesses represented. For this reason, there may be minor or significant fluctuations in metrics from year to year.

IT Key Metrics Data industry reports contain tables below each box and whisker chart that break out the metric by revenue ranges (e.g., Greater than \$10B, \$1B-\$10B etc.) The sample size available for each of these ranges is much smaller than the sample size for the whole industry category. For this reason there may be larger year to year fluctuations in the revenue range metrics than there are for each industry as a whole. While the revenue ranges can provide useful information, we believe that the best way to evaluate the metrics is through the average, middle quartiles, and range information available in the box and whisker charts.

Demographics

Cross Industry Definition

The Cross Industry analysis represents a database average of all organizations in the IT Key Metrics Data 2016: Key Industry Measures dataset.

Table 2 outlines the number of observations as well as the average size of the organizations (annual revenue and number of employees) that are represented in the “current year” analysis.

Table 2. Number of Observations, Average Revenue and Enterprise Employees

Industry	Number of Observations	2014 Revenue (Billions of USD)	2015 Employees (Thousands)
All Industries (Cross-Industry)	3,034	5.9	14.8
Banking and Financial Services	348	3.4	8.9
Chemicals	68	5.7	9.4
Construction, Materials and Natural Resources	172	5.1	13.8
Consumer Products	101	4.8	13.5
Education	130	1.0	6.2
Energy	102	30.2	11.5
Food and Beverage Processing	96	6.7	19.1
Government — National/International (Operating Budget)	154	9.3	32.1
Government — State/Local (Operating Budget)	163	3.0	13.5
Healthcare Providers	135	3.2	18.7
Industrial Electronics and Electrical Equipment	80	5.3	18.7
Industrial Manufacturing	167	10.7	27.7
Insurance	273	4.2	3.8
Media and Entertainment	73	2.1	6.0
Pharmaceuticals, Life Sciences and Medical Products	97	5.3	13.2
Professional Services	290	2.2	13.4
Retail and Wholesale	223	8.5	26.1
Software Publishing and Internet Services	49	2.7	5.3
Telecommunications	64	9.5	20.9

Industry	Number of Observations	2014 Revenue (Billions of USD)	2015 Employees (Thousands)
Transportation	118	5.0	21.4
Utilities	131	7.7	8.3

Notes: (1) The revenue figures reported are final and official for 2014; the 2015 revenue figures were not announced or were otherwise unavailable at the time of this publication. (2) Government operating budget is used as a proxy for "revenue"; however, it is not included in the all-industry average for revenue. (3) The all-industry enterprise full-time equivalent (FTE) average includes government FTEs.

Source: Gartner IT Key Metrics Data (December 2015)

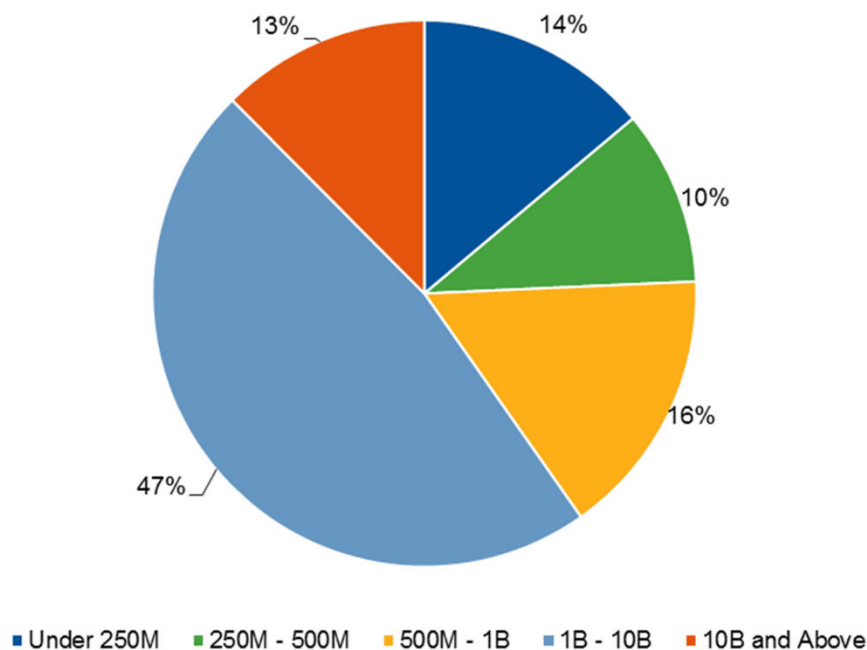
Revenue Size Categories

The niche subsector, business scale and future state strategy of each organization in the Cross Industry drive many of the variables required to understand the appropriate level of total IT investment required to remain competitive.

To offer some high-level insight into the effect of business scale relative to IT investment, this report will look at five environment scales within our represented data for selective metrics, in terms of USD *revenue size* as defined below.

- Less than \$250 million in revenue
- Between \$250 million and \$500 million in revenue
- Between \$500 million and \$1 billion in revenue
- Between \$1 billion and \$10 billion in revenue
- \$10 billion and greater in revenue

Figure 2. Distribution of the Cross Industry Data by Business Scale: Revenue Size



Source: Gartner IT Key Metrics Data (December 2015)

IT Investment Measures

Total IT Spending/Budget Definition

For the purpose of this research, Gartner has defined "total IT spending" as the following:

"The best estimate of total spending at the end of the 12-month budget period for IT to support the enterprise. IT spending/budget can come from anywhere in the enterprise that incurs IT costs, and it is not limited to the IT organization. It includes estimates by enterprises on decentralized IT spending and or 'shadow' IT. It is calculated on an annualized 'cash flow view' basis, and, therefore, contains capital spending and operational expenses, but not depreciation or amortization."

What the IT Spending/Budget Includes, From a Resource or Cost Perspective

- Hardware, software, personnel (including contractors, travel, benefits and training), outsourcing (external IT services like consulting, system integration, data and voice transmission, software as a service, infrastructure as a service), disaster recovery and occupancy costs associated with supporting IT within the enterprise. Costs also include all taxes (except value-added tax where it is recovered or refunded to the organization).

- Note: Occupancy costs, include fully burdened costs for the facilities being used by the IT staff supporting the enterprise. Some examples include office space, furniture, electricity, maintenance, property taxes, security and office supplies. Occupancy costs for space dedicated to IT functions, such as the data center, including power/heat management and raised floor, are also included.

What the IT Spending/Budget Includes, From an IT Functional Area or Activity Perspective

- The data center (for example, mainframes, servers and storage), end-user computing devices (for example, desktops, laptops, tablets, thin clients and smartphones), voice and data networks (including, but not limited to, voice and data transmissions, fixed and mobile telephony, and Internet access services), IT service desk, and applications (for example, development and maintenance).
- IT support functions, such as the office of the CIO; supervisory management; finance and administrative costs, such as purchasing; asset management; process management; and marketing of IT services.
- Dedicated data processing equipment used in operations, production and engineering environments — examples are computer-aided design/computer-aided manufacturing (CAD/CAM) and standard computing equipment used in devices for factory automation, and tablet PCs used by healthcare professionals.

What the IT Spending/Budget Does Not Include

- Costs for technology or services that are resold. Examples include salaries for developers involved in building commercially packaged software, or IT-skilled employees who provide services for the organizations' external clients.
- Operational technology that is:
 - Equipment-built or purchased for non-data-processing purposes, but which has computerized components. Examples include robotic manufacturing machines, automated teller machines, specialized point-of-sale devices, scanners, blood pressure monitors and sensors on a supervisory control and data acquisition (SCADA) system.
 - Appliance-like or proprietary data processing equipment that has a single (typically industry vertical) purpose and cannot be used for other general purposes. A typical example is a computer that can only control the flow of electricity through the power grid. Since it cannot be repurposed, it is not included in our model. Note that other systems that gather data from this type of computer and can be used for other purposes would not be considered operational technology and, therefore, would be in scope of our model.
- Depreciation or amortization expenses, which could lead to double counting from an accounting perspective.
- Internal "cross charges" and corporate allocations related to large, significant and/or unusual one-time expenses, such as reductions in workforce, redundancy, relocations, retirement, human resources and chairperson's salary.

- Business data subscriptions and services (such as Bloomberg), even if they are managed by the IT organization.
- Business process outsourcing services (BPO) where organizations outsource entire business functions such as payroll or benefits management. This includes cases where the BPO vendor provides access to software, and also guarantees that the outcomes of their services will meet business requirements, such as tax and withholding regulations. Note: where a vendor provides Software as a Service and only guarantees that the software will perform as specified, then this is in scope of the IT spending/budget. Traditional outsourcing of IT functions, for example servers and email, are also still within scope.

Points of Clarification

The IT Key Metrics Data: Key Industry Measures publication series looks at IT spending from a "cash flow" view, in that IT spending is defined as "the total of the IT operating budget (excluding depreciation and amortization), plus IT capital expenditure for the current year." This view allows organizations to understand the current year's cash outlay based on current-year management, plans and future-state strategy objectives. Many organizations monitor IT spending results using what is sometimes called the annualized "book view" or "accounting view," which represents the IT operating expenditure budget, including current depreciation (the allocation of prior years' IT capitalized expenses, which the enterprise records on its books for the current year). Capital budgets for the year in this accounting-based view are typically collected and reported separately. While this accounting view is helpful in outlining the annual cost of IT, it often does not accurately reflect the current strategy (and the respective investment decisions) because depreciation represents decisions made in the past. In this research, the ratio of IT operating versus capital spending is provided so that detailed comparisons can be made.

It should be noted that IT spending as a percent of revenue in the ITKMD is calculated on the basis of the current year's IT spending (budget) divided by the previous year's stated revenue. The calculation is made in this way because the current year's financial data is typically not available at the time of publication, while the IT spending/budget data is available. Also, the IT budget for a future year is based on experience from the current year.

Although Gartner publishes worldwide vertical-industry-specific IT spending and staffing metrics, ITKMD does not publish metrics by vertical industries within key geographic regions because previous research has shown that spending patterns are broadly similar by vertical market across regions. So, for example, financial services tend to spend a relatively high percentage of revenue compared with other vertical industries, whether the company is in Europe, Asia/Pacific or North America. While this information may not be available through published research, Gartner does provide prescriptive benchmarking services versus unique peer groups by industry subsector and or marketplace through the Gartner Consulting capabilities on a service for a fee basis.

To explore Gartner's consulting based prescriptive benchmark analytics capabilities and case studies, see the [Appendix](#).

IT Intensity

IT intensity, which is defined as "the level of IT investment relative to business results," is a fundamental tool in business strategy and IT communications. Although many organizations focus on one measure to understand their relative IT investment levels, Gartner has found that no single measure tells the whole story, and that the metrics need a business context to drive value and meaning for the greater enterprise to leverage. Gartner suggests that clients view IT investment against multiple measures of business volume and financial performance, and then triangulate on these as compared with various ratios of business efficiency and productivity. Next, incorporate these metrics into regular communications with the appropriate business context to link IT investment to business performance indicators.

For the purpose of the IT Key Metrics Data: Key Industry Measures publication series, Gartner suggests that clients triangulate between IT spending as a percent of revenue, IT spending as a percent of operating expense, and IT spending per company employee to understand relative IT intensity levels. Next, clients should cross-examine those measures against business productivity ratios (such as revenue per employee, operating income per employee and profitability ratios) to understand the impact on the business. For more information on these metrics, see "IT Key Metrics Data 2016: Index of Published Documents and Metrics" for a comprehensive list of all available IT Key Metrics Data 2016 research.

IT Spending as a Percent of Revenue

IT spending as a percent of revenue is the most recognized measure of total IT investment relative to top-line business results.

Revenue is defined as:

"The enterprise revenue associated with the business units supported by the IT organization (banks should use total interest income plus noninterest income minus provision for loan losses, while insurance companies should use gross written premiums and other income)."

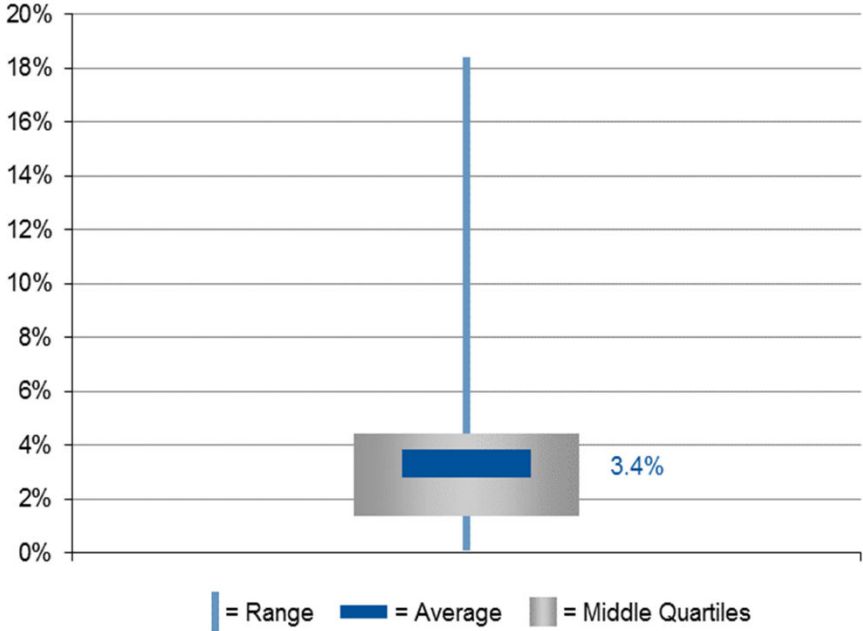
The value of this measure is that it assists in identifying the competitiveness of investment levels relative to the most fundamental measure of business performance: revenue. While this has been viewed as a must-have and readily available metric for many enterprises, common misuses include:

- Looking at a single year rather than multiyear trends
- Basing decisions on the assumption that this figure will not change in the future, sometimes dramatically
- Failing to understand and address changes in the numerator and the denominator of the calculation
- Considering just the average rather than the range of values or the upper and lower quartiles.

IT spending as a percent of revenue alone does not highlight why spending levels are at, above or below average (which are often misinterpreted as "good" or "bad"), nor does it reflect IT's contribution to business performance. Thus, IT spending as a percent of revenue needs to be

considered in tandem with other IT intensity measures, as well as the context of business objectives, the rate of change and the overall circumstances affecting the numerator, as well as the denominator, of the calculation.

Figure 3. Cross Industry: IT Spending as a Percent of Revenue



Source: Gartner IT Key Metrics Data (December 2015)

Table 3. Cross Industry: IT Spending as a Percent of Revenue: by Revenue Scale

<\$250M in Revenue	\$250M- \$500M in Revenue	\$500M- \$1B in Revenue	\$1B- \$10B in Revenue	\$10B+ in Revenue
5.2%	4.6%	3.8%	2.8%	2.0%
Global 2000 /S&P Range		2.9%		
Fortune 500 Range			2.7%	
Dow Range				2.0%

Source: Gartner IT Key Metrics Data (December 2015)

It should be noted that IT spending as a percent of revenue is calculated on the basis of the current year's IT spending divided by the previous year's revenue. We make the calculation in this way because the IT budget for a future year is based on experience from the current year. However, for

practical reasons, we use the previous year's revenue because the current year's financial information is not available to us at the same time as the IT spending numbers are.

IT Spending as a Percent of Operating Expense

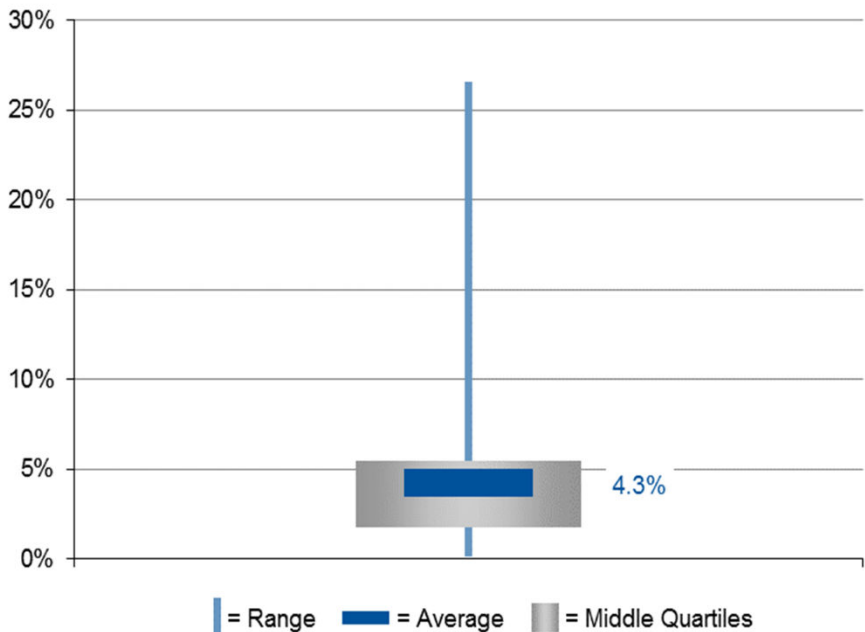
IT spending as a percent of operating expense is another view of IT investment levels in terms of the role IT plays in overall business spending patterns.

Business operational expense is defined as:

"The total expense associated with the business units supported by the IT organization. This includes items such as selling, general and administrative expenses, cost of goods sold (or cost of revenue), research and development, depreciation, and depletion and amortization expenses. For insurance, this includes underwriting expenses and loss and loss-adjustment expenses; for banking organizations, it includes interest expenses and noninterest expenses; for government and nonprofit organizations, it is represented by the enterprise operating budget."

While revenue may be subject to external-market-based volatilities, business operational expense typically remains much more consistent and predictable year over year. Therefore, it better reflects the overall business investment strategy. Typically, organizations with a greater level of IT investment relative to operating expense view IT as a strategic enabler, and this can improve business performance and productivity levels.

Figure 4. Cross Industry: IT Spending as a Percent of Operational Expense



Source: Gartner IT Key Metrics Data (December 2015)

Table 4. Cross Industry: IT Spending as a Percent of Operational Expense: by Revenue Scale

<\$250M in Revenue	\$250M- \$500M in Revenue	\$500M- \$1B in Revenue	\$1B- \$10B in Revenue	\$10B+ in Revenue
6.4%	6.2%	4.7%	3.6%	2.8%
Global 2000 /S&P Range			3.7%	
Fortune 500 Range			3.4%	
Dow Range				2.8%

Source: Gartner IT Key Metrics Data (December 2015)

IT Spending per Employee

IT spending per employee is often used to determine the amount of IT support the average organization's workforce receives.

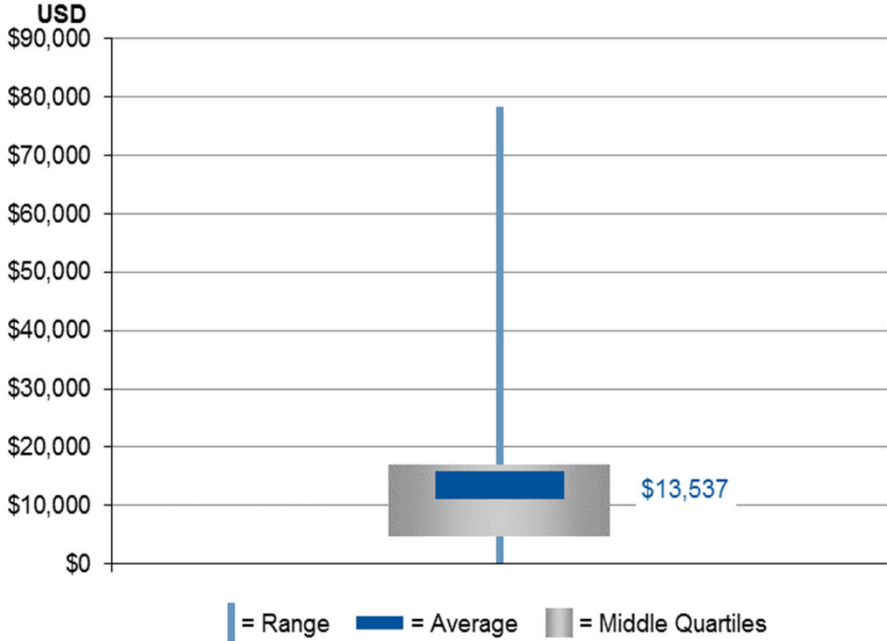
Company employee count is defined as:

"The count of employees (i.e., head count, excluding enterprise contractors and consultants), regardless of whether these employees are frequent users of the technology supported by the IT organization. This includes full-time and part-time employees, or as reported in the public record."

This measure helps to establish a link between IT investment and automation levels within the context of the workforce that supports revenue. Variations in this measure can represent niche-industry-specific delivery processes for service or product delivery, and, thus, should be viewed in conjunction with revenue and operating income per employee. Organizational staffing strategies and the use of contract employees can also impact this measure.

An increase in IT spending per employee is often viewed as a negative trend. However, this may not always be the case, as a decrease in employees (or a lack of increase of additional employees when business improves) can result in a higher value, simply because there is a smaller number of employees that are divided into the same or increasing IT spending size. Therefore, the overall trend may have been impacted by continuing lower levels of general employment and the fact that, in many cases, organizations have returned to profitability, but have been reluctant to increase hiring. For information-intensive enterprises, an increase in their figure for IT spending per employee may indicate a productivity improvement, due to automation or digitization.

Figure 5. Cross Industry: IT Spending per Employee



Source: Gartner IT Key Metrics Data (December 2015)

Table 5. Cross Industry: IT Spending per Employee: by Revenue Scale

<\$250M in Revenue	\$250M- \$500M in Revenue	\$500M- \$1B in Revenue	\$1B- \$10B in Revenue	\$10B+ in Revenue
\$12,591	\$15,498	\$14,758	\$13,025	\$13,374
Global 2000 /S&P Range		\$13,445		
Fortune 500 Range			\$13,098	
Dow Range				\$13,374

Source: Gartner IT Key Metrics Data (December 2015)

IT Full-Time Equivalentents as a Percent of Employees

IT FTEs as a percent of employees is a key measure of IT support and IT intensity from a human capital perspective.

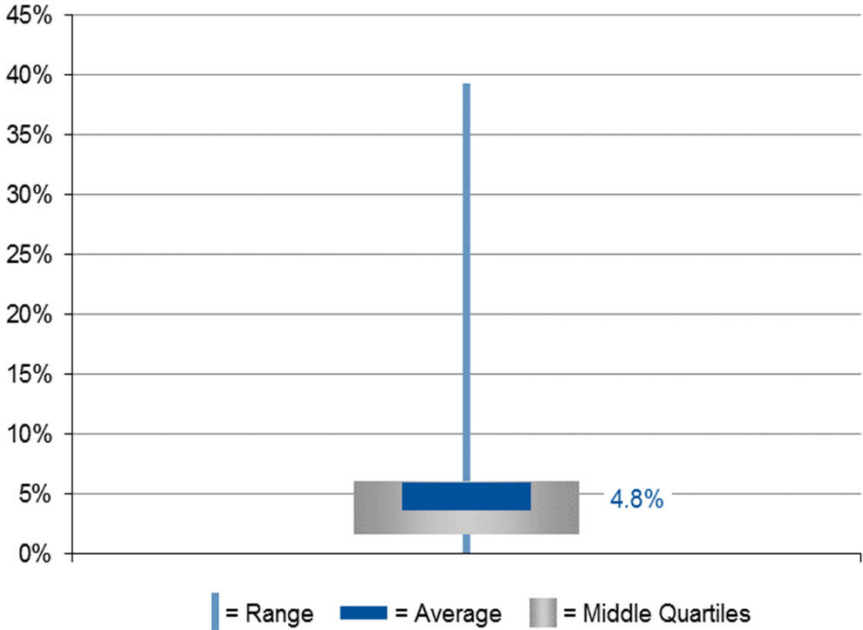
We define an IT FTE as follows:

"An IT FTE represents the logical staff to support functions performed by the physical staff, measured in calendar time. This includes all staffing levels within the organization, from managers and project leaders to daily operations personnel. This also includes insourced FTEs

and contract FTEs. However, this excludes the staff of a third-party vendor (for example, IT outsourcing), which is not operationally managed by the in-house staff, but rather is managed by the vendor."

Understanding the relative level of IT staff dedicated to supporting the business can also assist in identifying whether the staff size is appropriate. This should be considered within the context of the overall enterprise sourcing strategy and future-state objectives. Variables to consider in tandem with this metric include IT staffing distribution, contract versus insourced FTEs, and IT outsourcing as a percent of IT spending, as well as the enterprise sourcing strategy — Does the total employee count accurately represent the organization's workforce that is supported by IT? Do you have the ability to track the total number of internal users supported by IT?

Figure 6. Cross Industry: IT FTEs as a Percent of Employees



Source: Gartner IT Key Metrics Data (December 2015)

Table 6. Cross Industry: IT FTEs as a Percent of Employees: by Revenue Scale

<\$250M in Revenue	\$250M- \$500M in Revenue	\$500M- \$1B in Revenue	\$1B- \$10B in Revenue	\$10B+ in Revenue
5.6%	6.0%	4.9%	4.5%	3.9%
Global 2000 /S&P Range			4.5%	
Fortune 500 Range			4.3%	
Dow Range				3.9%

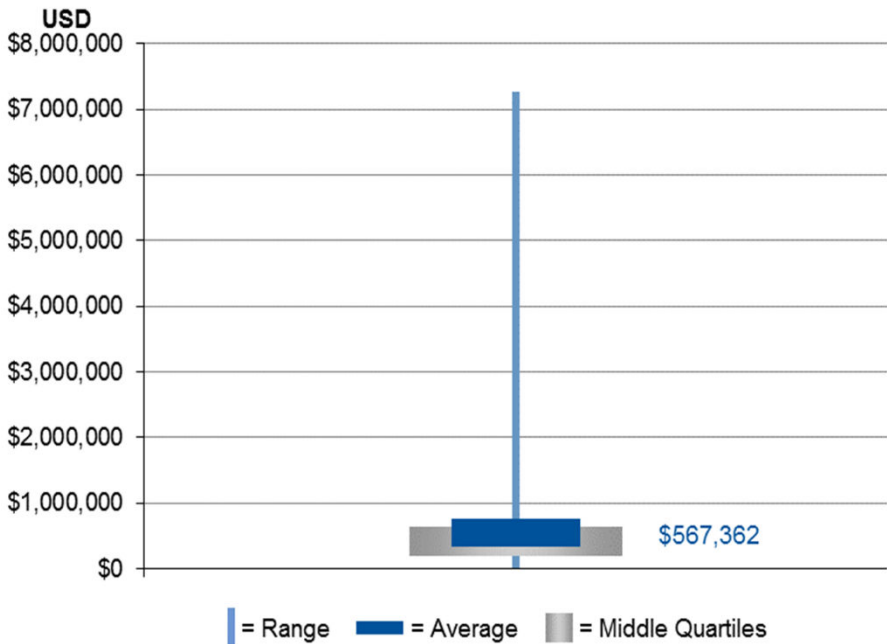
Source: Gartner IT Key Metrics Data (December 2015)

Business Productivity Ratios

Revenue per Employee

Revenue per employee can help determine employee productivity in terms of revenue generation intensity. This measure is typically influenced by company business model and staffing strategy. Those enterprises that are highly labor intensive operations tend to generate a lesser amount of revenue per individual as compared to those enterprises who are highly automated. Effective and efficient uses of IT enable business processes to be streamlined, thus increase the level of employee productivity in terms of business results. While revenue may represent top line business results, it does not represent an organization's ability to generate income. This measure should be considered within the context of the enterprise operating model which drives operating income and profit margin as well as within the context of the total workforce strategy.

Figure 7. Cross Industry: Revenue per Employee



Source: Gartner IT Key Metrics Data (December 2015)

Table 7. Cross Industry: Revenue per Employee: by Revenue Scale

<\$250M in Revenue	\$250M- \$500M in Revenue	\$500M- \$1B in Revenue	\$1B- \$10B in Revenue	\$10B+ in Revenue
\$269,929	\$447,152	\$489,959	\$588,265	\$984,960
Global 2000 /S&P Range		\$634,438		
Fortune 500 Range			\$672,553	
Dow Range				\$984,960

Source: Gartner IT Key Metrics Data (December 2015)

Operating Income per Employee

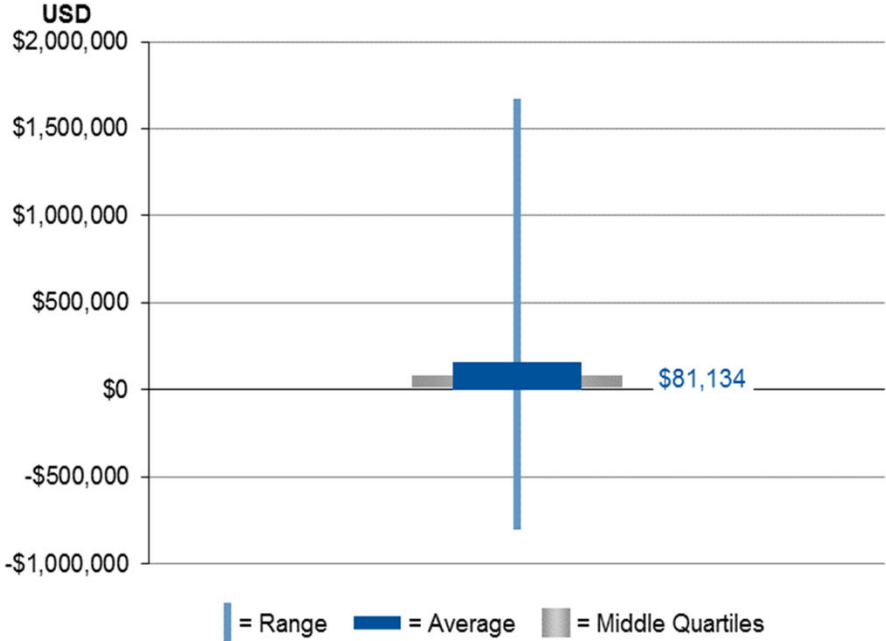
Operating income per employee is often employed as a measure of cost efficiency and productivity at an enterprise level.

Operating Income is defined as:

- Revenue minus business operational expenses

Operating income is a measure of a firm's profitability, which excludes interest and income tax expenses. By linking this measure to the workforce and associated IT investments to improve workforce processes (productivity), organizations can effectively communicate efficient uses of IT investment with regards to change in the level of operating income generated by the workforce.

Figure 8. Cross Industry: Operating Income per Employee



Source: Gartner IT Key Metrics Data (December 2015)

Table 8. Cross Industry: Operating Income per Employee: by Revenue Scale

<\$250M in Revenue	\$250M- \$500M in Revenue	\$500M- \$1B in Revenue	\$1B- \$10B in Revenue	\$10B+ in Revenue
\$30,469	\$67,622	\$108,574	\$78,629	\$106,047
Global 2000 /S&P Range		\$99,845		
Fortune 500 Range			\$85,119	
Dow Range				\$106,047

Source: Gartner IT Key Metrics Data (December 2015)

Profitability

Profitability is a measure of enterprise cost efficiency and can help outline an enterprise's position relative to industry as it is often related to investment patterns.

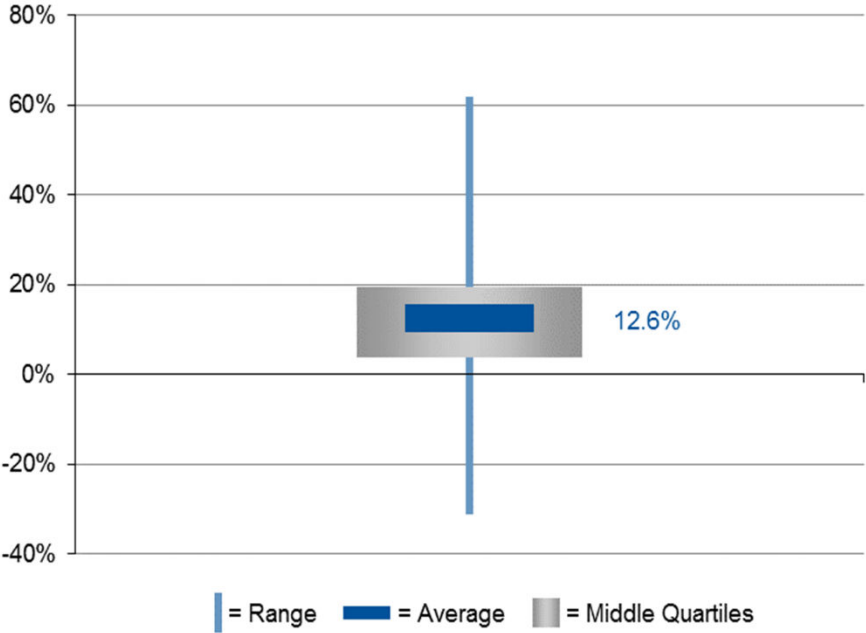
Profitability is defined as:

- Operating Income as a percent of Revenue

Also referred to as “Profit Margin,” this financial measure aids in understanding the effective use of enterprise resources (expenses and associated costs) as compared to the enterprise’s ability to generate earnings. Looking at only revenue to reflect business results may be misleading as operating expenses can move in sync or even faster than revenue in a given period of time. Profitability, based on an income statement, provides a fundamental measure of an organization’s business success in terms of relative health as well as efficient and effective use of resources.

By linking and tracking IT investment levels alongside profitability levels, IT organizations may be more able to effectively communicate IT’s enablement of future business success. To get beyond an arbitrary view of allocated costs and aggregated profitability, an organization needs to collect and analyze data at the individual customer, product or supplier level. Although there is sufficient rigor and accuracy in the derivation and production of consolidated financial statements, the data is often too abstract or aggregated to provide a true picture of where underlying costs are incurred and where true profit is generated.

Figure 9. Cross Industry: Profitability



Source: Gartner IT Key Metrics Data (December 2015)

Table 9. Cross Industry: Profitability: by Revenue Scale

<\$250M in Revenue	\$250M- \$500M in Revenue	\$500M- \$1B in Revenue	\$1B- \$10B in Revenue	\$10B+ in Revenue
10.6%	13.5%	14.6%	12.9%	10.6%
Global 2000 /S&P Range			12.8%	
Fortune 500 Range			12.3%	
Dow Range				10.6%

Source: Gartner IT Key Metrics Data (December 2015)

IT Resource Distributions

Up to this point, the figures have shown spending and staffing trends overall, without distinguishing between the strategic, financial or operational categories that compose them. Through these categories, you can draw conclusions about critical investment areas, key investment themes and competitive spending and staffing levels.

IT Operational Versus Capital Spending

IT operational versus capital spending helps to portray the IT investment profile for an organization in a given year.

IT operational expense is defined as:

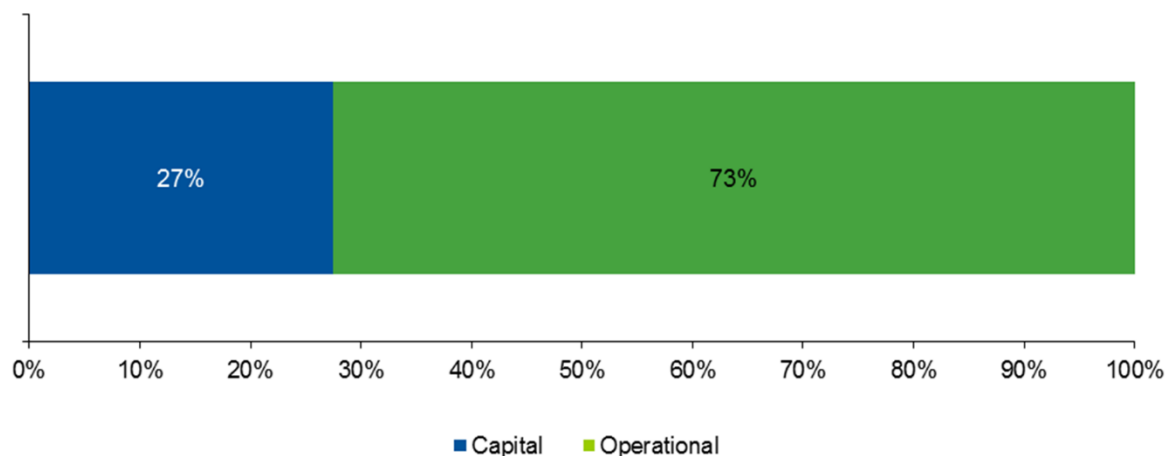
"The total day-to-day operations and maintenance expenses for this fiscal year that have not been capitalized. These do not include any amortization and depreciation expenses."

IT capital spending is defined as:

"The total capitalized IT spending for the fiscal year (that is, the full value of capitalized assets acquired in the fiscal year). This includes investments in new application development and IT infrastructure."

This information is typically available in most accounting or IT finance departments, and, thus, it may be easy to obtain year over year. This metric can provide visibility into the cyclical nature of capital investments (such as hardware, software and large service contracts) compared with recurring operational expenses (such as personnel, facilities and maintenance expenses). The challenge is in leveraging this information to communicate the linkage between IT investment and business results, because it is a traditional accounting view of IT cash flow and does not highlight how IT investment enables improved business performance.

Figure 10. Cross Industry: IT Operational vs. Capital Spending



Source: Gartner IT Key Metrics Data (December 2015)

Strategic IT Spending Categories: IT Spending to Run the Business, IT Spending to Grow the Business and IT Spending to Transform the Business

The distribution of IT spending to run the business, grow the business and transform the business provides a view of the IT investment profile to support business performance. In some industries, it is not uncommon to see a high "run" focus — typically because organizations in the industry are not planning strong changes in business model growth or high organic growth — which often translates into a more "cost center" role for IT in the industry or niche sector.

Classifying IT spending into categories that show impact on business outcomes or success can aid alignment and quantify underinvestment in IT. Gartner uses the following portfolio spending categories and defines them as follows:

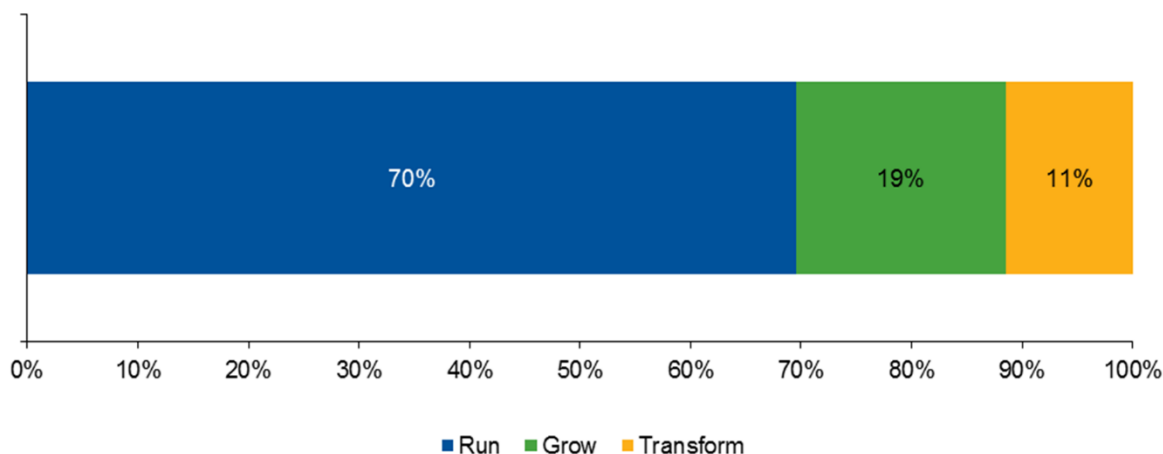
- **Run the business:** This is an indicator of how much of the IT resource is consumed and focused on the continuing operation of the business. It includes all nondiscretionary expenses as part of the run-the-business cost.
- **Grow the business:** This is an indicator of how much of the IT resource is consumed and focused on developing and enhancing IT systems in support of business growth (typically organic growth). Discretionary investments are more likely to be included in the grow-the-business or transform-the-business cost.
- **Transform the business:** This is an indicator of how much of the IT resource is consumed and focused on implementing technology systems that enable the enterprise to enact new business models. This is very much a "venture" category and would be represented by activities such as an insurer introducing usage-based insurance products such as telematics or a supermarket combining real time analytic monitoring with in-store task management to provide automated alerts to store staff to perform preemptive tasks.

Gaps in business alignment can be found by examining IT spending as it relates to the day-to-day operations of a business (run), the organic growth of the business or productivity improvement (grow) and its support of major business transformation, new products, services or business models (transform).

A common misconception with this measure is that an IT initiative that may transform the IT organization, such as data center modernization or virtualization, should be classified as a "transform the business" investment. While these IT initiatives do transform the IT organization, they should primarily be classified as "run the business" investments because they support pre-existing IT services. IT transformation often leads to new business process improvements that enable the business to grow or build new revenue streams. Therefore, these costs would need to be evaluated and distributed based on IT service and business performance.

The run, grow and transform business framework should always be viewed in business terms with respect to how IT will enable the business to grow or transform revenue, operating income and/or profit margins.

Figure 11. Cross Industry: IT Spending to Run, Grow and Transform the Business



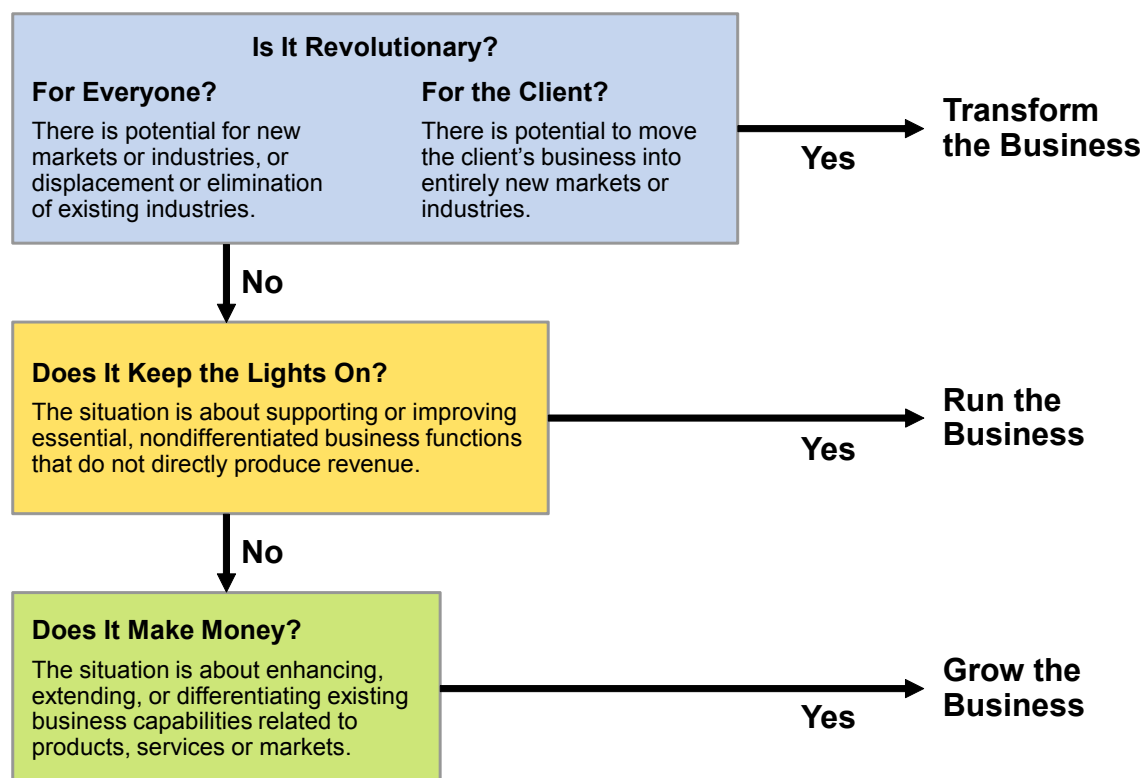
Source: Gartner IT Key Metrics Data (December 2015)

Determining the Business Context for Value

As organizations leverage the run-the-business, grow-the-business and transform-the-business concepts at a macro level, Gartner has found it helpful to define various IT investments (and portions of investments) with the same basic framework to illustrate the projected impact at the individual IT initiative and project levels.

With a basic understanding of the framework, as outlined here, organizations can apply the decision tree to select the category that best describes business value for their IT initiatives.

Figure 12. Business Value Category Decision Tree



Source: Gartner (December 2015)

The Link to Strategy

The run-grow-transform framework is a starting point for the overall process of describing, forecasting and measuring IT value. Gartner believes that the initial language and metrics used for business value are critical success factors in the organization's ability to make good IT investment decisions. For organizations that are looking for best practice, consider linking individual IT services to individual business process performances in a causal chain. For more information, see "A Simple Framework to Translate IT Benefits Into Business Value Impact"; this document has been archived; some of its content may not reflect current conditions.

IT Spending Distribution: Hardware, Software, Personnel and Outsourcing

The distribution of spending between hardware, software, personnel and outsourcing costs can show the dynamics of IT investments. For the purpose of this research, personnel includes occupancy/facilities costs.

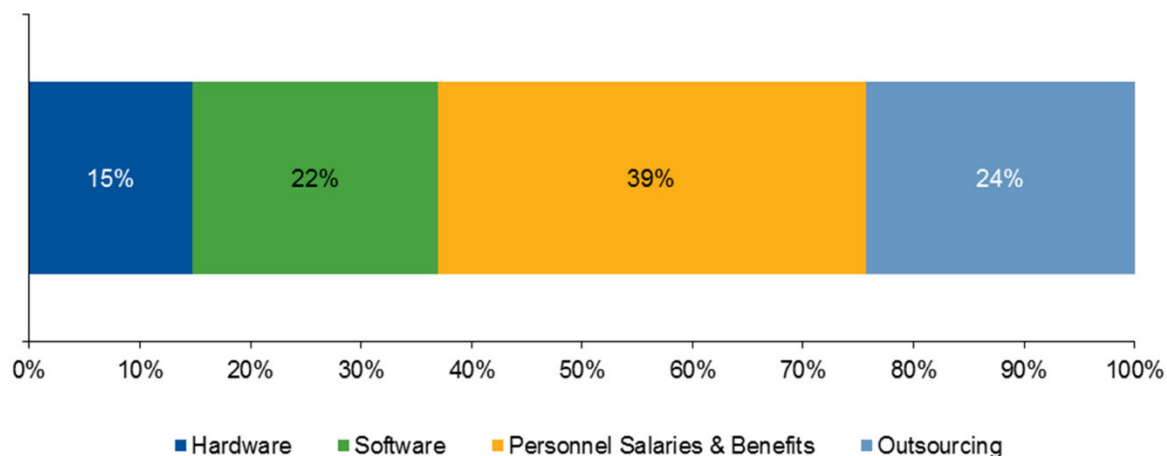
The definitions of each category are as follows:

- **Hardware Expenses:** These include all hardware expenses described in the [IT spending/budget](#) definition.

- **Software Expenses:** These include all software expenses described in the [IT spending/budget](#) definition.
- **Personnel Expenses:** These include:
 - **Salary and Benefits Expenses:** These should include salary (including overtime pay), benefits and "other" employee costs, such as travel and training for all IT FTEs. The "benefit load" should include costs for bonuses, paid holidays, vacations, medical/dental coverage, life and accident insurance, retirement plans, stock plans, disability, Social Security, unemployment compensation, dependent care, tuition reimbursements and employee assistance programs (for example, physical exams, exercise programs and similar costs).
 - **Occupancy/Facilities Expenses:** These include fully burdened costs for the facilities being used by the staff that supports the enterprise. Some examples include office space, furniture, electricity, maintenance, property taxes, security and office supplies. Occupancy costs for space dedicated to IT functions, such as the data center (including power/heat management and raised floors), are also included.
- **Outsourcing Expenses:** These include the fees for third-party or outsourcing contracts in which "outsourcing" is defined as "any situation in which the full operational responsibility for IT services is completely handed over to an external service provider (for example, print, maintenance, procurement, system management and equipment)." This includes outsourced transmission services/expenses, as well as Public Cloud IT services, such as SaaS, PaaS, and IaaS.

This measure can be helpful in adding context to the IT investment strategy from a sourcing perspective, in terms of accounting-based resources that may be insourced (for example, IT hardware, software, personnel and occupancy/facilities costs) versus services delivered by a third party (for example, outsourced services and data/voice transmission costs). As an organization increases or decreases the level of third-party/outsourced services, it may find an inverse effect in its associated personnel, hardware and/or software expenditures, depending on the scope of third-party services retained and on business requirements. The cyclical nature of capital investments in IT hardware and software may also play a significant role in an organization's IT spending outlay during a given year.

Figure 13. Cross Industry: Distribution of IT Spending on Hardware, Software, Personnel, Outsourcing



Source: Gartner IT Key Metrics Data (December 2015)

Distribution of IT FTEs: Insourced Versus Contractor

The distribution of IT FTEs (insourced versus contractor) can help provide a view of the IT staffing strategy.

Insourced IT FTEs are defined as:

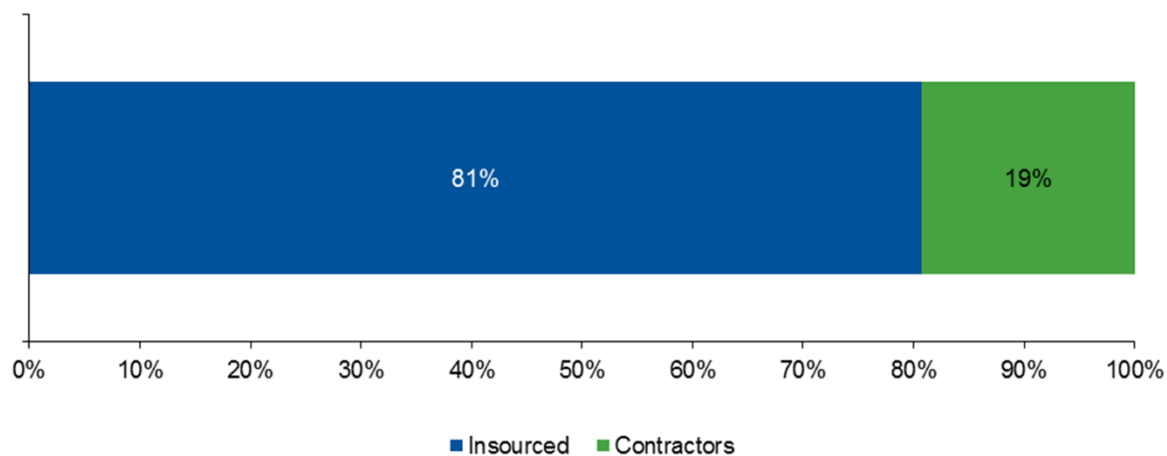
"FTEs who are employed by the IT organization (excluding contractors and consultants). These include all full-time and part-time employees supporting the IT environment, as defined by [IT spending/budget](#)."

Contract IT FTEs are defined as:

"Contract FTEs (contractors) who are supplemental to your staff and are "operationally" managed by the in-house staff. These include all full-time, part-time and temporary contractors supporting the IT environment, as defined by [IT spending/budget](#)."

IT contract labor or contractor usage can be an effective approach to maintaining flexibility and agility when business conditions are changing. However, keeping contractors for extended periods can be costly and limit process standardization.

Figure 14. Cross Industry: Distribution of IT FTEs: Insourced vs. Contractor



Source: Gartner IT Key Metrics Data (December 2015)

Distribution of IT Resources by IT Functional Area

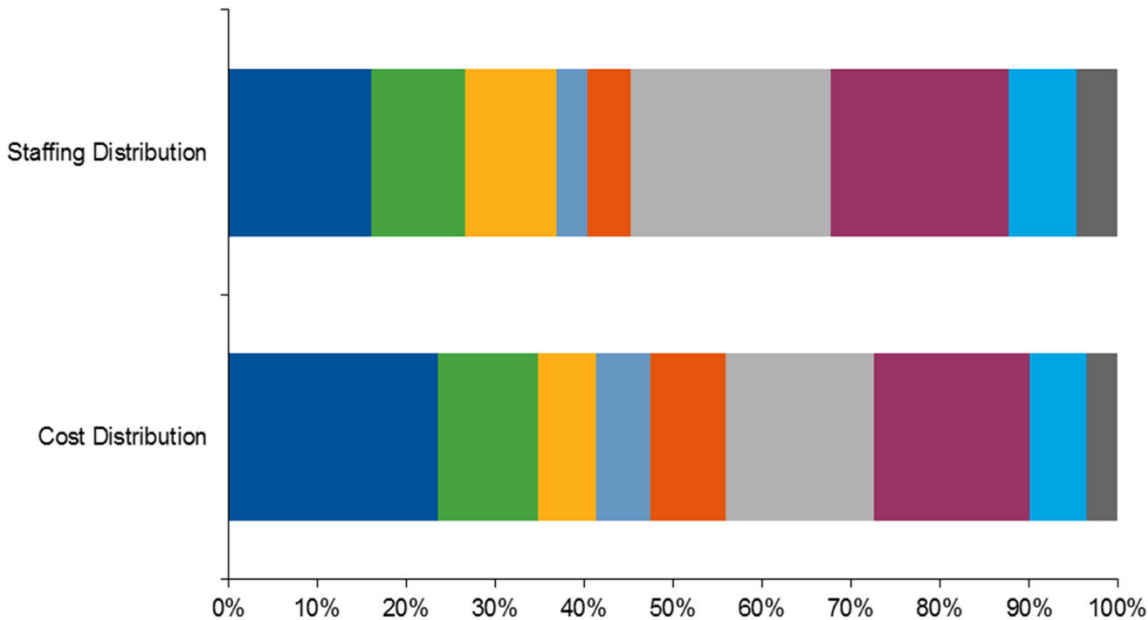
The distribution of IT cost by IT functional area provides a view of key IT resource consumption in the context of the overall IT portfolio:

- Definitions for the [IT Functional Area Framework](#) are defined below.
- This distribution is different from all the previous metrics because it represents an annual "expense view" of IT costs, which includes depreciation and amortization, as well as the current year's operational, lease and maintenance expenses. However, this view excludes the full capital expense outlay of the given year, to reflect the total annual cost of the IT environment.

The distribution of IT expenses into these categories helps to define the relative level of IT resources required per year to support the technology environment portfolio. This is often leveraged in tandem with IT resource planning exercises, wherein annual cost and staff resource allocations can be viewed in terms of IT infrastructure (data center, end-user computing, IT service desk, data network and voice network) versus applications (application development and application support) versus IT overhead (IT management, IT finance and IT administration). While this measure is helpful in identifying relative volumes of IT resource consumption by IT functional area, as compared to industry, it does not aid in identifying whether resources are being leveraged in a cost-effective or productive manner.

By viewing human resources (IT FTEs) within the context of the total portfolio, organizations are able to identify which environment is the most labor-intensive as a percent of the IT labor pool. Typically, application activities (development and support) demand the most resources from both cost and staffing perspectives. The degree to which an organization outsources should be considered alongside such staffing metrics.

Figure 15. Cross Industry: Distribution of IT Cost and Staffing by IT Functional Area



	Cost Distribution	Staffing Distribution
■ Data Center	24%	16%
■ End-User Computing	11%	11%
■ IT Service Desk	6%	10%
■ Voice Network	6%	3%
■ Data Network	8%	5%
■ Application Development	17%	22%
■ Application Support	18%	20%
■ IT Management	6%	8%
■ Finance & Administration	4%	5%

Source: Gartner IT Key Metrics Data (December 2015)

To better understand IT functional area cost-efficiency levels, Gartner recommends evaluating individual IT functional area annual costs compared with the workload supported, within the context of service levels, complexity, demand and scale. For more information on cost measures by IT functional area, see Gartner's various IT Key Metrics Data: Key Infrastructure Measures research (which is cited throughout this report and in the [IT Functional Area Framework](#) section).

IT Functional Area Framework

The following sections provide guidance on how to count costs and FTE numbers, as defined by the scope of the IT functional area framework/chart of accounts. This includes costs associated with the operation, lease, maintenance, and depreciation of hardware, software, connectivity, disaster recovery, occupancy/facilities and personnel to support the environment as defined below.

Data Center

Note: Data center (enterprise computing, storage and facilities) includes Windows, Unix and Linux servers, mainframe, storage, and any other platform running in the data center.

Hardware

- Processing devices: Include all hardware in server platform configurations, including internal disk storage, controllers, external disk arrays, tape libraries, optical jukeboxes, processors, memory, cards and other offline media supplies.

Software

- Annual costs for host and virtual OS licenses, virtualization and partitioning software, utilities, databases, middleware, content/document management search engines, messaging, communications (TCP/IP, FTP and host-based) and server security software.

Connectivity

- Intra-data-center connectivity: This typically includes routers, switches, load balancers, controllers and appliances. Data center communication networks are dedicated networks that are segregated or isolated from the general-purpose LANs or WANs. General-purpose or shared network costs are excluded from the data center and should be allocated to the data network.
- Inter-data-center connectivity: This typically includes the transmission cost and hardware cost for the fiber, used and unused (dark fiber), and the switches and controllers. Data center remote communication networks are dedicated networks that are segregated or isolated from the general-purpose LAN or WAN. General-purpose or shared network costs are excluded from the data center and should be allocated to the data network.

Disaster Recovery

- Includes disaster recovery contracts (compute and communications) for hot sites (shell facilities), dedicated hardware, software and connectivity.

Facilities/Occupancy

- Costs for power/heat management, furniture, access systems, office space, raised floor and / or slab using overhead cable trays etc.

Personnel

- Operations/maintenance, engineering technical services, planning and process management, service administration, management and administration, and facilities management.

For more detailed information, see "IT Key Metrics Data 2016: Key Infrastructure Measures: Windows Server Analysis: Current Year," "IT Key Metrics Data 2016: Key Infrastructure Measures: Unix Server Analysis: Current Year," "IT Key Metrics Data 2016: Key Infrastructure Measures: Linux x86 Server Analysis: Current Year," "IT Key Metrics Data 2016: Key Infrastructure Measures: Mainframe Analysis: Current Year" and "IT Key Metrics Data 2016: Key Infrastructure Measures:

Storage Analysis: Current Year." (Access to these documents is dependent on your level of Gartner subscription.)

End-User Computing

Hardware

- User client and peripheral hardware: desktop, laptop, thin-client and tablet PCs, personal and shared printers, multi-functional printers (MFPs or MFDs), handheld devices such as smartphones, and messaging devices. Transmission costs for these devices are excluded and should be allocated to the data network.
- IT management hardware: This encompasses hardware that primarily supports an IT process, not a business or user process. Examples are test and training devices, servers hosting network and system management (NSM) or asset management software, and devices used by the IT staff supporting the end-user computing environment. This also includes supporting a hosted virtual desktop (HVD) installation.

Software

- User client software.
- Personal productivity and database: This includes new word processors, spreadsheets, presentation packages, personal databases and other personal productivity software executing on client systems. It also includes upgrades.
- Messaging and groupware: This includes new and upgraded email, groupware and collaboration software.
- IT Management Software: This includes IT software that is used exclusively for IT functions including network, systems, storage and asset management, training and computer-based training (CBT) software as well as security software (antivirus, personal firewall, encryption, etc.) as well as mobile device management which offers software distribution, policy management, inventory management, security management and service management for smartphones and media tablets. This also includes supporting a hosted virtual desktop (HVD) installation.

Disaster Recovery

- Annual costs of hardware, software, connectivity, occupancy and contracts specifically dedicated to disaster recovery for end-user computing.

Occupancy

- Occupancy costs should include fully burdened costs for the facilities being used by the staff supporting the end-user computing environment. Some examples include office space, furniture, electricity, maintenance, property taxes, security and office supplies.

Personnel

- Operations/maintenance, engineering technical services, planning and process management, service administration, management and administration.

For more detailed information, see "IT Key Metrics Data 2016: Key Infrastructure Measures: End-User Computing Analysis: Current Year." (Access to this document is dependent on your level of Gartner subscription.)

IT Service Desk

Hardware

- PBX, ACD, interactive voice response, computer-telephony integration, IT service desk end-user computing devices, and IT service desk application servers.

Software

- This includes all software that is necessary to operate the IT service desk, such as expert knowledge tools, problem management tools, quality monitoring, self-service, workforce management software, workflow management software and IT service desk management portal software.

Occupancy

- Occupancy costs should include fully burdened costs for the facilities being used by the staff supporting the IT service desk environment. Some examples include office space, furniture, electricity, maintenance, property taxes, security and office supplies.

Transmission

- Includes inbound 800 service, dedicated trunking, local service, outbound long distance, Internet access (for example, IT service desk portal) and networking between IT service desks.

Disaster Recovery

- Annual costs of hardware, software, connectivity, occupancy and contracts specifically dedicated to disaster recovery for IT service desk.

Personnel

- IT service desk agents, operations/maintenance, engineering technical services, planning and process management, service administration, management and administration.

For more detailed information, see "IT Key Metrics Data 2016: Key Infrastructure Measures: IT Service Desk Analysis: Current Year." (Access to this document is dependent on your level of Gartner subscription.)

Voice Network

Note: Total voice network includes voice premise technology and wide-area voice network costs, as well as dedicated cellular (mobile) voice network costs.

Hardware

- Wide-area voice network hardware: Switching and routing, as well as terminating hardware. Terminating hardware includes microwave, satellite, compression, multiplexer/channel bank, PBX network interface card and channel service unit/data service unit (CSU/DSU).
- Voice premise: Telephone system equipment (such as voice switch/server and peripherals, including modules and uninterruptible power supply [UPS]), premise system phones (voice only; smartphones such as BlackBerry, iPhone and Android-based devices are excluded and should be allocated to the end-user computing environment), voice mail hardware (for example, processors and storage) and message authentication control (MAC) materials.
- IT management (network operations center [NOC]): This includes hardware that is located within a client's NOC and is used to support a client's centrally managed voice infrastructure/network. This includes client devices (PCs on NOC desktops) as well as servers (NOC), located within the NOC or elsewhere, but used primarily by the NOC to support the voice network infrastructure. The costs for these client devices/servers may need to be prorated between voice and data services, depending on a client's NOC environment.

Software

- Switch/voice server and peripherals (e.g., automatic call distribution [ACD], voice response unit [VRU]) and voice mail software costs.
- IT management (NOC): Software used by the NOC primarily to support/manage a client's voice networks. The costs for this software may need to be prorated between voice and data services, depending on a client's NOC environment.

Transmission

- Includes all outbound and inbound transmission costs. It also includes the annual cost for local central office lines (where applicable) as well as cellular (mobile) voice only transmission costs.

Disaster Recovery

- Disaster recovery contracts (communications) for hot sites (shell facilities), dedicated hardware, software, and connectivity.

Occupancy (For Personnel Only)

- Occupancy costs should include fully burdened costs for the facilities being used by the staff supporting the voice network service. Some examples would include office space, furniture, electricity, maintenance, property taxes, security and office supplies. Occupancy for hardware (for example, closet space) is specifically excluded (that is, occupancy costs should apply only to the people supporting a client's voice network).

Personnel

- Operations/maintenance, engineering technical services, planning and process management, service administration, management and administration.

For more detailed information, see "IT Key Metrics Data 2016: Key Infrastructure Measures: Voice Network Analysis: Current Year," "IT Key Metrics Data 2016: Key Infrastructure Measures: Wide-Area Voice Network Analysis: Current Year" and "IT Key Metrics Data 2016: Key Infrastructure Measures: Voice Premise Technology Analysis: Current Year." (Access to these documents is dependent on your level of Gartner subscription.)

Data Network

Note: Data network includes WAN, LAN and Internet access services (IASs), as well as dedicated cellular (mobile) data network costs:

- WAN: Connectivity and transmission of business-critical data between enterprise locations and business partners
- LAN: Accounts for the provisioning of communications and connectivity to critical business systems within enterprise sites and campuses (Note: Costs associated with permanent building cabling, horizontal and vertical, are excluded. Likewise, costs for any interbuilding cabling — copper and/or fiber — that would be found on a campus are also excluded.)
- IAS: Enterprise access to the global Internet, for the use of its personnel and for the use of its external customers to access enterprise websites

Hardware

- Security hardware: Dedicated data network firewall hardware/servers, intrusion/detection servers and devices, as well as encryption hardware.
- NOC hardware: This includes hardware that is located within a NOC to support a centrally managed data network infrastructure/network. This includes test equipment and remote monitoring equipment, client devices (PCs on NOC desktops) and network management servers (NOCs).
- Switching, routing and wireless hardware, including switches and routers, multiplexers, satellite equipment, boundary (branch) routers, backbone routers and bridges, and wireless access points.
- Other dedicated data network hardware, including Domain Name System (DNS) and Dynamic Host Configuration Protocol (DHCP) servers, optimization equipment such as Internet load-balancing hardware, UPS, MAC hardware and MAC cable (closet to desktop).
- Some of this may need to be prorated between the voice and data network.

Software

- Security software: Dedicated data network firewall software, intrusion/detection software as well as encryption software.
- NOC software: All NSM software costs related to the NOC's support of the data network infrastructure/network.

Transmission

- Annual data network transmission costs, such as carrier digital services including Frame Relay access, ports and PVCs (Permanent Virtual Circuits), ATM (Asynchronous Transfer Mode) access, ports and PVCs, MPLS (Multiprotocol Label Switching) access, ports, and CARs (Committed Access Rates) which also includes specific charges for Quality of Service (QoS) commitments, sometimes referred to as traffic shaping, T3/E3, dial backup service, Synchronous Optical Network (SONET), metropolitan Ethernet, and dark fiber, as well as annual cost for circuits connected to the Internet service provider, and cellular (mobile) data transmission costs.

Disaster Recovery

- Disaster recovery contracts (communications) for hot sites (shell facilities), dedicated hardware, software, and connectivity.

Occupancy (For Personnel Only)

- Fully burdened costs for the facilities being used by the staff supporting the data network. Some examples include office space, furniture, electricity, maintenance, property taxes, security and office supplies.

Personnel

- Operations/maintenance, engineering technical services, planning and process management, service administration, management and administration.

For more detailed information, see "IT Key Metrics Data 2016: Key Infrastructure Measures: Data Network Analysis: Current Year," "IT Key Metrics Data 2016: Key Infrastructure Measures: Wide-Area Data Network Analysis: Current Year" and "IT Key Metrics Data 2016: Key Infrastructure Measures: Local-Area Data Network Analysis: Current Year." (Access to these documents is dependent on your level of Gartner subscription.)

Applications

Application Development

- New code for a new application and functional enhancements to the current code that take more than two person-weeks, or that typically add eight function points or more. A "functional enhancement" is defined as "a change made for a user that allows additional capabilities (from a business point of view) that were not there before. In some environments, major enhancements can actually be added in less than two person-weeks. If this is the case, and eight function points or more are added (about 800 lines of COBOL or 300 lines of a database language), then this is still categorized as development

Application Support

- Bug fixes of any size or duration, maintenance of hard-coded data or tables (including field size changes) embedded within the programs (any size or duration), and functional enhancements to

current code that take less than two person-weeks and typically add fewer than eight function points, or any project that produces no new business functionality for the user.

- A "functional enhancement" is defined as "a change made for a user that allows additional capabilities (from a business point of view) that were not there before." In some environments, major enhancements can actually be added in less than two person-weeks. If this is the case, and eight function points or more are added (about 800 lines of COBOL or 300 lines of a database language), then this is categorized as development rather than support.

Hardware

- This includes only hardware (mainframes, servers, end-user computing devices) used by the application development or support staff members to do their jobs (that is, client devices as well as servers and a portion of the mainframe used for application development and testing). This excludes end-user or production hardware.

Software

- Development and support software required by the application development and support staff members to do their jobs. It may include the languages/compilers/databases, development/testing tools and IT management software tools, such as project estimators and project schedulers.
- Business functionality software: For application support, this includes the maintenance cost of off-the-shelf vendor packages, as well the annualized cost of the software.

Occupancy

- Fully burdened costs for the facilities used by the development or support staff and included in this analysis view. Some examples would include office space, furniture, electricity, maintenance, property taxes, security and office supplies.

Personnel

- Application development: This includes staff involved in developing new applications, enhancing existing applications, installing new packages and installing major functional enhancements to existing packages.
- Application support: This includes staff involved in supporting applications that exist within the current portfolio. It also includes personnel who are responsible for fixing programming problems uncovered when applications are running in production. It does not include any personnel who are responsible for running the production applications. If an upgrade for a packaged application primarily contains fixes for existing problems, then the efforts involved in installing such a maintenance upgrade are included in application support.

For more detailed information, see "IT Key Metrics Data 2016: Key Applications Measures: Cost and Staff Profile: Current Year," "IT Key Metrics Data 2016: Key Applications Measures: Application Development: Current Year" and "IT Key Metrics Data 2016: Key Applications Measures: Application Support: Current Year." (Access to these documents is dependent on your level of Gartner subscription.)

Corporate IT Management

Only include functions that are at a level within the IT organization that, after best effort, cannot be allocated to an IT functional area.

Office of the CIO/CTO

- This includes the "C-level" IT management, including the CIO and CTO functions. Also included here are the direct reports of the CIO, who spend the majority of their time providing enterprise-wide support other than the functions outlined below (that is, special projects).

IT Human Resources

- This includes resources dedicated to human resource issues surrounding the recruiting and retention of IT staff.

IT Marketing

- This includes resources dedicated to marketing the capabilities of the IT organization to the business units.

Technology Planning and Process Management

- This includes activities related to the planning for and management of current and future technology needs, and the establishment of policies and processes relating to technology. This also includes, but is not limited to, systems research, product management, technology evaluation and purchase decision making, the establishment of processes surrounding security and virus protection, and business continuity/recovery.

Disaster Recovery

- This includes resources dedicated to planning, testing and implementing contingency procedures across all IT functions. This also includes the staff dedicated to safeguarding the enterprise's ability to continue operations of vital business functions following physical damage or other catastrophes that impact business facilities. Responsibilities include:
 - Maintaining disaster recovery documentation
 - Negotiating contingency site arrangements and serving as liaison with the vendor
 - Managing off-site data retention

Security

- This includes resources that oversee the development of standards and procedures for ensuring overall network and systems integrity.

IT Finance and Administration

Only include functions that are at a level within the IT organization that, after best effort, cannot be allocated to an IT functional area.

IT Administration

- This includes direct administrative and clerical support to enterprise-level IT. Positions include secretary, receptionist and administrative assistant.

Budget and Chargeback

- This area establishes the overall IT budget, monitors actual expenses versus the budget, arranges financing for purchases and performs financial reporting to other enterprise areas. Staff members also handle the operation of the chargeback system. Positions include financial analyst and chargeback administrator.

Asset Management

- **Tracking:** This area provides the administrative support for tracking systems and system components. It accounts for labor and contract costs for managing depreciation records and lease contracts, performing asset inventories (physical or automatic management), asset identification and tracking, asset database management, change recording and reconciliation. It also includes the creation and maintenance of an up-to-date record of installations, moves, adds, changes, removals and final disposal of all assets (for example, hardware, software and circuits). The record contains information for locating, assessing, auditing, troubleshooting, counting and assigning assets, or performing other technical and business functions without the need to repeatedly visit the asset location or reassemble data records. It also includes the determination of an asset's useful life, including planning for the installation, upgrade, and removal/disposal of the asset and executing the plan.
- **Procurement:** This area solicits bids, negotiates purchasing agreements, establishes purchase orders, validates vendors' bills, coordinates with accounts payable for payments and handles contract administration.

Quality Assurance

- This includes staff responsibility for monitoring, tracking and recommending solutions for improving the content and delivery of services provided by the customer service contact center.

Training

- This refers to the primary source for the delivery of training within the IT organization and for end users in the business units. This area may also prepare the training materials, evaluate employee skills and assist in the creation of custom training programs for the organization.

Conclusions

A successful IT performance measurement program communicates metrics that are important to a target audience. This remains true when communicating IT investments to the business. The metrics

and benchmarks that Gartner has identified here provide a high-level view of current trends in IT by industry. They also reveal trends in business alignment, staffing, technology and outsourcing. They can be used to assist in communicating alignment with the business and in evaluating targets in key technology areas. They provide context for key business decisions and internal performance measures.

It is important to understand that the published averages are not targets, and decisions of "good" or "bad" performance should not be based on these metrics. They are indicative reference points from which to view current performance and investment levels to help you identify differences that could merit further analysis. Articulating why your organization is higher or lower than these metrics is the first step in better business alignment and the communication of IT's impact on business performance.

For more detailed metrics focused on IT infrastructure cost and performance, consult Gartner's various IT Key Metrics Data: Key Infrastructure Measures research, which can help provide more insight into IT-centric cost-efficiency and productivity metrics.

For more detailed metrics focused on IT application spending, staffing and project measures, consult Gartner's IT Key Metrics Data: Key Applications Measures research, which can help provide more insight into total application development versus support metrics.

ITKMD is a Gartner Benchmark Analytics solution that delivers indicative IT metrics in a published format as directional insight for IT organizations. This solution represents a subset of the metrics and prescriptive benchmark analysis capability that is available through Gartner Benchmark Analytics. For ongoing and more targeted analyses, Gartner Benchmark Analytics provides clients with in-depth, personalized benchmarking and customized assessments. These prescriptive, client-focused engagements are structured to identify technology performance strengths, to prioritize opportunities for IT and business optimization, and to assist in communicating IT's role in creating business value through strategy enablement and process improvement.

Related IT Key Metrics Data Research

This research is part of a set of Gartner Benchmark Analytics research pieces.

Depending on your subscription level for Gartner services, some clients have access to the Gartner ITKMD publication series from gartner.com, select "Explore," "Metrics & Tools," and "IT Key Metrics Data."

For detailed information and metrics specific to each of the IT Key Metrics Data: Key Industry Measures, see individual documents outlined in Table 1 above, or review "IT Key Metrics Data 2016: Index of Published Documents and Metrics" for a comprehensive list of all available IT Key Metrics Data 2016 research.

Table 10. ITKMD 2016: Overview Document Index

Document Title	Current Year
Executive Summary	G00291328
Small and Midsize Enterprise Executive Summary	G00291329
Resources to Review Your IT Budget Comparison Report	G00291330
Index of Published Documents and Metrics	G00291331
Demographics	G00291332
Surveys	G00291333
Frequently Asked Questions	G00291334
Glossary of Terms	G00291335
Definition of Industries	G00291336

Source: Gartner IT Key Metrics Data (December 2015)

Appendix: Exploring Gartner's Prescriptive Benchmark Analytics Capabilities

The world's leading organizations use Gartner Benchmark Analytics to support the execution of Missions-Critical Priorities. Gartner's consulting-based benchmark analytics capabilities deliver unbiased comparisons of IT performance relative to unique client-specific peer organizations and those considered best in class. Benchmarks can help you assess your IT organization's performance to ensure delivery of cost-effective and efficient IT services, identify opportunities for improving performance and effectively communicate value to the business.

Gartner Consulting led benchmarks are individually configured, project-specific benchmarks that help support such IT challenges as growth planning, charging for IT services, budget validation, mergers and acquisitions, end-user satisfaction, application rationalization, or the support of outsourced service contract evaluation. Benchmarking offers a stake in the ground, to determine where an enterprise is today, and a future road map, which shows where opportunities lie.

Gartner Benchmarking can help you:

- Plan your IT budget with relevant facts and metrics to justify your IT spending and staffing costs.
- Identify opportunities for cost optimization and investment prioritization.
- Use data to improve dialogue and align with business units and the board.
- Select the right mix of insourcing and outsourcing at fair-market prices and service levels available today.

Gartner Benchmark Analytics Select Case Studies

CIO and IT Executive Benchmarks

CIO and IT executive benchmarks evaluate performance from two perspectives: a cost and maturity assessment of critical IT competencies and IT business value. Learn more at [Gartner Consulting: For Your IT Role](#).

CIO Benchmarking Case Studies

- [CIO Wants to Move IT to a Process-Focused Delivery Model](#)
- [CIO Wants to Obtain a Better Understanding of IT Performance](#)
- [Organization Establishes a Baseline and Looks to the Future](#)
- [Organization Evaluates IT's Ability to Support the Dean's Vision](#)
- [CIO Balancing Increased Demand With Flat Resources](#)

IT Budget Benchmarking Case Studies

- [Organization Ensures Industry Competitiveness](#)
- [Organization Assesses Merger and Acquisition Activity Implications on IT Spend](#)

Consortium Benchmarking Case Studies

- [Organizations Share Best Practices](#)

Infrastructure and Operations Benchmarks

Infrastructure and operations benchmarks create a starting point in the process of helping IT organizations identify and assess all IT performance levels. Learn more at Gartner Consulting's Benchmarking: [For Your IT Challenges — Infrastructure and Operations](#).

Infrastructure and Operations Benchmarking Case Studies

- [Organization Assesses IT Performance to Ensure Effectiveness and Competitiveness](#)
- [Organization Benchmarks IT Costs to Ensure Ongoing Cost-Effectiveness and Consistency With Industry](#)
- [Organization Undergoes Cost-Optimization Assessment](#)
- [Organization Creates a Foundation for Continual Improvement](#)

Enterprise Computing Benchmarking Case Study

- [Organization Benchmarks Data Center Costs to Ensure Cost-Effectiveness](#)

End-User Computing Benchmarking Case Study

- [Organization Creates Foundational Components for Increased Transparency of Services to End Users](#)

Applications Benchmarks

Applications benchmarks are the starting point in the process to help IT organizations identify and assess application development and support performance levels. Learn more at Gartner Consulting's Benchmarking: [For Your IT Challenges — Applications](#).

Application Development and Support Benchmarking Case Studies

- [Organization Ensures Competitiveness and Quality](#)
- [Organization Maintains a Foundation for Continual Improvement](#)
- [Organization Manages Stakeholders and Identifies Performance Improvement](#)
- [Organization Creates a Foundation for Continual Improvement](#)

SAP Benchmarking Case Study

- [Agency Ensures Delivery of Cost-Effective SAP Services](#)

Sourcing and Vendor Relationship Benchmarks

Sourcing and vendor relationship benchmarks provide an accurate answer to the question, "Is this a good market price for the services being provided?" Learn more at Gartner Consulting's Benchmarking: [For Your IT Challenges — Sourcing and Vendor Relationships](#).

Market Assessment Benchmarking Case Studies

- [Organization Implements Third-Party Benchmark Clause](#)
- [Organization Wants to Execute a Global Consolidation Strategy](#)
- [Organization Accelerates Business Growth](#)

IT Service Catalog Benchmarking Case Study

- [Organization Assesses IT Service Catalog Rates to Validate Current Competitiveness](#)

Cloud as a Service Benchmarking Case Studies

- [Organization Looks to Procure Cloud Email](#)
- [Organization Evaluates Backup as a Service](#)
- [Organization Requires Third-Party Assessment of Storage as a Service Offering](#)
- [Organization Desires Unified Communications as a Service Contract Evaluation](#)

End-User Satisfaction Benchmarks

IT customer satisfaction benchmarks establish a baseline for customer satisfaction and create a road map that helps prioritize efforts to increase these levels. Learn more at Gartner Consulting's Benchmarking: [For Your IT Challenges – IT Customer Satisfaction](#).

IT Customer Satisfaction Benchmarking Case Study

- [Organization Undergoes an Assessment of End-User Satisfaction](#)
- [Agency Assesses End-User Satisfaction](#)

IT Business Effectiveness Benchmarks

IT business effectiveness benchmarks establish a baseline for IT's effectiveness in meeting business needs and identify opportunities to better align the IT organization with the enterprise for maximum results. Learn more at Gartner Consulting's Benchmarking: [For Your IT Challenges – IT Business Effectiveness](#).

Business Effectiveness Benchmarking Case Study

- [Agency Undergoes an Assessment of Business Effectiveness](#)

More information on Gartner Benchmark Analytics can be obtained by contacting your account executive, or by email: benchmarkinginfo@gartner.com.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"IT Key Metrics Data 2016: Resources to Review Your IT Budget Comparison Report"

"How to Shift the Focus From IT Cost Cutting to Business Optimization"

"Use Benchmarking to Identify IT Cost Optimization Opportunities"

"The Ongoing Opportunity for IT Cost and Value Optimization, 3Q15 Update"

"Developing a Financial Transparency Roadmap"

"10 Absolute Truths for Measuring the Business Value of IT"

"Four Keys to Effective Service Costing"

"10 Absolute Truths for Costing IT"

"One More Time: This Is How You Express Costs in Business Value Terms"

"The Gartner Cost Value Matrix: Assess If Cost Optimization Initiatives Balance Cost Reduction and Business Value"

Evidence

- This research contains relevant database averages and ranges from a subset of metrics and prescriptive engagements available through [Gartner Benchmark Analytics](#) consulting-based capabilities.
- Employee, income and revenue data is based on the most recently completed fiscal year.
- Calculations were made using worldwide observations.

More on This Topic

This is part of an in-depth collection of research. See the collection:

- [How to Optimize Your Network Spending](#)

GARTNER HEADQUARTERS**Corporate Headquarters**

56 Top Gallant Road
Stamford, CT 06902-7700
USA
+1 203 964 0096

Regional Headquarters

AUSTRALIA
BRAZIL
JAPAN
UNITED KINGDOM

For a complete list of worldwide locations,
visit <http://www.gartner.com/technology/about.jsp>

© 2015 Gartner, Inc. and/or its affiliates. All rights reserved. Gartner is a registered trademark of Gartner, Inc. or its affiliates. This publication may not be reproduced or distributed in any form without Gartner's prior written permission. If you are authorized to access this publication, your use of it is subject to the [Usage Guidelines for Gartner Services](#) posted on gartner.com. The information contained in this publication has been obtained from sources believed to be reliable. Gartner disclaims all warranties as to the accuracy, completeness or adequacy of such information and shall have no liability for errors, omissions or inadequacies in such information. This publication consists of the opinions of Gartner's research organization and should not be construed as statements of fact. The opinions expressed herein are subject to change without notice. Although Gartner research may include a discussion of related legal issues, Gartner does not provide legal advice or services and its research should not be construed or used as such. Gartner is a public company, and its shareholders may include firms and funds that have financial interests in entities covered in Gartner research. Gartner's Board of Directors may include senior managers of these firms or funds. Gartner research is produced independently by its research organization without input or influence from these firms, funds or their managers. For further information on the independence and integrity of Gartner research, see "[Guiding Principles on Independence and Objectivity](#)."