

CMMI Technical Report: Performance Results

Reflecting Appraisal Results
Data from 2019 to 2023

Compiled April 2024



ISACA[®]

CMMI Performance Solutions

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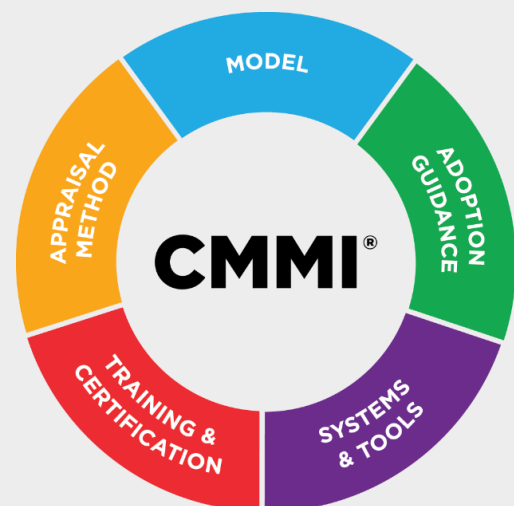
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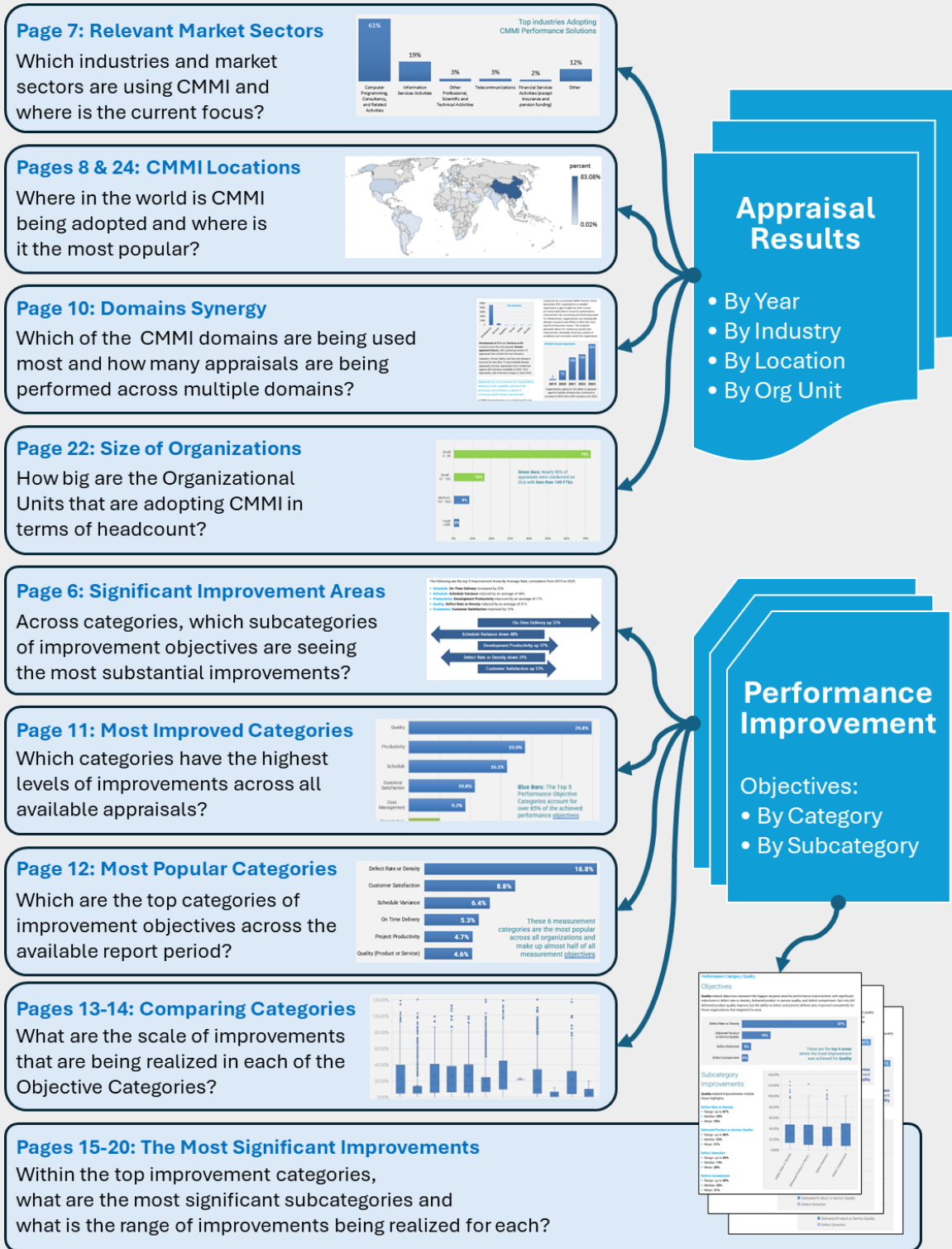
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Content Highlights by Data Source

This annual technical report features the following insights into performance data.



Executive Summary

Looking Back and Moving Forward

Strategic Beginnings: ISACA’s Capability Maturity Model Integration (CMMI®) has grown and evolved quite a bit in its 33-year history. Tracing CMMI’s roots back to the Software CMM first released in 1991, CMMI has continued to set the bar and is synonymous with how the term “maturity level” is used across a broad set of industries, domains, frameworks, and geographies worldwide.

Trailblazing Initiatives: With the rapidly increasing pace of technology, business, information growth, and changing world events, **CMMI has been keeping pace** with industry best practices now covered in both Core Practice Areas and across multiple domain-specific Practice Areas that address current industry needs such as cybersecurity and data management. We are also excited to be kicking off our CMMI **Artificial Intelligence (AI) initiative** in 2024.

Changes in 2023 Performance

Report Results: We saw not only an **all-time high** in global CMMI appraisals, but also a continued trend in **multiple domain appraisals** and increased performance in achieving key business objectives. CMMI V3.0 coverage of organizational performance improvement includes best practices across 8 domains, integrated into a single, yet highly customizable model of best practices.

CMMI V3.0 includes industry best practices across eight domains:

- ❖ Data
- ❖ Development
- ❖ People
- ❖ Safety
- ❖ Security
- ❖ Services
- ❖ Suppliers
- ❖ Virtual

“CMMI Performance Solutions provide a prioritized pathway to build and implement new capabilities that deliver consistently measurable results and outcomes.”

Reporting: Celebrating 33 years, we are releasing this **CMMI Technical Report: Performance Results**. This report describes and highlights the consistently impressive results of performance improvement organizations who have adopted CMMI, as recorded in the CMMI Performance Report and independently validated by certified CMMI Lead Appraisers and Appraisal Teams.

CMMI Performance Solutions, and the V3.0 Model and related updates, continue to demonstrate consistent performance for quality, cost and schedule management, and productivity improvements in nearly any organization or industry, worldwide.



—Ron Lear, ISACA Vice President,
Models and Frameworks
CHMLA, LSSGB, ISO Lead Auditor

Learn More

For more information about adopting CMMI Performance Solutions, visit [CMMIinstitute.com](https://www.cmmiinstitute.com).



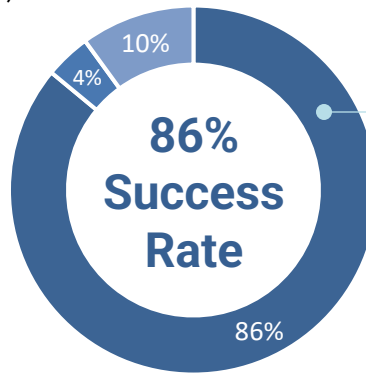
Goal Achievement

Maximizing Potential: Performance Data Overview

Over 14,000 appraised Organizational Units (OUs) affirm the proven results achieved by leveraging CMMI to set, meet, and exceed organization goals.

Background: For **over 24 years**, high-performing organizations have achieved clear, sustainable business results with ISACA's Capability Maturity Model Integration (CMMI). Originally created for the U.S. Federal Government to assess the quality and capability of software contractors, CMMI has expanded beyond software engineering to help organizations **in any industry** better understand their current level of capability and performance, offering comprehensive guides to **optimize business results**.

Report Basis: The information in this presentation is based on an analysis of the performance improvement results from over **14,000 approved appraisals** from 2019 to 2023.



Data Sources: These appraised OUs reported their “before and after” improvement intentions, which included a total of **50,666 objectives** across the **13,925 organizations** appraised, in the required CMMI Performance Report template. The result of this was an astounding **86% achievement success rate** for their accomplished improvement objectives; this is a 1.7% increase over the cumulative data from the 2022 report. Another 4% was “soon to be achieved” for a **total of over 90%** across key areas—including quality, cost & schedule performance, productivity, and more. The remaining 10% reflects improvements in progress or objectives not yet achieved.

Validation: Each of these results was identified and achieved by the organizations being appraised against CMMI, with the performance improvements **independently validated** by CMMI Appraisal teams.

Appraisal Years:

2019-2023

Appraised Organizations:

13,925

Approved Appraisals:

14,673

Objectives Reported:

50,666

Performance Achieved:

90%

Comparing to Previous Years: Over 5000 appraisals were performed in 2023—a cumulative increase of 53% since 2019-2022. The data also showed an increase to 86% successful achievement of objectives, up from the previous 84% in the cumulative 2019 to 2022 data.

Notables & Standouts

Key Takeaways: Best Practices

The data is clear—adopting CMMI Performance Solutions yields consistent, measurable performance results across multiple industries and locations.

Exceed Performance Expectations

- CMMI adoption enables a **proven and effective approach** for performance-based improvement and enables innovation and transformation
- CMMI's focus on **persistent and habitual performance improvement** sets it apart from any other standard or model
- **Flexible architecture** and an **online experience** enable the adaptation of content to customer... such as ISO, DTEF, COBIT

Best Practices: CMMI Addresses Sustaining Habit and Persistence

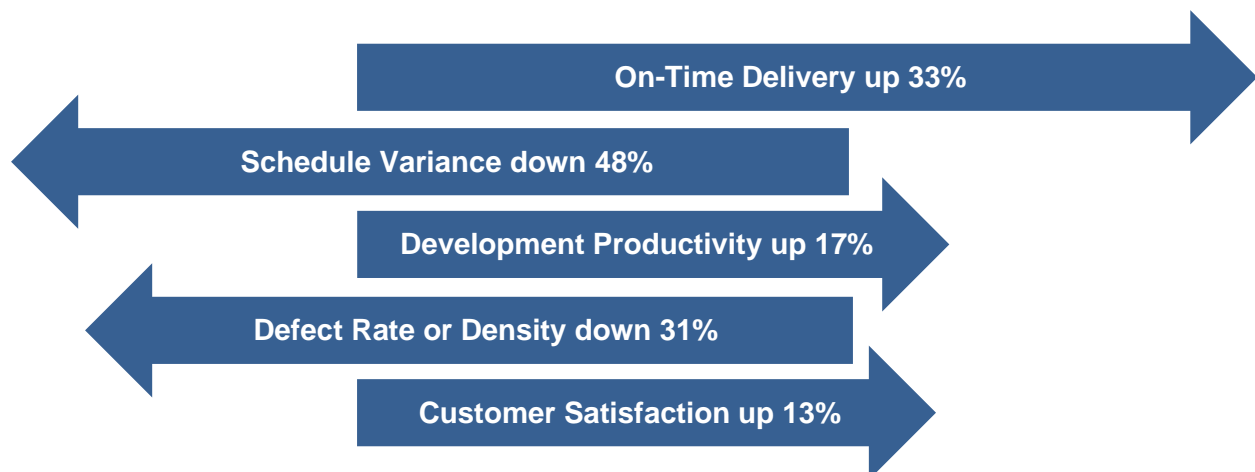
Continuous performance improvement becomes the norm. CMMI best practices sustain habit and persistence—over time and between appraisals, with a "self-raising bar" for performance. Appraisals demonstrate and corroborate that improvement. Processes become habitual when:

- There is active senior management support
- Processes apply to everyone in the organization
- There are consequences for following or not following established processes

Top Improvement Areas

The following are the top 5 Improvement Areas by Average Rate, cumulative from 2019 to 2023.

- **Schedule: On-Time Delivery** increased by 33%
- **Schedule: Schedule Variance** reduced by an average of 48%
- **Productivity: Development Productivity** improved by an average of 17%
- **Quality: Defect Rate or Density** reduced by an average of 31%
- **Customers: Customer Satisfaction** improved by 13%



Comparing Cumulative 2019-2022 to 2023 Data: Development Productivity improved from 15% to 19% and Schedule Variance reduced from 58% to 14%.

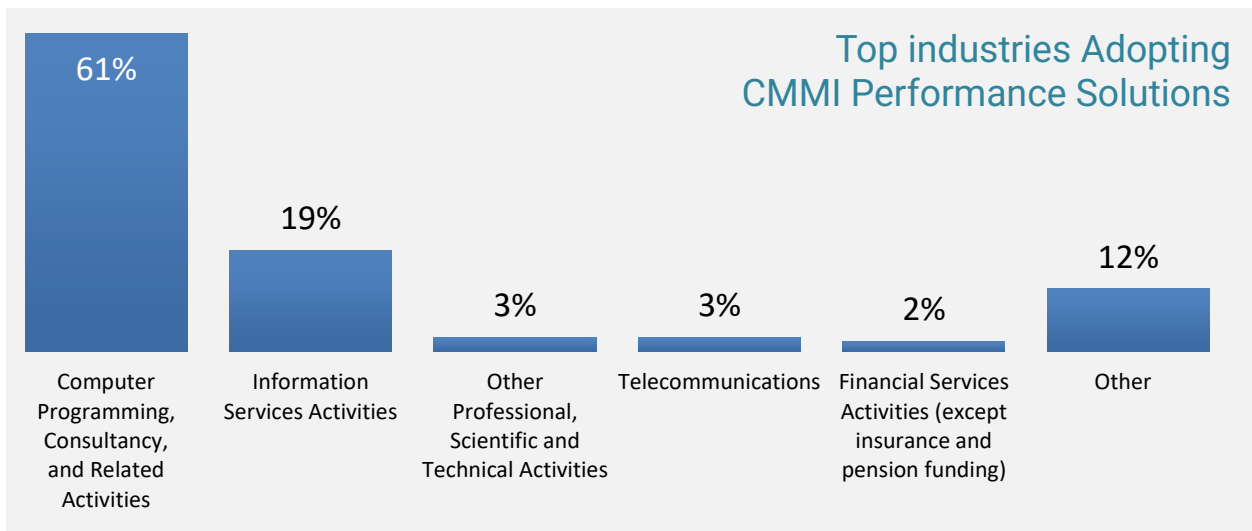
Section One:

Appraisal Results

These results are based on over 50,000 performance objectives* appraised to CMMI Performance Solutions, reported, and registered with ISACA, and independently corroborated by CMMI Appraisal Teams.

In 2023, CMMI usage continues steady growth in both its historically strong business sectors as well as new markets around the world.

- **Business Types:** Information Technology, Professional, Scientific and Technical Activities, Financial, Manufacturing and Telecommunications (based on reported ISIC code)
- **Location:** Primary adoption in the United States, China, India, and Spain
- **Remarkable Results:** All categories of business performance objectives showed significant performance improvement results
- **Achieving Expectations:** 86% of reported performance objectives were met or exceeded
- **The Biggest Categories of Improvement:** Quality, Productivity, Schedule, Customer Satisfaction, and Cost Management



* 13,925 organizations conducted 14,673 appraisals with a total of 50,666 performance objectives. Several organizations conducted more than one appraisal resulting in a larger number of appraisals compared to the number of organizations.

Location: Where in the World?

Appraised Organizations by Country

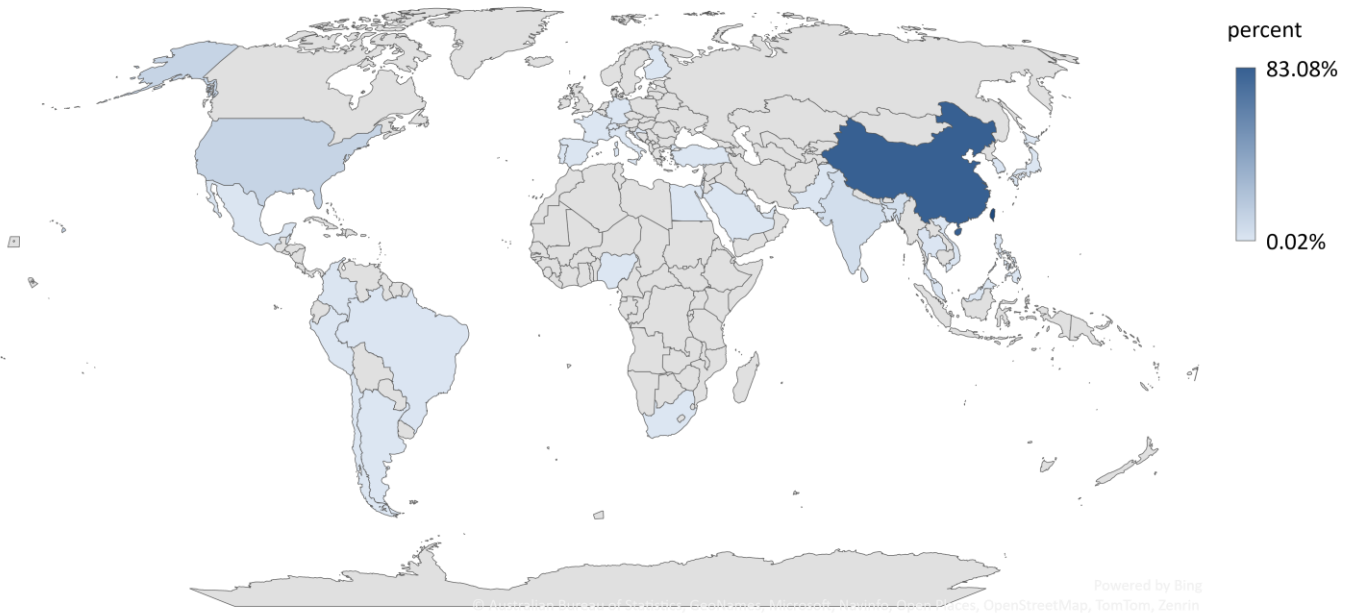
The total number of appraisals continued to increase.

By comparison as a percentage, the 2023 growth in China makes it seem as though there was a decrease in adoption throughout the rest of the world, but that is not the case. Eight of the top ten adoption countries saw **increases in the number of appraisals**: +22% in China, +1% in United States, +3% in India, +100% in Spain, +21% in Mexico, +100% in Colombia, +21% in Brazil, and +30% in Türkiye.

Top 10 Countries	
China	83.1%
United States	10.9%
India	4.8%
Spain	0.7%
Mexico	0.6%
Colombia	0.5%
Brazil	0.3%
South Korea	0.3%
Thailand	0.3%
Türkiye	0.3%

For a list of all countries, refer to Appendix Locations section on page 24.

Map of Appraised Organizations by Country



"The Indian IT sector is a significant contributor to the global economy generating billions of dollars annually. Indian companies, including small and medium size enterprises, have been at the forefront of CMMI process adoption, including a growing number that have been attaining CMMI Level 5 in the last few years. As Indian companies strive to continue to grow and retain their competitive edge, while managing the challenges of a virtual workforce and a slowdown in the global markets, adopting ISACA's CMMI model with its eight distinct domains will enable them to add value to their contribution. ISACA has been working with over 1,450 leading organizations in India to support them with their CMMI adoption and with the new model, looks to expand this further in the year ahead."

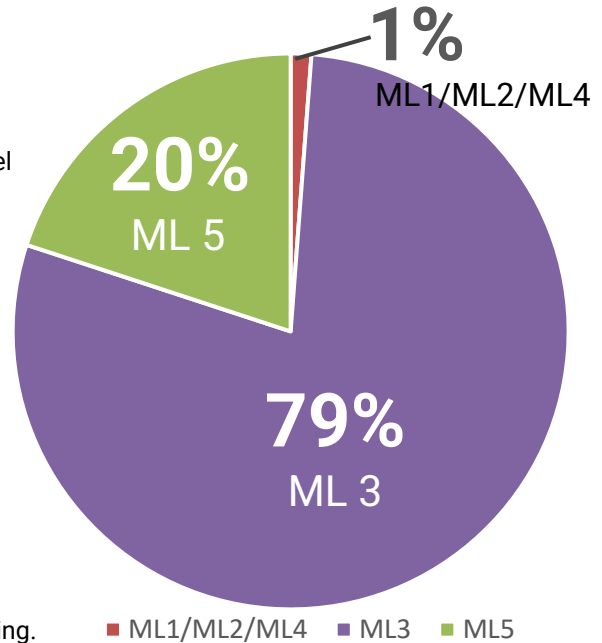
—RV Raghu, ISACA Ambassador and Director,
Versatelist Consulting India Pvt Ltd.

Maturity Focus

Appraisals by Maturity Level

Achieving a benchmark maturity level (ML) or a capability level (CL) demonstrates an organization's commitment to quality and continuous performance improvement. This recognition not only bolsters the organization's credibility in the eyes of its customers; it also reinforces its competitive advantage in the market. By demonstrating adherence to the CMMI best practices, organizations can differentiate themselves from competitors and foster trust among stakeholders, paving the way for continued success and growth.

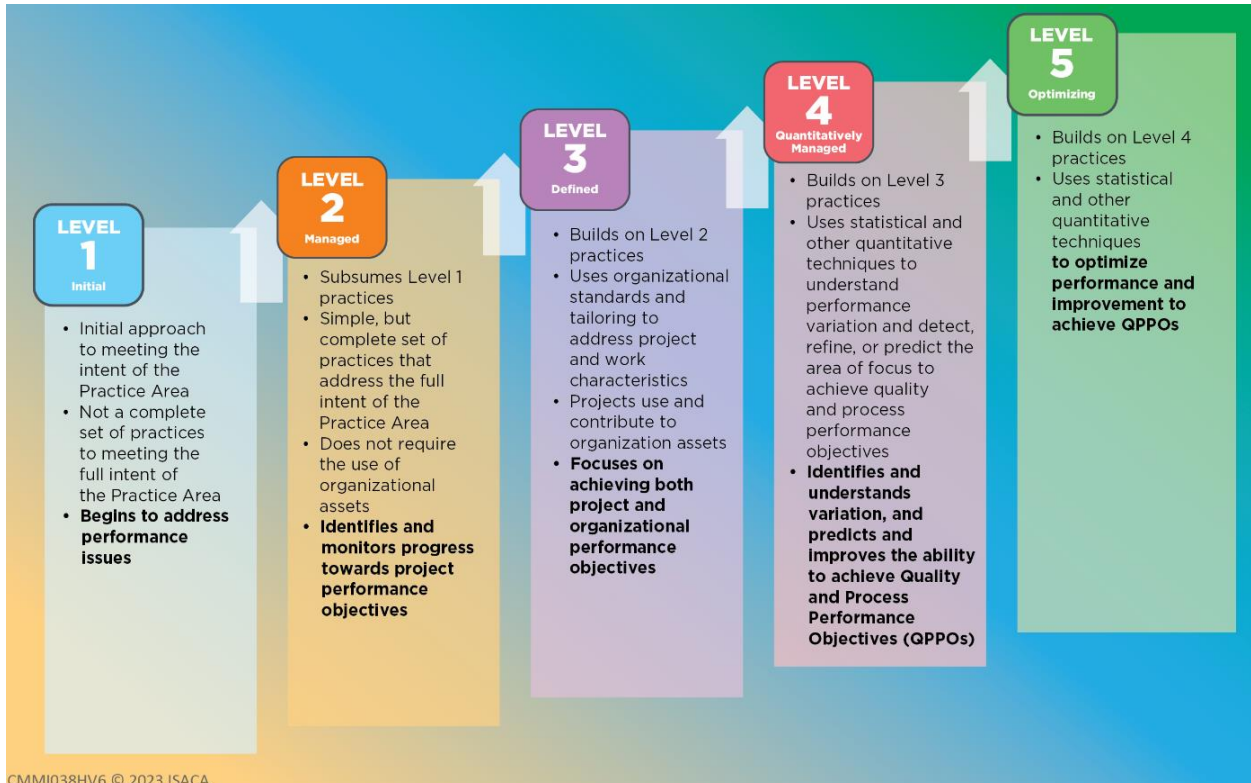
Of the five CMMI maturity levels (MLs) described below, appraisals for **Maturity Level 3** at 79% and **Maturity Level 5** at 20% continue to be the preferred choice for most organizations with the percentage of High Maturity appraisals increasing. Maturity Levels 1, 2, and 4 in total comprised about 1%.



“A mainstay in the performance improvement space for more than 30 years, CMMI practices have helped organizations worldwide elevate performance, improve quality, reduce inefficiencies, and better serve the needs of organizations and their customers.”

–Help Net Security; April 7, 2023

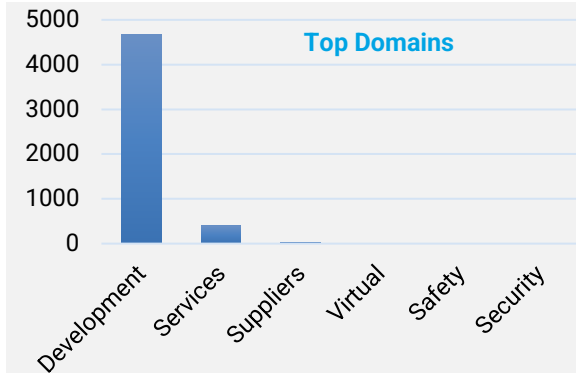
CMMI Levels



CMMI038HV6 © 2023 ISACA

Domain Synergy

Appraisals by Domain



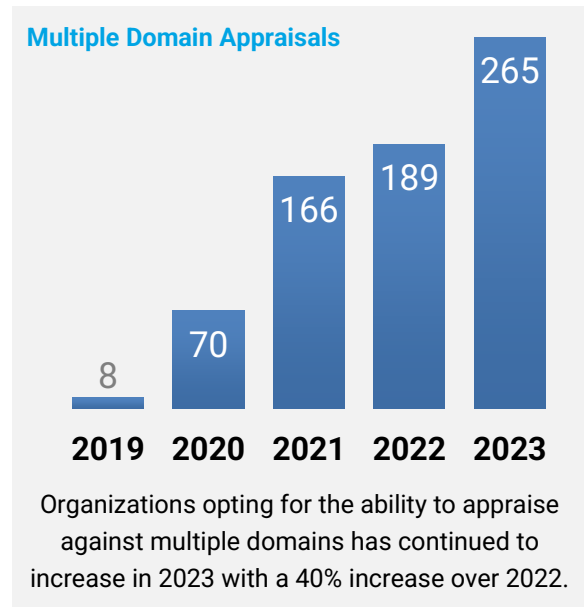
Development at 91% and **Services at 8%** continue to be the most popular **domain appraisal choices**, with a growing number of appraisals that include the new domains.

Suppliers, Virtual, Safety, and Security domains account for less than 1% and multiple domain appraisals overlap. Appraisals were conducted against all 6 domains available in 2023. V3.0 Appraisals, with 8 domains, began in April 2024.

Appraisals are a key resource for organizations seeking to build capability, optimize their processes, and embrace a culture of continuous performance improvement.

A CMMI Appraisal serves as a critical tool for organizations seeking to enhance their processes and align them with industry-recognized best practices. By conducting a comprehensive evaluation of an organization's existing processes, a CMMI Appraisal facilitates the identification of strengths and areas for improvement, enabling organizations to focus on the most crucial aspects of their operations. This thorough examination ensures that the processes in place are not only effective but also adhere to the highest standards of quality and efficiency as prescribed by the CMMI framework.

Conducted by our licensed CMMI Partners, these appraisals offer organizations a valuable opportunity to gain insight into their current processes and chart a course for performance improvement. By uncovering and prioritizing areas for enhancement, organizations can strategically allocate resources and efforts to drive the most significant business impact. This targeted approach allows for continuous growth and improvement, ultimately fostering a culture of excellence and innovation within the organization.

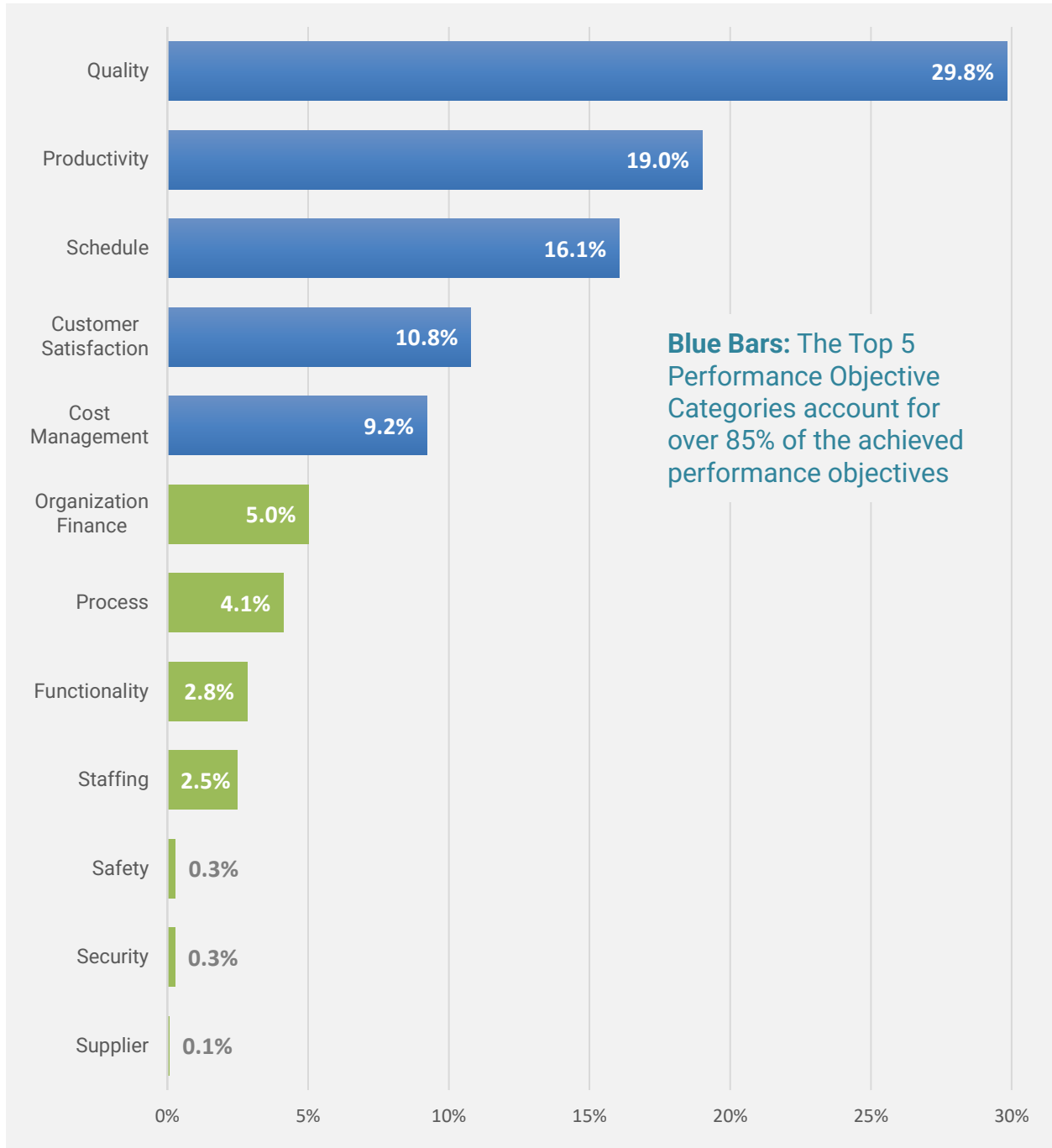


By identifying strengths and weaknesses, aligning with best practices, and prioritizing performance enhancements, organizations can unlock their full potential and achieve sustained success in today's competitive business landscape. CMMI V3.0 is keeping pace with the ever evolving and increasingly complex business environments. The continued growth in multiple domain appraisals is reflective of how most organizations are multi-dimensional in their capabilities.

Performance Objective Categories

Improvements: 85% in Top Five

While organizations that adopt CMMI consistently realize tangible performance improvements in multiple aspects and areas of their business, these five categories (blue bars) are consistently on top.



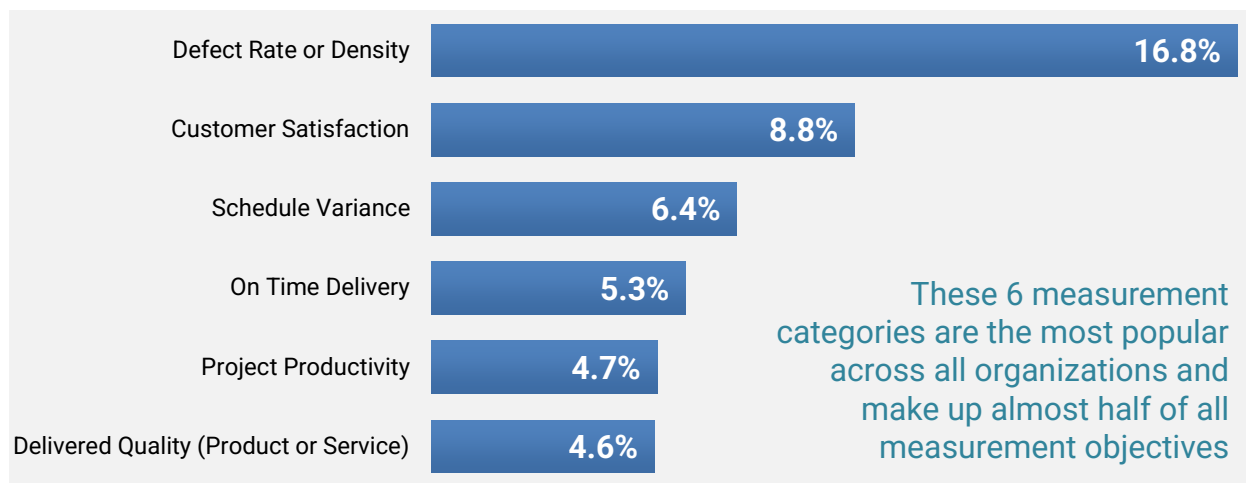
Reported Categories: What They Mean

Category	Description
Quality	Quality is concerned with making sure that the delivered solution, product, or service performs as the customer expects and errors or defects are kept to a minimum
Productivity	Productivity generally refers to how well and effectively an organization is using its resources to deliver its solutions, products, or services
Schedule	Managing the activities and milestones for developing and delivering solutions
Customer Satisfaction	Many of the other improvement categories are contributors to how customers perceive the organization's solutions, products, or services; this category is about directly measuring and improving that perception
Cost Management	Managing the cost of developing and delivering solutions, products, or services
Organization Finance	Revenue and profitability targets are consistently met
Process	People follow the agreed upon processes correctly
Functionality	Products, solutions, or services do what they are supposed to do The right thing, correctly built, operate correctly, and were delivered correctly
Staffing	Having the right human resources with the needed knowledge and skills, and the capacity to deliver the organization's solutions
Security	Prevention and control of threats and vulnerabilities
Supplier	Reduce enterprise risk and improve supply chain management capability
Safety	Prevention and control of harm

For details about these categories and their subcategories, refer to Appendix Terminology on page 27.

Organizational Priorities: Most Popular Categories

These top measurement categories indicate trends for common challenges or essential aspects of organizational performance across various industries.



CMMI's Consistency in Driving Performance

This chart demonstrates that the adoption of the CMMI ecosystem consistently yields significant improvements, regardless of the specific performance objectives that organizations opt to address.

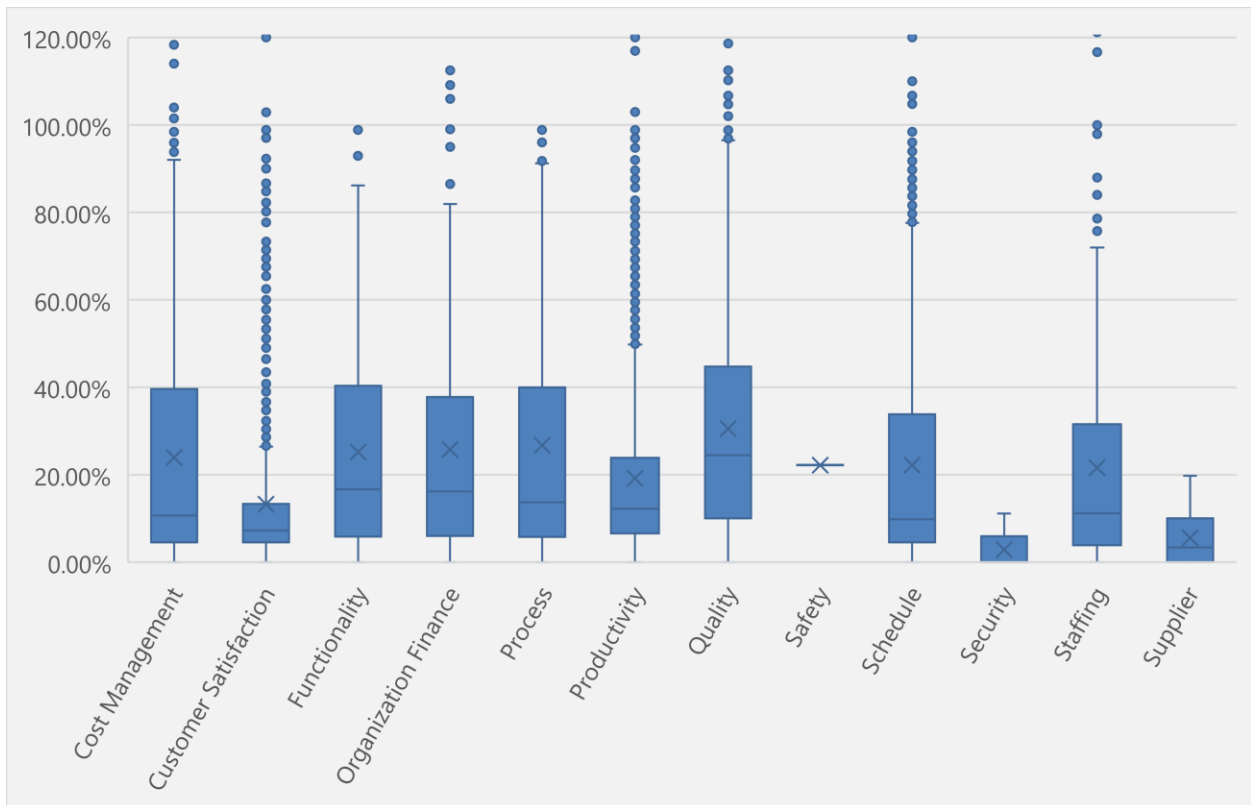
Comparing Category Improvements: Analysis* for this performance report has identified that when companies **target specific enhancements**—such as defect reductions, productivity increments, or leveraging CMMI to improve their processes; organizations experience **substantial advancements across the board**, with improvements of up to 42%.

Furthermore, these **interrelated enhancements exhibit synergy**, where improvements in one area often positively influence others. For instance, elevating quality standards can bolster customer satisfaction, while enhanced staffing can result in heightened productivity.

Key Takeaways:

- CMMI proves to be effective in driving significant growth for organizations, regardless of the specific performance objectives they choose to focus on.
- By targeting both specific enhancements and comprehensive improvements, organizations using CMMI can expect a wide range of advancements.

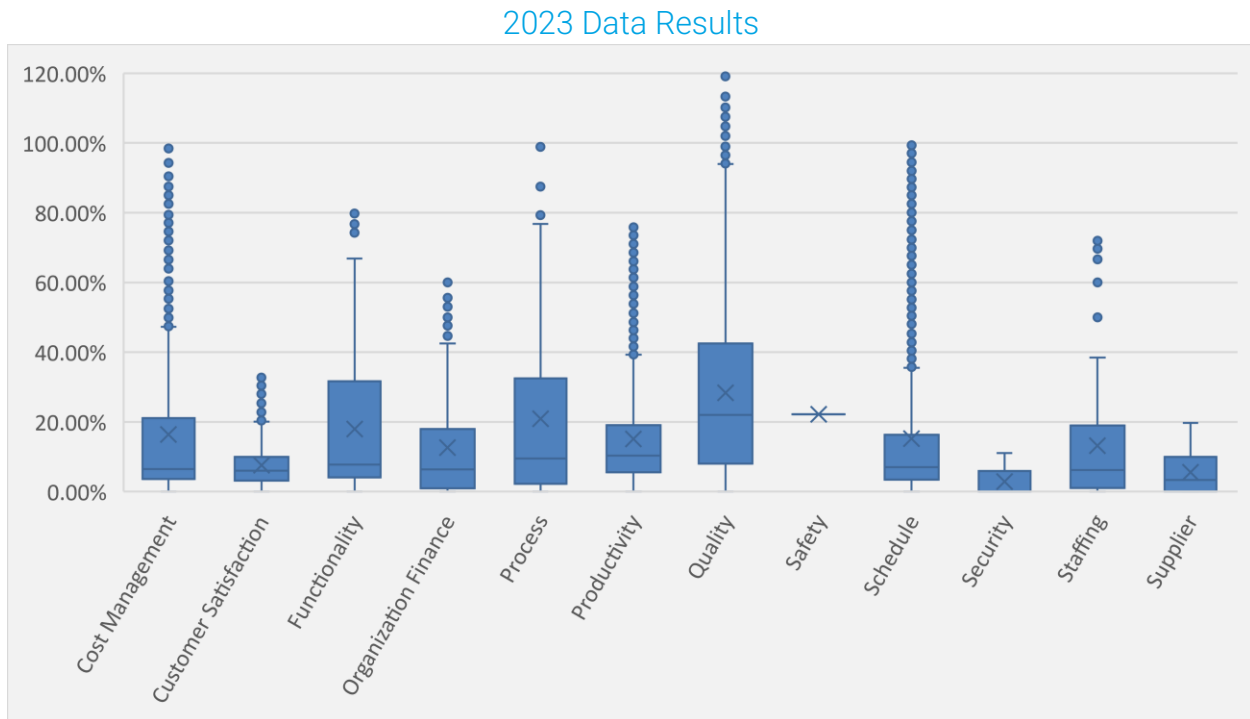
2019 to 2023 Cumulative Data Results



Comparing Timeframes: The chart on the previous page includes cumulative data spanning from 2019 to 2023, offering a comprehensive view of trends and patterns over a five-year period, while the chart below specifically focuses on data from the year 2023, providing a tighter analysis for just that year.

Key Takeaways:

- When analyzed alone, 2023 results show a much smaller variation and better consistency in performance results. This is a result of improvements and more consistent and accurate reported data from submitted Performance Reports.



“When reviewing the Performance Report with the Appraisal Sponsor, he noted that it was one of the most valuable outputs of the overall appraisal process because it helped validate his organization’s business objectives and alignment to them from the QPPOs, baselines, and models. He saw so much value in the Performance Report following the appraisal, that it’s become part of the company’s process assets and will be maintained on a quarterly basis as a reporting tool...”

Pascal Rabbath, *CMMI Lead Appraiser, Benchmarked Pty Ltd*

“As the organization grows, it gets more difficult to manage based on past experience and gut feeling. Data never lies—if I connect bonuses with data, it is more convincing; my people see that I am not making decisions based on imagination.”

Zhen Xia, *CEO, Hangzhou Pailie Technology Co.*

* During the data quality analysis of the 2023 Performance Report data, 1.14% of the reported Performance Report information was unusable due to incomplete, inaccurate, or inconsistent data, or lack of clear measurement definitions and objectives. The above information and all the analysis results in this report are based on the clean data, with this 1.14% excluded from the remaining analysis results.



Section Two

Performance Objective Details

While the previous section focused on objective **category** improvements, this section takes a deeper look at the **subcategories** of performance objectives where organizations had the most improvements.

This section highlights the performance objectives' **subcategories** where organizations have achieved the most significant improvements.

Context: The initial review of the large volume of data examined the top five **performance objective categories**. Subsequently, the following pages explore their leading **performance objective subcategories**. These subcategories represent areas in which organizations frequently measured and experienced notable enhancements after implementing or using CMMI. All calculations are from cumulative 2019 to 2023 data, unless otherwise specified.

Approach: In prior years, reports predominantly featured raw data figures with great attention to detail. However, responding to valuable feedback, the approach was refined to emphasize **percentages and averages** in more simplified charts, which tend to convey more profound insights and significance to discerning readers.

For more category and subcategory information, refer to the Appendix Terminology section, page [27](#).

Application: While reviewing the pages in this section, think about how these numbers might correlate to you or your client organization's top challenges. **Consider sharing related pages** from this report with influential decision makers to help them better understand the substantial prospects for improvement, as clearly identified and quantified in similar organizations.

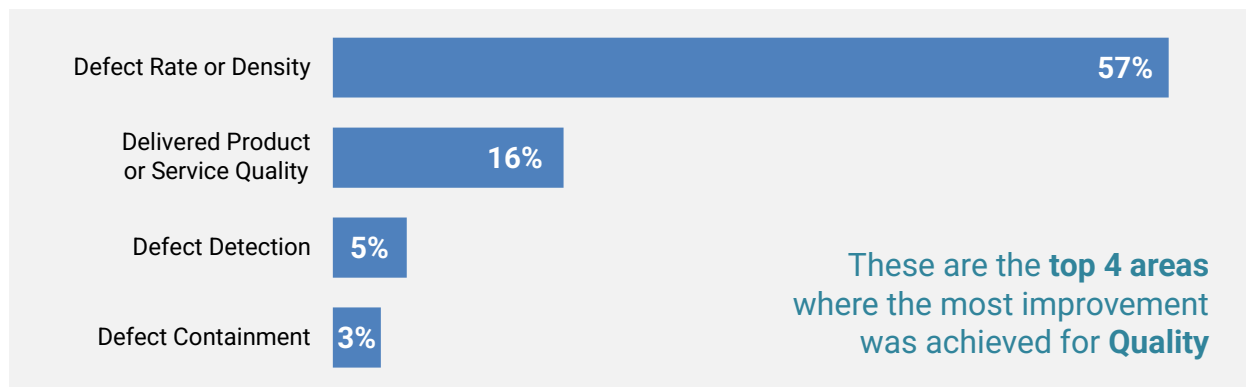
"Our ten-year journey with CMMI has served as a robust framework for evaluating and improving our processes. GE Aerospace's successful completion of our Maturity Level 5 appraisal reflects our commitment to structured problem solving, data driven decisioning and a culture of continuous improvement that fuels our Safety Quality Delivery Cost mission."

—Christin Rauche, Ph.D., Executive Director, Defense & Systems Engineering Science, GE Aerospace

Performance Category: Quality

Objectives

Quality-related objectives represent the biggest targeted area for performance improvement, with significant reductions in defect rate or density, delivered product or service quality, and defect containment. Not only did delivered product quality improve, but the ability to detect and prevent defects also improved consistently for those organizations that targeted this area.



Subcategory Improvements

Quality-related improvements include these highlights.

Defect Rate or Density

- Range: up to **47%**
- Median: **29%**
- Mean: **33%**

Delivered Product or Service Quality

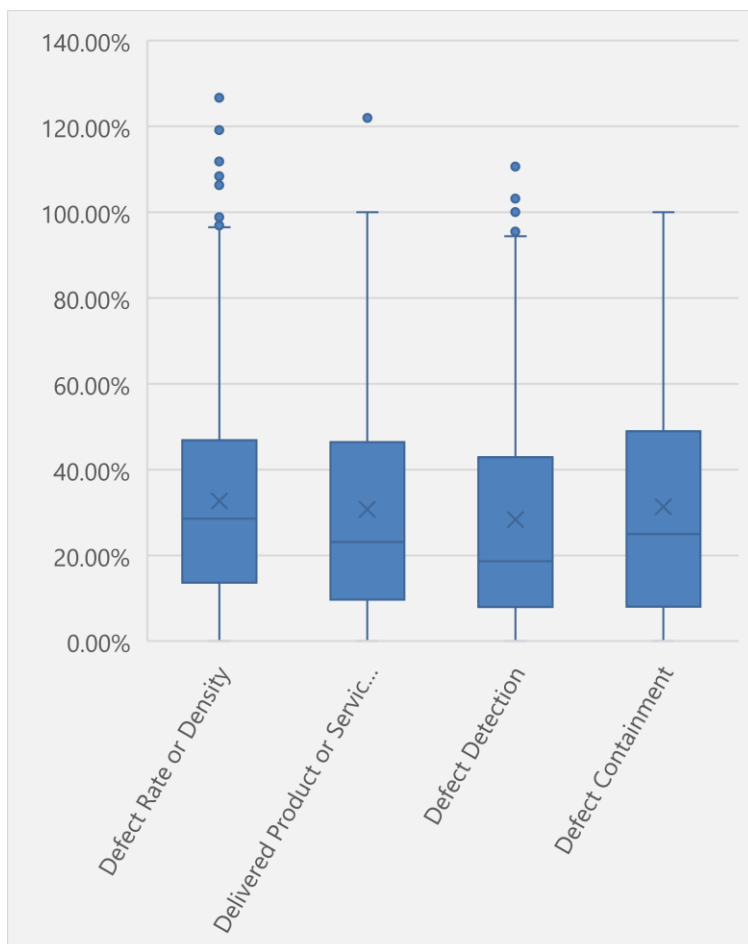
- Range: up to **46%**
- Median: **23%**
- Mean: **31%**

Defect Detection

- Range: up to **43%**
- Median: **19%**
- Mean: **28%**

Defect Containment

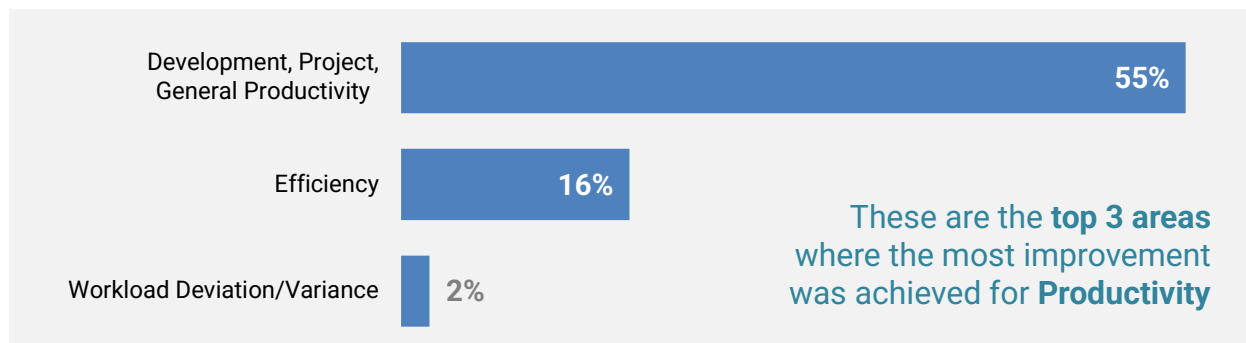
- Range: up to **49%**
- Median: **25%**
- Mean: **31%**



Performance Category: Productivity

Objectives

These **Productivity** objectives are directly related to streamlining critical development process performance and process automation, e.g., automated testing and development processes, DevSecOps.



Subcategory Improvements

Productivity-related improvements include these highlights.

Workload Deviation/Variance

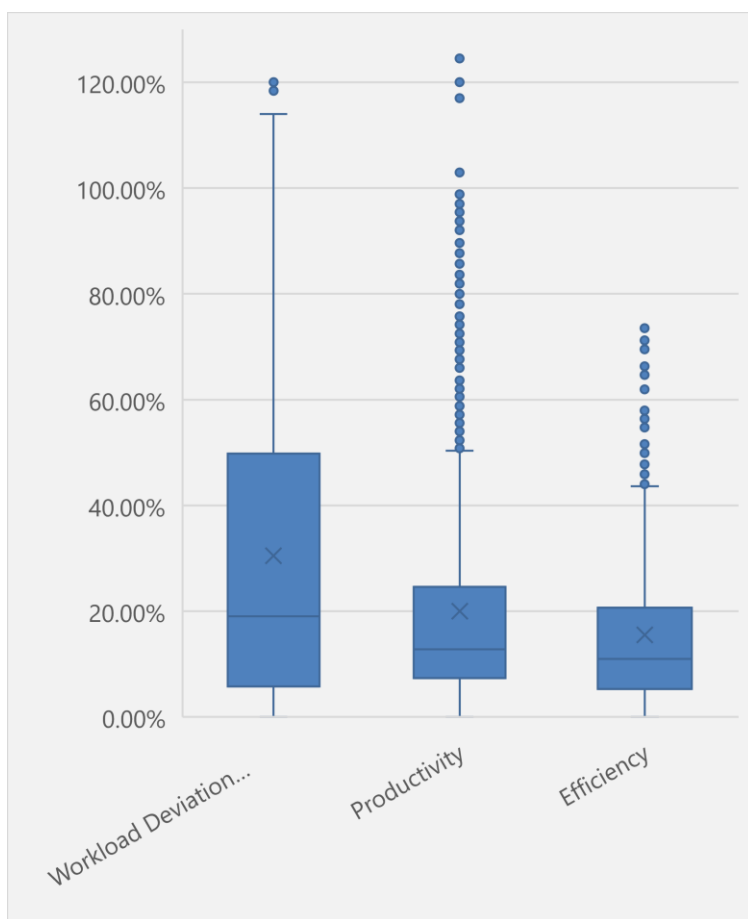
- Reduction range: up to **50%**
- Median: **19%**
- Mean: **30%**

Productivity: Development, Project, General Productivity

- Range: up to **25%**
- Median: **13%**
- Mean: **20%**

Efficiency

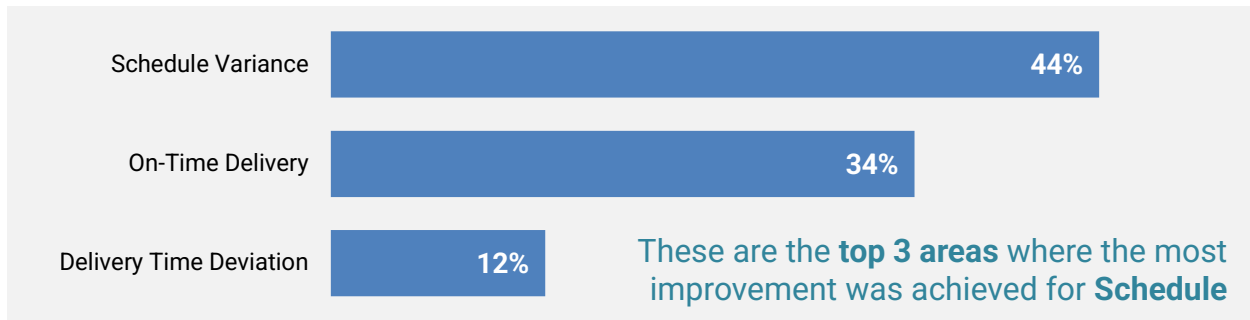
- Range: up to **21%**
- Median: **11%**
- Mean: **16%**



Performance Category: Schedule

Objectives

Results from appraised organizations show an average achievement of 78% of **Schedule** performance objectives (combining schedule variance and on time delivery)—an impressive accomplishment that any organization would be proud of.



Subcategory Improvements

Schedule-related improvements include these highlights.

On-Time Delivery

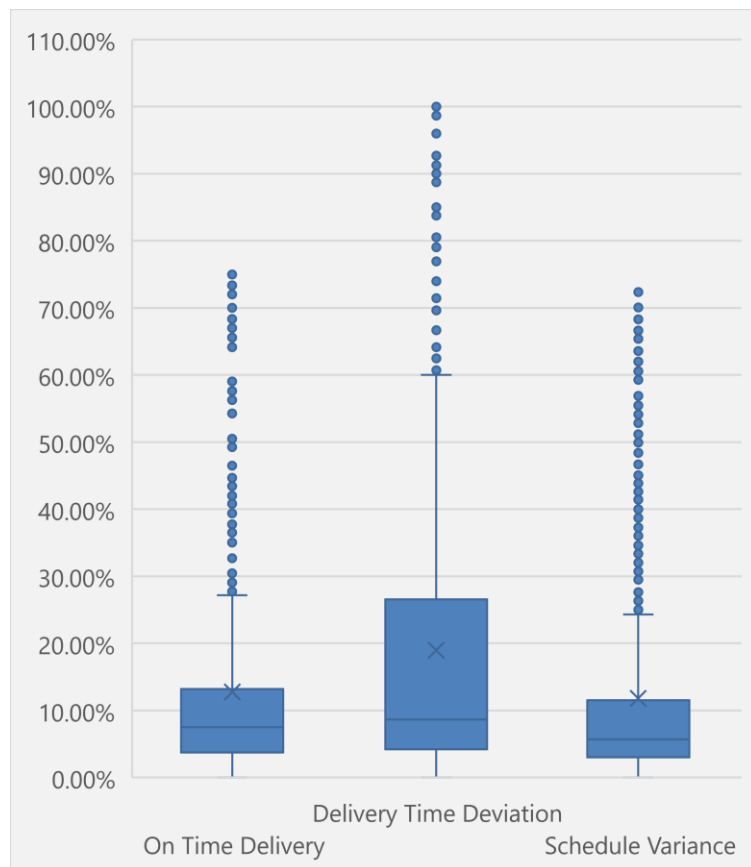
- Reductions range: up to **13%**
- Median: **8%**
- Mean: **12.8%**

Delivery Time Deviation

- Reductions range: up to **27%**
- Median: **9%**
- Mean: **19%**

Schedule Variance

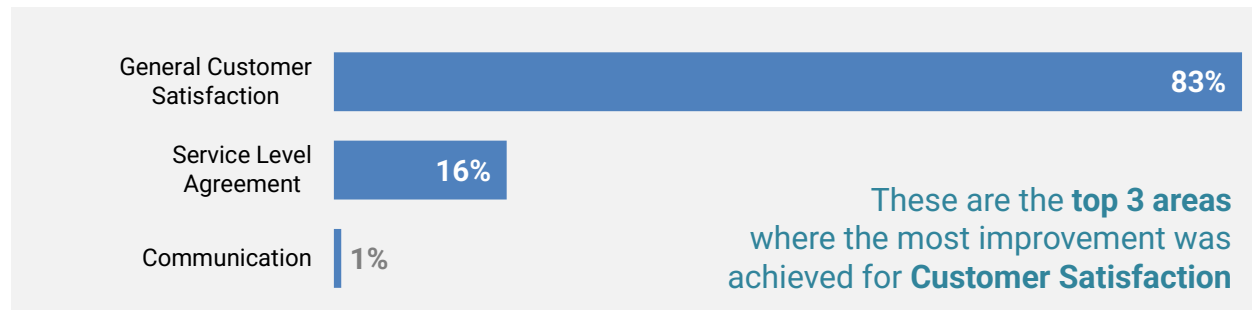
- Targets range: up to **11.5%**
- Median: **6%**
- Mean: **12%**



Performance Category: Customer Satisfaction

Objectives

Customer Satisfaction is an essential metric for assessing the overall success of a project or product. Impact Areas include brand reputation, customer retention, market share, and overall business success. Common methods for improving may involve enhancing product or service quality, improving customer support, addressing customer feedback, and delivering on-time.



Subcategory Improvements

Customer Satisfaction-related improvements include these highlights.

General Customer Satisfaction

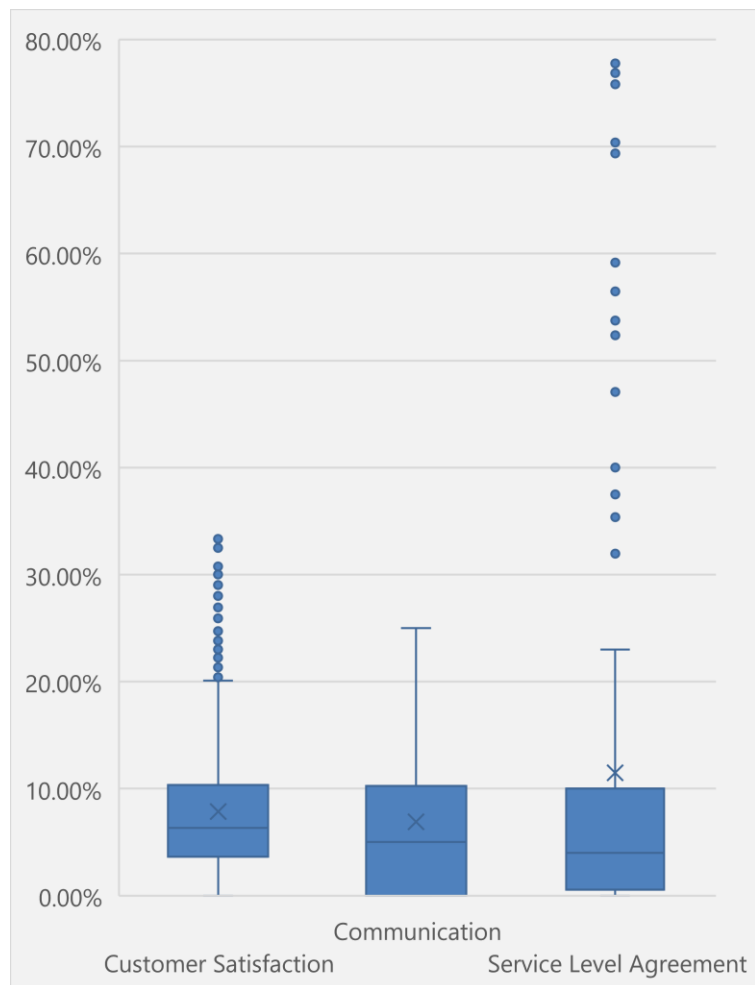
- Range: up to 10%
- Median: 6%
- Mean: 8%

Communication

- Range: up to **10%**
- Median: **5%**
- Mean: **7%**

Service Level Agreement

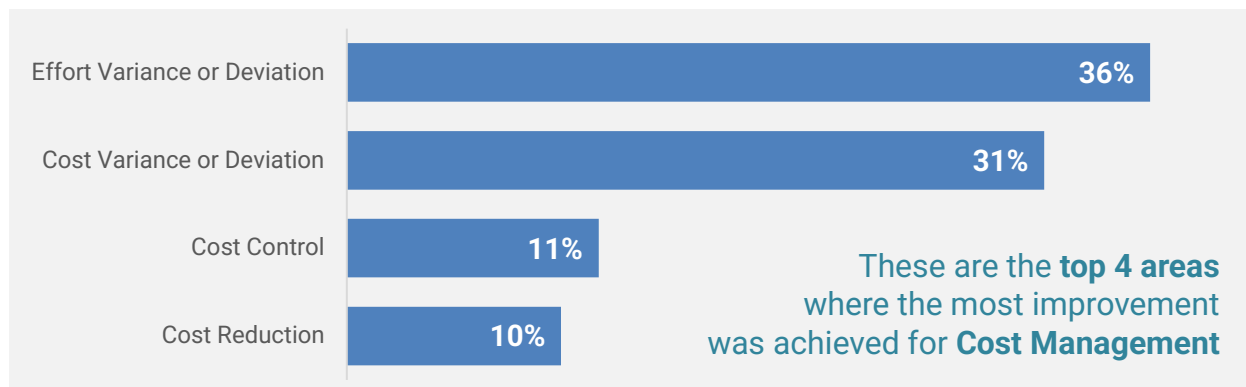
- Range: up to **10%**
- Median: **4%**
- Mean: **11%**



Performance Category: Cost Management

Objectives

Regarding **Cost Management**, 67% of objectives included **effort variance/deviation** and **cost variance deviation**. The objectives include various types of cost management performance improvements, including reduced cost and effort variance, efficiency, and reduction. High predictability and consistency of cost management results make CMMI a no-brainer for any organization.



Subcategory Improvements

Cost Management-related improvements include these highlights.

Cost Variance or Deviation

- Reductions range: up to **16%**
- Median: **5%**
- Mean: **15%**

Cost Control

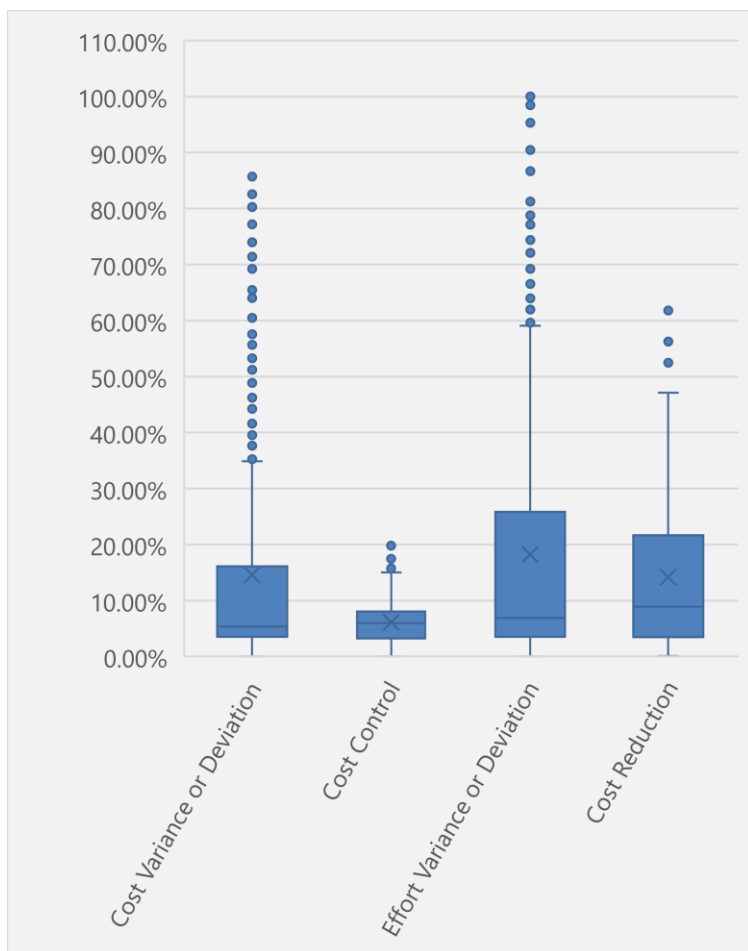
- Targets range: up to **8%**
- Median: **6%**
- Mean: **6%**

Effort Variance or Deviation

- Reductions range: up to **26%**
- Median: **7%**
- Mean: **18%**

Cost Reduction

- Targets range: up to **22%**
- Median: **9%**
- Mean: **14%**





Section Three

Appraisal Demographics

For more than 30 years, thousands of high-performing organizations have achieved sustainable business success through CMMI adoption and demonstrated their ability as capable business partners and suppliers.

Demographics

Appraisal Data Sources

The CMMI framework for process improvement has gained momentum across a wide array of industries and international demographics, establishing itself as a leading authority in driving organizational excellence. With about 14,000 organizations spanning aerospace, defense, healthcare, IT, and finance sectors, CMMI serves as a pivotal tool for enhancing performance, mitigating risks, and delivering consistent, high-quality results.

This section highlights the demographics of those who adopt CMMI, shedding light on the various sectors, regions, and entities that have successfully embraced this influential framework to drive sustainable growth and achieve their strategic objectives.

By exploring metrics that reflect the success stories and unique applications of CMMI among diverse organizations, this showcases its adaptability and value in addressing complex challenges in today's dynamic business landscape.

"Maintaining CMMI High Maturity ratings identifies us as a market leader that can rapidly deliver high-quality solutions to meet our clients' missions. These distinctions position us to shape the digital future for our clients while creating extraordinary value."

—Susan Penfield, *CTO, Booz Allen*

"At Valiant, obtaining a CMMI-SVC and DEV Level 3 appraisal is more than a badge of honor; it is a testament to our unwavering dedication to delivering unparalleled services and solutions to our valued clients. It reflects our relentless pursuit of process improvement, quality assurance and excellence in all endeavors. With CMMI as our guide, we remain steadfast in our commitment to driving innovation, achieving operational excellence and ensuring the highest level of quality in every aspect of our operations."

—Meredith Gander, *Proposal & Quality Manager, Valiant Solutions LLC*

Enterprise Size

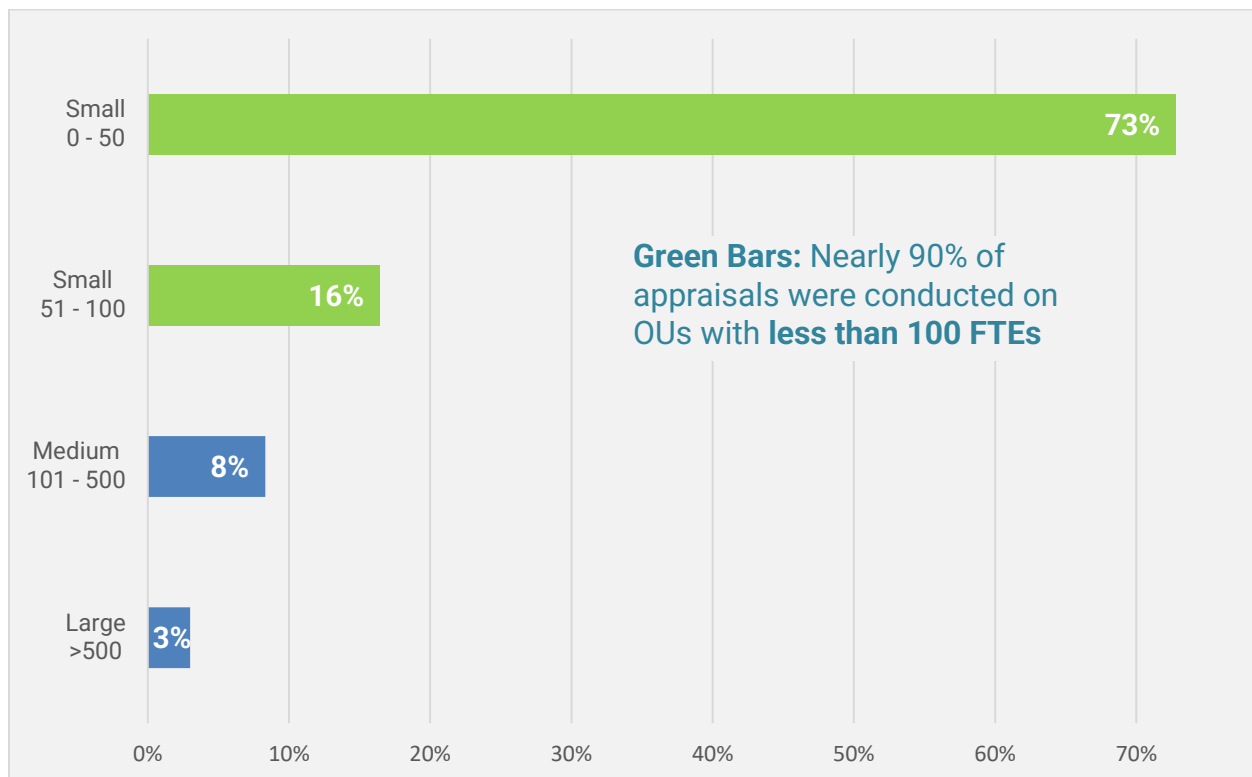
Adopting Organizations: Small, Medium, and Large Businesses

Nearly 90% of appraisals were conducted on Organizational Units (OUs) with less than 100 Full-Time Employees (FTEs).

A frequent misconception about CMMI is that it can only be seriously adopted by large organizations. However, as the graph shows, the vast majority of organizations conducting appraisals can be described as **Small or Medium sized Enterprises***. In fact, 96% of the organizations appraised had OUs smaller than 250 employees, and 98% of the appraised organizations had OUs with less than 500 employees.

Key Takeaway

- CMMI is flexible, useful, and suitable for small, medium, and large enterprises
- CMMI usage is relevant to organizations of all sizes and is especially popular with smaller OUs



* Small or Medium sized Enterprises Notes: UK Definition is < 250 Employees; USA Definition is < 500 Employees

Demographics

The Global Impact of CMMI?

Adoption Spectrum: CMMI Performance Solutions is a globally recognized model for process improvement. CMMI is adopted by a diverse range of entities, including corporations, organizations, and governments. Spanning multiple languages and facilitated by numerous partners, CMMI continues to shape the landscape of performance excellence worldwide. **The global impact of CMMI since the release of CMMI Performance Solutions in 2019 is listed below.**



Corporate Users: Prominent, nationally recognized companies are increasingly leveraging CMMI to drive process improvement and elevate performance standards. By embracing CMMI, these industry leaders set an example in pursuing excellence and fostering a culture of continuous growth and innovation.



Section Four

Appendix

The concepts of CMMI are rooted in proven industry best practices gathered over the last 30+ years. These practices are organized into a flexible, open, and integrated architecture that enables broad geographical and industry application and adoption with consistent performance results.

Locations: Country/Region Breakdown



Afghanistan	Cameroon	El Salvador	Ireland	Mauritius	Portugal	Trinidad and Tobago
Andorra	Canada	Estonia	Israel	Mexico	Puerto Rico	Tunisia
Angola	Ceuta & Melilla	Finland	Italy	Moldavia	Qatar	Türkiye
Argentina	Chile	Fiji	Japan	Mongolia	Romania	U.S. Outlying Islands
Australia	China	France	Jordan	Morocco	Russia	Uganda
Austria	Christmas Island	Gabon	Kazakhstan	Myanmar	Saudi Arabia	Ukraine
Azerbaijan	Colombia	Georgia	Kenya	Nepal	Singapore	United Arab Emirates
Bahrain	Comoros	Germany	Kosovo	Netherlands	Slovakia	United Kingdom
Bangladesh	Costa Rica	Greece	Kuwait	New Zealand	Slovenia	United States
Belarus	Côte d'Ivoire	Guatemala	Latvia	Nigeria	South Africa	Uruguay
Belgium	Croatia	Guyana	Lebanon	Norway	South Korea	Uzbekistan
Belize	Cyprus	Honduras	Libya	Oman	Spain	Vanuatu
Bolivia	Czechia	Hong Kong SAR China	Lithuania	Pakistan	Sri Lanka	Vietnam
Brazil	Denmark	Hungary	Luxembourg	Panama	Suriname	
Brunei	Dominican Republic	Iceland	Macau SAR China	Paraguay	Sweden	
Bulgaria	Ecuador	India	Malaysia	Peru	Switzerland	
Burkina Faso	Egypt	Indonesia	Malta	Philippines	Taiwan	
Cambodia			Marshall Islands	Poland	Thailand	

Purpose

Assess, Capture, and Corroborate: CMMI Capability and Performance Results

As an integral component of CMMI, the **Performance Report** is completed by each appraisal team during the appraisal based on the **organization objectives** and measurement data—and is corroborated with the organization being appraised.

This report is NOT just an appraisal artifact; **it is a tool** for performance planning, data collection, and cross-checking performance improvement—all to verify business performance improvement before, during, and after the appraisal.

- While it cannot be used alone to determine a maturity or capability level rating, the Performance Report is used to **verify if the appraisal findings** and performance improvement results are consistent with the Performance Report
- The Performance Report provides a mechanism to **assess tangible and measurable improvement** along with meeting model Practice Area intent and value statements
- Enables the **“self-raising bar”** in the model and appraisal method for performance and High Maturity; appraisal teams must see and corroborate the performance improvements; this also becomes critical to understand previous performance improvement when doing re-appraisals
- Helps to **identify critical performance weaknesses** and improvement opportunity “anchor points” and makes performance improvement clear, transparent, intentional, and consistent
- For organizations **pursuing High Maturity** or who have already attained High Maturity, populating the Performance Report is the “Easy” button

The CMMI Performance Report:

- ❖ The Key to Unlocking Continuous Improvement and High Maturity
- ❖ The Path to Identifying and Addressing Critical Performance Weaknesses for Optimal Growth
- ❖ A Critical Tool to High Maturity and Consistent, Continuous Improvement
- ❖ An Essential for all High Maturity Pursuits



Performance Perspective

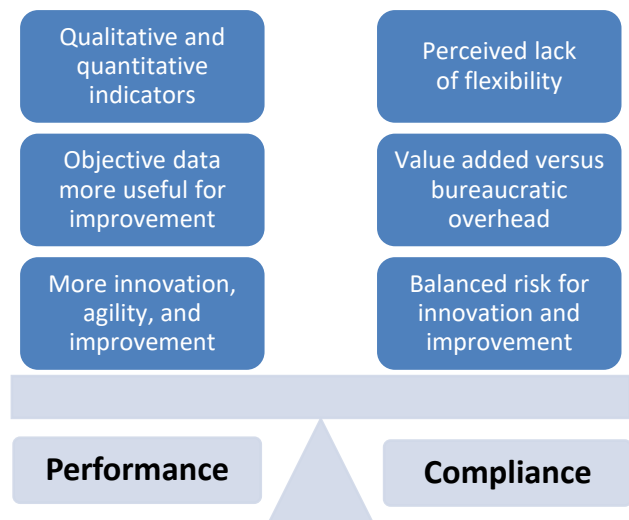
Compliance vs. Continual Performance Improvement

CMMI adoption has successfully shifted the framework and product ecosystem from a process compliance model to a **business performance improvement model**. A compliance-only focus typically assumes that quality of performance is a guaranteed outcome, which is typically NOT true.

Performance practices and expected outcomes emphasize and focus on improving organizational performance to recognize a more visible return on investment (ROI). This reflects the modern business climate where performance is key to the success of every organization—no matter their maturity level. With performance built in at every level, organizations can plan a more methodical and step-by-step path to achieve better performance and **High Maturity**.

Governance by senior management is critical for consistent improvement and innovation; and it must be clearly directed and purposeful. While there should always be a balance between performance improvement and compliance, **performance should drive compliance**.

Balanced Approach with a Performance Focus



“In a tightening economic market, addressing enterprise performance can help organizations better weather challenges by reducing costs, creating efficiencies, and coming in on schedule while improving overall quality. ISACA’s Capability Maturity Model Integration, or CMMI, has been doing just that for enterprises for more than three decades...”

—Express Computer; April 12, 2023

“CMMI V3.0 has expanded its focus by including Practice Areas that are touching many of our companies today. It was very encouraging to see the addition of Safety, Security, Data and Workforce considerations. This inclusion complements an already robust set of Practice Areas by incorporating key areas of interest that have a direct impact on our infrastructure.”

—Paul Dias, Vice President of Quality Assurance & Regulatory Affairs, Zoll Medical Corporation

Terminology

Category and Subcategory Descriptions

This table is an **overview of subcategories** and their corresponding descriptions, **grouped by category**. This organized layout offers a concise understanding of the relationships and distinctions among these elements, enabling quick reference for the statistical charts and diagrams in this report. Descriptions below are paraphrased from the Performance Report template.

Category & Subcategory	Description
Cost Management	Managing the cost of developing and delivering solutions, products, or services
• Cost Control	Actual costs compared to estimated or budgeted costs
• Cost Management	General cost related measure or objective
• Cost Performance	Amount of completed work for every unit of cost spent
• Cost Reduction	Degree to which actual costs are reduced
• Cost Variance or Deviation	Difference in planned and actual costs as a percentage of planned costs
• Effort Variance or Deviation	Deviation between a planned and actual effort for various phases within the project
• Estimation	Estimated costs of activities
Customer Satisfaction	Customer's perception of value
• Communication	Exchanging information between the organization and its customers, stakeholders, and/or employees
• Customer Satisfaction	General customer satisfaction measure or objective
• Service Level Agreement	Level of service expected between a customer and a supplier
Functionality	Operational intent of products, solutions, or services
• Baselined Requirements Change Rate	Frequency requirements change from their baselined state
• Database Availability	Amount of time a database remains up and running
• Functionality	General functionality related measure or objective
• Interface or Integration Complexity	Complexity of an interface or integration
• Mean Time Between Failures	Mean Time Between Failures
• New Requirements Change Rate	Frequency new requirements change
• Requirements	Requirements development
Organization Finance	Revenue and profitability targets
• Budget Related	Budgeting activities in an organization
• Business Growth	Increasing or expanding the organization's market share
• Compensation	Total amount of compensation for an organization's workforce
• Cost of Vacancy	Revenue lost due to unfilled positions
• EBITDA	Earnings before interest, taxes, depreciation, and amortization

Category & Subcategory	Description
• Finance	General finance related measure or objective
• Financial Margins	Ratio to gauge when an organization makes money
• Income Growth	Percent of increase of net income
• On Time Payment or Invoicing	Proportion of payments or invoices that are sent or received on time
• Organization Finance	General organization finance related measure or objective
• Profit Growth	Growth in profit of an organization for a specified time period
• Proposal	Procurement and/or procurement process of a work contract
• Revenue Increase	Amount of money made by the organization over time compared to a previous, identical amount of time
• Revenue per Employee	Amount of revenue generated by each employee for the organization
• Sales Growth	Organization's ability to increase revenue through sales over a specific time period
• Total Cost of Workforce	Total amount spent on the organization's workforce.
• Turnover	Amount of income or gross revenue as defined by the total amount of sales over a set period
Process	An indication of activities based on standard procedures
• Configuration and Change Management	Maintaining the integrity of hardware, software, firmware, and documentation related to the configuration and change management process
• Contract Compliance	Monitoring and controlling the procedures and norms outlined by a contract with another organization
• Data Management	General data management related measure or objective
• First Time Right	Procedure is performed in the right manner the first time and every time
• Problem Resolution Duration	Elapsed time between problem discovery and resolution
• Process	General process related measure or objective
• Process Adoption and/or Compliance	Related to the adoption and compliance of an organization to its defined processes
• Process Cycle Time	Improving the speed of the organizational processes
• Process Improvement	Effort to improve products, services, or processes
• Process Quality Assurance	Objective evaluation of the performance of processes and work products against process descriptions, standards, and procedures
• Risk Management	Identification and management of risks and opportunities
Productivity	An evaluation of resource effectiveness for delivering solutions, products, or services
• Code Reuse Rate	Rate existing code is reused for new development
• Defect Removal Efficiency	Proportion of defects found internally versus the defects found externally
• Delivery Efficiency	Proportion of planned work completed
• Development Efficiency	Amount of software developed or requirements divided by the resources used
• Development Productivity	Ability of a team to efficiently write software during a specific time

Category & Subcategory	Description
• Productivity	General productivity related measure or objective
• Productivity Safety	General safety related activities related to productivity
• Project Productivity	Amount of work completed per unit of time
• Project or Production Efficiency	Amount of work completed per time measured
• Resource Utilization	Proportion of total time or effort that a resource is gainfully engaged
• Reuse Ratio	Proportion of code reused for a project
• Rework	Proportion of total time or effort rework consumes
• Service/System Availability	Time the service or system is available for use
• Services	Work provided by an organization or supplier
• Sprint Efficiency	Amount of work completed per sprint
• Test Automation	Amount of testing automated
• Test Efficiency	Efficiency of the testing processes
• Testing Productivity	Ability of a team to efficiently perform testing activities in a specific time
• Velocity	Amount of product or work product produced per unit effort or time
• Virtual/Hybrid Workforce Productivity	Percentage of productivity for virtual or hybrid workforce
• Virtual Work	General virtual work related measure or objective
• Work Efficiency	Production accomplished with minimal resources wasted
• Workload Deviation/Variance	Amount of variation of the work
• Workload Reduction	Amount a workload is reduced
Quality	Delivered solution, product or service performs as required per defect parameters
• Data Completeness	Number of accounts with missing or incomplete data
• Data Consistency	Uniformity of data within a specific database
• Data Quality	General data quality related measure or objective
• Data Timeliness	Age of data in a database
• Data Uniqueness/Data Duplication Rates	Rate or number of duplicate and/or unique records within a source system
• Data Validity	How well data conforms to specific standards
• Defect Closure	Rate defects are resolved
• Defect Containment	Rate defects are found and fixed before a product is released
• Defect Detection	Rate defects are discovered
• Defect Injection Rate	Rate defects are introduced into a product
• Defect Rate or Density	Proportion of defects in a product
• Defect Resolution Ratio	Rate resolved defects are reopened
• Delivered Product or Service Quality	Excellence of a delivered product or service
• Peer Review Efficiency	Number of review defects in documentation compared to the number of testing defects

Category & Subcategory	Description
• Peer Reviews	Review of a project's artifacts including documentation, requirements, code, design, test cases, etc.
• Quality	General quality related measure or objective
• Review Effectiveness	Fraction of defects are discovered by reviews
• Test Coverage	Amount of testing covering requirements, use cases, platforms, code, etc.
• Test Pass Rate	Percent of passing test cases
• Testing Activities	General test related activities
• Testing Effectiveness	How effectively testing is completed so that it meets the requirements
Safety	Prevention and control of harm
• Average Overtime Hours	Average rate of overtime hours per person
• Equipment breakdown	Number of equipment breakdowns
• Fatalities	Number of fatalities due to work related incidents
• Lost Time Injury Incidence Rate	Lost time per standard period per incident
• Safety	General safety related measure or objective
• Safety Incidents/Events	Number of safety related incidents or events
• Safety Injuries	Number of injuries due to work related incidents
• Safety Penalties Paid	Number of fines or penalties paid by the organization
• Safety Violations	Number of safety violations
• Total Recordable Incident Rate	Total number of incidents, injuries, or illnesses that occur in an organization over a given period
Schedule	Managing the activities and milestones for developing and delivering solutions
• Delivery Time Deviation	Difference between the stated delivery time and the actual delivery time
• Duration Deviation	Difference between the baseline duration of a task and the total duration of a task
• On Time Delivery	Proportion of target dates (e.g., milestones or delivery dates) that are achieved
• Planning	Project planning activities
• Project Delay Rate	Number of days delayed (difference between target and actual)
• Project Progress Variance or Deviation	Amount the project deviates from planned performance
• Schedule	General schedule related measure or objective
• Schedule Performance Index	Earned value or planned value
• Schedule Variance	Actual progress against expected progress
• Story Points/Sizing	Schedule indicators related to story points or task sizing in agile projects
Security	Systematic identification, assessment, control, and resolution of security needs, threats, and vulnerabilities
• Admin Accounts Over Time	Number of administrator accounts over time
• Cybersecurity	Cybersecurity policy related measures or objectives

Category & Subcategory	Description
• Devices Running Unauthorized Software	Percentage of devices running unsanctioned software
• Incidents	Occurrence of security related events
• Mean Time to Recovery	Average time it takes to recover from a product or system failure
• Monitored Privileged Account Access	Number of monitored privileged account access
• Recovery Point Objective	Time based measurement of the maximum amount of data loss that is tolerable to an organization
• Recovery Time Objective	The duration of time and a service level within which a business process must be restored after a disaster in order to avoid unacceptable consequences associated with a break in continuity
• Security	General security related measure or objective
• Security Effectiveness	Effectiveness of a security management plan
• Security Framework	Adherence to security framework controls
• Security Incident Costs	Cost of security incidents
• Security Patch Management	Time frame when the patch is available until it is deployed in production
• Security Solution Coverage	How comprehensive a system or assist addresses a security need
• Security Training Coverage	Percent of personnel training that is current
• Security Training Effectiveness	Effectiveness of security training
• Security Vulnerabilities	Time frame from when a security vulnerability was identified and resolved
• Security Vulnerability Closure Rate	Security vulnerability measures or objectives
Staffing	Having the right human resources with the needed knowledge and skills, and the capacity to deliver the organization's solutions
• Applications Per Role	Number of applications received per recruited role
• Employee Attendance Rate	Attendance rate of employees
• Employee Diversity, Equity, and Inclusion	Tracking of diversity, equity, and inclusion (DEI) efforts of the organization based on DEI goals, initiatives, or targets
• Employee Retention	Ability of the organization to reduce employee turnover
• Employee Satisfaction	Satisfaction, attitude, and overall outlook of an organization's employees
• Employee Skill Development	Improving and developing employee competencies to support business growth
• Employee Turnover	Rate of employees who leave in specific time frame
• Headcount	Total number of employees
• New Hire Turnover Rate	Rate of employees who leave a company within their first year on the job
• Onboarding Time	Time from when a new hire request until they are in the role
• Organizational Development	Improving the organizations performance and or culture
• Performance Turnover in Key Position	Turnover rate in key positions at the organization
• Seniority and Length of Service	Time spent in a particular position

Category & Subcategory	Description
• Staffing	General staffing related measure or objective
• Time to Proficiency	Time for newly hired employees to reach performance expectations
• Virtual/Hybrid Workforce	Percentage of the workforce that works virtual or hybrid work
• Workforce Opportunity Costs	Amount of work loss due to lack of skilled resources or their availability
Supplier	Supply chain management capability
• Supplier Defect Closure	Rate defects are resolved
• Supplier Defect Containment	Rate defects are found and fixed before a product is released
• Supplier Defect Detection	Rate defects are discovered
• Supplier Defect Injection Rate	Rate defects are introduced into a product
• Supplier Defect Rate or Density	Proportion of defects in a product
• Supplier Defect Resolution Ratio	Rate resolved defects are reopened
• Supplier Delivered Product/Service Quality	Excellence of a delivered product or service
• Supplier Peer Review Efficiency	Number of review defects in documentation compared to the number of testing defects
• Supplier Peer Reviews	Review of a project's artifacts including documentation, requirements, code, design, test cases, etc.
• Supplier Review Effectiveness	Fraction of defects are discovered by reviews
• Supplier Quality	Supplier's ability to deliver goods or services that satisfy customers' needs
• Supplier Test Coverage	Amount of testing covering requirements, use cases, platforms, code, etc.
• Supplier Test Pass Rate	Percent of passing test cases
• Supplier Testing Activities	General test related activities
• Supplier Testing Effectiveness	How effectively testing is completed so that it meets the requirements

[Learn More](#)

Unleash Potential: CMMI Performance Solutions

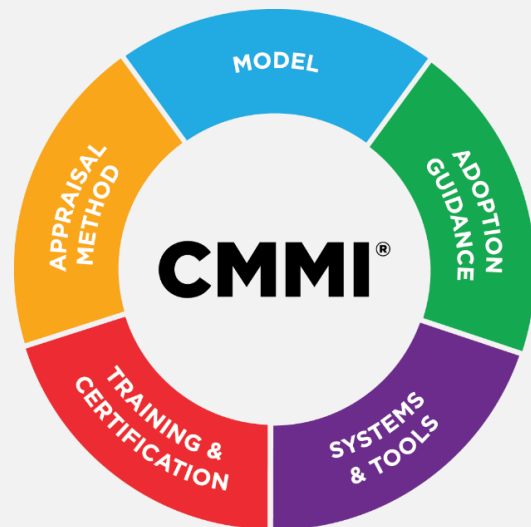
CMMI Performance Solutions helps organizations quickly understand their current level of capability and performance in the context of their own business objectives and compared to similar organizations.

CMMI's performance improvement model has helped thousands of globally recognized companies—including many Fortune 500 organizations. CMMI Performance Solutions has been designed as an integrated product suite to address all the components of the CMMI ecosystem.

Integrated Product Suite

The CMMI Performance Solutions Ecosystem provides an integrated product suite consisting of five components, that when used together provide a clear and proven path to achieving your business objectives.

- **Training and Certification:** Training has modular components with virtual and in-person models. Provides performance-focused content and exercises. More learner-focused and learning objective oriented.
- **Appraisal Method:** The appraisal method helps to increase reliability while reducing overall cost and disruption to the organization appraised. Standard Performance Report template integrated into the appraisal method.
- **Model:** Clear pathway to performance improvement. Simplified for accelerated adoption. Built-in value statements for Practice Areas and practices to target performance improvement.
- **Adoption Guidance:** Easy onboarding for new adopters to get started with CMMI.
- **Systems and Tools:** Provides interactive user experience with model, appraisal method, and performance reporting resources.



About ISACA

ISACA® (www.isaca.org) is a global community advancing individuals and organizations in their pursuit of digital trust. For more than 50 years, ISACA has equipped individuals and enterprises with the knowledge, credentials, education, training, and community to progress their careers, transform their organizations, and build a more trusted and ethical digital world. ISACA is a global professional association and learning organization that leverages the expertise of its more than 165,000 members who work in digital trust fields such as information security, governance, assurance, risk, privacy, and quality. It has a presence in 188 countries, including 225 chapters worldwide. Through its foundation One In Tech, ISACA supports IT education and career pathways for under-resourced and under-represented populations.

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