DRIVING EFFICIENCY AND PUBLIC CONFIDENCE: INTEGRATING QUALITY MANAGEMENT PRACTICES IN THE FEDERAL APPELLATE COURT SYSTEM

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INTRODUCTION

"The Judiciary's power to manage its internal affairs . . . is crucial to preserving public trust in its work as a separate and co-equal branch of government," observed Chief Justice John G. Roberts one hundred years after his predecessor Chief Justice William Howard Taft began his work toward a greater, independent administrative structure.[1] As a separate branch of government insulated from much of the public influence on the elected, political branches of government, courts need a different understanding as how to provide and promote quality services to the public when compared to

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1. JOHN G. ROBERTS, JR., 2021 YEAR-END REPORT ON THE FEDERAL JUDICIARY 1 (2021).

the typical operations of governments.[2] By embracing quality management practices, court administrators can deliver improved performance on the front-line operations of courts while still protecting fundamental due process rights and a stable rule of law. This focus on operational performance can have a direct impact and increase public perception, trust, and confidence, as the judiciary derives much of its authority from the public's trust and confidence in executing its constitutional role.[3]

In developing the *Principles for Judicial Administration*, performance measures were identified as one way courts can support "[p]ublic trust and confidence in courts [which] stem[s] from public familiarity with and understanding of court proceedings, actions[,] and operations."[4] Because quality management can lie within the purview of all court professionals, this approach can create a new culture of excellence for all personnel within the courthouse, driving the effective court governance and operations that are necessary for courts "to demonstrate that they are effectively managing public resources in order to pursue and compete successfully for adequate funding," which is essential to the ability of courts to maintain their vital role in government.[5]

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2. In thinking about quality in government, two questions arise: (1) How is government delivering services; and (2) How are the customers and stakeholders of government agencies obtaining value (i.e., getting needs met) from the received services? *See* GREGORY H. WATSON & JEFFREY E. MARTIN, THE AM. SOC'Y FOR QUALITY RSCH. COMM., THE AMERICAN SOCIETY FOR QUALITY FINAL RESEARCH REPORT: TOWARD AN OPERATIONAL DEFINITION OF QUALITY GOVERNMENT 5, 14 (2003) ("Quality government is the set of practices and processes . . . to improve the quality of life of a nation's citizens and the comprehensive deployment . . . of this approach in order to deliver prosperous, long-term, and equitable performance results to public and private stakeholders . . . ." (emphasis omitted)); RICHARD E. MALLORY, QUALITY STANDARDS FOR HIGHLY EFFECTIVE GOVERNMENT 15 (2d ed. 2018) ("Quality in government is . . . [the] efficient and effective delivery of goods and services that meet end user requirements . . . .").

3. *See generally* NAT'L CTR. FOR STATE CTS., IMPLEMENTING THE NATIONAL ACTION PLAN TO IMPROVE PUBLIC TRUST AND CONFIDENCE (2002).

4. NAT'L CTR. FOR STATE CTS., PRINCIPLES FOR JUDICIAL ADMINISTRATION 11 (2012).

5. *See id.* at 1.

Beginning in the 1990s, academics and court leaders began discussing quality management in the context of the judiciary.[6] Performance measurement tied to standards was the predominant result of these efforts, leading to defined performance measurement standards for both state trial and appellate courts designed to evaluate their overall operations and to provide public transparency into the courts.[7] These performance measurement systems provided state trial and appellate courts with readily applicable performance measurement tools and validated metrics that could be used to evaluate overall performance of these courts.[8] This approach of beginning with standardized performance measures, though, neglected the broad benefit of applying quality principles such as in the development of lean processes and systems that were timely and efficient. Moreover, the reliance on only performance measures instead of a system-wide approach suffered from one of W. Edwards Deming's Deadly Diseases of Management: "[m]anagement by use only of visible figures."[9] Addressing this concern, two subsequent performance management models—the International Framework for Court Excellence and the High Performance Court Framework—provided a sufficient macro approach for courts interested in adopting quality management concepts to their operations, yet their high-level perspective inherently limits their ability to directly evaluate and impact the daily, frontline delivery of court services to the public.[10]

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6. *See, e.g.*, COMM'N ON TRIAL CT. PERFORMANCE STANDARDS, BUREAU OF JUST. ASSISTANCE, TRIAL COURT PERFORMANCE STANDARDS WITH COMMENTARY (1990).

7. *See id.* at 23–34.

8. For a full background on the development of these performance measurement systems, see Jarrett Perlow, *Courting Quality: A Survey of Quality Management Practices in American Courts*, 108 JUDICATURE 52 (2024).

9. *See* W. EDWARDS DEMING, OUT OF THE CRISIS 84 (2018).

10. *See generally* INT'L CONSORTIUM FOR CT. EXCELLENCE, INTERNATIONAL FRAMEWORK FOR COURT EXCELLENCE (3d 2020); BRIAN OSTROM & ROGER HANSON, ACHIEVING HIGH PERFORMANCE: A FRAMEWORK FOR COURTS (2010).

Within the federal judiciary, court performance measurement remains nascent. The public reporting of court information is limited to basic accounting of cases filed, pending, and terminated, with further breakdown of these numbers into different case type categories.[11] Court performance measurement is limited to generalized amounts of time, such as the general length of time cases have been pending or the median disposition time of cases across the life of an appeal.[12] These are performance measurements only in the broadest sense and would be better described as mere data points unlinked to output requirements and not validated by customers or stakeholders—essential components in a quality management system. This lack of uniform, validated, and predefined evaluative quality methods and tools in the federal judiciary has limited the ability for courts and the public to evaluate operational performance or to strategically identify areas for continuous improvement efforts. Likewise, the lack of a cohesive quality management or strategic framework dissociated from defined quality processes and systems has similarly hindered the deployment of structured continuous improvement across the federal judiciary and provided no basis for learning or improvement.

As a "model to other countries for its excellence, judicial independence, and the delivery of equal justice under the law,"[13] the federal judiciary can and should also be a leader in operational excellence and quality both in government and when compared to state, local, and tribal courts in the American legal system. To that

11. *See, e.g.*, *Table N/A—U.S. Courts of Appeals Federal Court Management Statistics (June 30, 2024)*, U.S. COURTS, https://www.uscourts.gov/statistics/table/na/federal-court-management-statistics/2024/06/30-2 (last visited Oct. 13, 2024).

12. Public reports include the Judicial Business of the United States Courts, the Federal Court Management Statistics, the Federal Judicial Caseload Statistics, and the Caseload Statistics Data Tables, which are available online. *See generally Statistics & Reports*, U.S. COURTS, https://www.uscourts.gov/statistics-reports (last visited Oct. 13, 2024).

13. JUD. CONF. OF THE U.S., STRATEGIC PLAN FOR THE FEDERAL JUDICIARY 11 (2020).

end, the federal judiciary should look to available quality resources from the private sector and state courts to create a model program that addresses the deficiencies with available systems and adapt them to the unique needs of the federal judiciary.

Among the benefits available to the judiciary from the application of structured quality management include: (1) providing a framework for the evaluation and improvement of current service levels; and (2) being able to demonstrate the efficiency and effectiveness of service. As demonstrated in the below research, federal appellate courts suffer from inconsistent and highly variable performance in their administrative case management practices. This Article argues that court administrators can address performance issues by implementing basic quality management and continuous improvement methods, along with adopting existing performance and quality standards to fill in the existing gaps.

Because the tools and methods that have already been applied in the past to other judiciary organizations do not apply a sufficiently rigorous and structured quality framework,[14] this Article argues instead for a new quality framework aligned with established quality management system best practices, including the new government-focused quality standards developed by the American Society for Quality and the American National Standards Institute: ANSI G1.[15] This Article evaluates and applies this combined approach to the frontline operations of a federal appellate court's case processing system, which can then be used as a framework model for other courts to apply locally.[16]

In addition to advocating for the adoption of a quality management approach of integrating Lean Six Sigma practices into the new government ANSI G1

14. *See* Perlow, *supra* note 8, at 57 (reviewing and agreeing with commentary highlighting limitations of existing court performance management tools).

15. *See* Am. Soc'y for Quality & Am. Nat'l Standards Inst., 2021 Guidelines for Evaluating the Quality of Government Operations and Services (2021) [hereinafter ANSI G1].

16. Although this Article focuses on only federal appellate courts, a similar approach is worth considering for federal trial courts and state court systems.

standard, this Article also identifies appropriate performance measurements that can be readily used by other federal appellate courts to evaluate clerk's office operational effectiveness. Due to the lack of existing standards, this Article also proposes new performance standards that federal appellate courts seeking to implement quality management programs can use as performance targets as they formalize their own quality management practices.

In considering performance targets or measurements for courts, it is important to note at the outset that any efforts to evaluate or to decrease processing time for resolving cases must be careful not to interfere with, or adversely impact, the ability and time necessary for judges to exercise their constitutional and statutory duties in adjudicating cases before them. Judges and court administrators must instead find an appropriate balance between efficient process while continuing to provide justice and due process to all litigants.[17] After all, the concept of "justice" is highly subjective and individualized. Determining "justice" across many and divergent cases is neither a readily available nor an appropriate method for evaluating the quality of court operational performance. Moreover, improving the quality of "justice" is ultimately the responsibility of judicial officers through their judicial decision-making, which is within the exclusive province of those within the judges' chambers.

And so how much of a role can court administrators even have in advancing quality service and performance in the judiciary? Simply put, plenty! The below analysis of five years of existing case management data and case management practices from all federal appellate circuit courts identifies significant variation in operational

17. For more information about how the basic concepts of due process apply to the delivery of services with judiciary beyond the strict decisions in each case, consider the concept of "procedural justice," which looks at "how people and their problems are managed" to influence overall public perception and confidence in the judicial system. *See* Tom R. Tyler, *Procedural Justice and the Courts*, 44 CT. REV. 26, 26 (2007).

results and quality practices across these courts. Based on this analysis, judges and court administrators should consider enhancing internal administrative circuit court processes—apart from judicial decision-making—through the increased use of established quality management practices in court administration. Responding to the limited use of quality management practices in the federal judiciary, this Article highlights the multi-year application of such practices by the Federal Circuit and offers five recommendations other federal appellate courts can use to implement a new quality management framework to integrate structured quality management systems into frontline court operations and thereby promote greater public trust and confidence across the federal judiciary.

I. METHODS

The existing federal appellate court performance measurement data produced by the courts and published by the Administrative Office of the U.S. Courts were reviewed considering the measurements in existing state court performance systems and requirements in the ANSI G1 quality standard.[18] The archival case data from all thirteen circuit courts from FY 2019 through 2023 were then analyzed to determine what meaningful performance measurements could be created from existing data. This case data was retrieved from the publicly available Federal Judicial Center's Integrated Database[19] and archival case data from the Federal Circuit's electronic case management system.[20] To

18. These reports include the Judicial Business of the United States Courts, the Federal Court Management Statistics, the Federal Judicial Caseload Statistics, and the Caseload Statistics Data Tables, which are available online. *See generally Statistics & Reports*, *supra* note 12.

19. *See Appellate Cases Filed, Terminated, and Pending from FY 2008 to Present*, FED. JUD. CTR., https://www.fjc.gov/research/idb/appellate-cases-filed-terminated-and-pending-fy-2008-present (last visited Oct. 13, 2024) (providing digital access to the Federal Judicial Center's Integrated Database).

20. Although not currently provided in as easily accessible a format as the data in the Integrated Database, all the data analyzed from the Federal Circuit

account for different practices concerning original proceedings,[21] only appeals in civil and criminal cases, as well as petitions for review in agency cases, were evaluated. To ensure that the complete case management process by each court was captured in the analysis, only terminated cases were reviewed. Table 1 below provides the data codes that were retrieved for each field, and fields not listed were not included in the analysis.[22] Any data coded as missing was converted into a null value ("*"). Eventually, a total of 205,370 case records were extracted and included in the analysis.

is publicly available through the federal judiciary's PACER service. *See generally* PACER, http://www.pacer.gov (last visited Oct. 13, 2024).

21. Original proceedings and miscellaneous applications include petitions for writs of mandamus and prohibition, other extraordinary writs filed pursuant to Federal Rules of Appellate Procedure 21 and 22, second or successive habeas petitions, certain appeals relating to bankruptcy and class actions, and permissive appeals. *See, e.g.*, FED. R. APP. P. 21(a)(1) ("A party petitioning for a writ of mandamus or prohibition directed to a court must file the petition with the circuit clerk and serve it on all parties to the proceeding in the trial court."); *see also* FED. R. APP. P. 22(a) ("An application for a writ of habeas corpus must be made to the appropriate district court.").

22. Field descriptions are available online. *See* FEDERAL JUDICIAL CENTER INTEGRATED DATA BASE APPEALS DOCUMENTATION FY 2008—PRESENT, FIELD DESCRIPTIONS (n.d.), https://www.fjc.gov/sites/default/files/idb/codebooks/Appeals%20Codebook%202008%20Forward%20rev%2002102021.pdf.

Table 1. Description of field labels, descriptions, and data codes from the Federal Judicial Center Integrated Database

Field	Description	Data Codes Included
CIRCUIT	Circuit court in which appeal filed	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
DOCKET	Case number	All
REOPEN	Type of reopen or remand	-8 (excluded all reopening/remand types)
APPTYPE	Type of appeal at filing	All except for 6 (Original Proceedings) and 22 (Miscellaneous case)
APPDATE	Date the notice of appeal was filed in originating court	All (Note: This value does not exist in cases where appeals are initiated directly at the circuit court.)
DKTDATE	Date the case was docketed in the appellate court	All
BRFIELD	Date the last brief was filed before hearing or submission	All
SUBDATE	Date submitted to merits panel for disposition and no hearing	All
HEARDATE	Date argued to a merits panel	All
JUDGDATE	Date of final judgment of the appeal	All
TAPEYEAR	Statistical year of the case at disposition	All

I evaluated cases for five time periods—the elapsed time from the filing of the notice of appeal or petition for review to docketing the new case ("opening interval"), the elapsed time from docketing the new case to the filing of the last brief in the case ("briefing interval"), the elapsed time from the filing of the last brief to submission to a

panel of judges for adjudication without a hearing ("submission interval"), the elapsed time from filing of the last brief to submission to a panel of judges for adjudication with a hearing ("hearing interval"), and then the elapsed time between either the submission interval or hearing interval and the entry of judgment and closure of the case ("termination interval"). For instances in which the case either did not complete briefing or was never submitted to a panel, the intervening intervals were omitted and then only the elapsed time between the last completed interval and the closure of the case was calculated as the termination interval. The intervals for each case were added together to calculate the final "total case processing time" interval for the case.

Table 2 below explains the formulas used to calculate the intervals in Excel based on the extracted data fields.

Table 2. Formulas used for calculating case processing intervals

Interval	Formula
Opening Interval[23]	=IF(APPDATE="*", "*", (DKTDATE−APPDATE))
Briefing Interval	=IF(BRFILED="*", "*", (BRFILED−DKTDATE))
Submission Interval	=IF(SUBDATE="*", "*", IF(BRFILED="*", SUBDATE−DKTDATE, SUBDATE−BRFILED))
Hearing Interval	=IF(HEARDATE="*", "*",IF(BRFILED="*", HEARDATE−DKTDATE), HEARDATE−BRFILED))
Termination Interval	=IF(HEARDATE="*", IF(SUBDATE="*", IF(BRFILED="*", JUDGDATE−DKTDATE, JUDGDATE−BRFILED), JUDGDATE−SUBDATE), JUDGDATE−HEARDATE))
Total Case Processing Time	=SUM(Opening Interval, Briefing Interval, Submission Interval, Hearing Interval, Termination Interval)

23. One type of appeal—a petition for review—is filed directly with the circuit court. *See* FED. R. APP. P. 15(a)(1) ("Review of an agency order is commenced by filing, within the time prescribed by law, a petition for review with the clerk of

Some of the formulas required IF/THEN calculations to avoid error calculations due to not all cases having dates for all relevant time periods. For example, a case could be dismissed after opening for lack of jurisdiction. In this cirumstance, the case would not have an entry for briefing, submission, and hearing—only for termination.

Data was then sorted by circuit ("CIRCUIT") and then judgment date ("JUDGDATE") and imported into Minitab Statistical Software. Using Minitab Statistical Software, I performed an exploratory data analysis of the total case processing time of five years of case data for each circuit, which provided a high-level summary of case processing in each circuit. The exploratory data analysis model used was based on a method developed by Dr. Gregory H. Watson after the "4-Up" chart created by the Motorola Six Sigma Research Institute.[24] Dr. Watson modified the Motorola model to substitute the original control chart for an I-Chart and to add a probability plot to show change over time, which presents an overview analysis format that is easier for initial trend spotting and presentation to those not steeped in the field of statistical analysis.[25]

The exploratory data analysis included: (1) a graphical summary of total case processing time that

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a court of appeals authorized to review the agency order."). The data for petitions for review appeals in the Federal Judicial Center Integrated Database, though, does not include the date these petitions are filed, only the date when they are opened. Therefore, for purposes of calculating the opening interval, the formula assumes these cases are opened on the same day as they are received. Likewise, the true opening internal is likely less than the calculated interval as the only publicly available data is for the time from transmittal between the trial court to the appellate court plus the time for the appellate court to docket the appeal after receipt. A more accurate opening interval calculation that only accounts for the appellate court's performance would be from receipt to opening of the appeal at the appellate court.

24. *See* GREGORY H. WATSON, DESIGN FOR SIX SIGMA: INNOVATION FOR ENHANCED COMPETITIVENESS 33 (2005), https://gregoryhwatson.eu/wp-content/uploads/2021/04/17-BES-e-Book-Design-for-Six-Sigma-2005.pdf (discussing how the Six Sigma methodology was developed by the Motorola Six Sigma Research Institute).

25. Interview with Dr. Gregory H. Watson, Business Excellence Solutions Ltd. (Apr. 2, 2023).

included the 95% confidence interval for mean and median, and a boxplot, which represents the quartile ranges of the data values excluding outliers, defined as 1.5 times the difference between the 75th (third quartile) and 25th (first quartile) percentages of data; (2) a probability plot of total case processing time based on a normal distribution with a 95% confidence interval; (3) an individual control chart ("I-Chart") subdivided by termination year tested for the special cause of more than three deviations (3σ) from the center; and (4) a capability analysis for total case processing capability with Cp set to 1.00 to determine the upper specification limit for ≈ 95% of overall performance (Cp = (USL – LSL)/6σ), or performance within 3σ, with a 95% confidence interval.[26]

Analyses for the last available three years of data for each circuit—cases terminated in FY 2021, FY 2022, and FY 2023—were performed to provide a comparable performance measurement for each circuit. Using Minitab Statistical Software, I calculated the mean and median processing time in days for each interval for all six processing intervals per year, which was used to obtain the mean and median processing time in days for each interval. For each of the same six processing intervals per year, I then ran a tally calculation of the cumulative percentage to determine the processing time corresponding to an 80% cumulative percentage for the respective interval.[27]

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26. For the full exploratory data analysis graphs, see Jarrett Perlow, Circuit Exploratory Data Analysis Charts (FY 2019–2023): First Circuit Exploratory Data Analysis Total Case Processing Time (FY 2019–2023) 1–13 (2024), https://perma.cc/W6LE-N2CS; Jarrett Perlow, Circuit Case Processing Performance Tables (FY 2021–2023): Case Processing Performance by Circuit 1–3 (2024), https://perma.cc/CW25-5UP8; see also Jarrett Perlow, Driving Efficiency and Public Confidence: Integrating Quality Management Practices in the Federal Appellate Court System (2024), Mendeley Data DOI:10.17632/xz3xcdc8pt.1 (full datafile).

27. Because the cumulative percentage rarely calculated to exactly 80.0%, the first processing time to be equal to or more than 80.0% was determined to be the processing time equivalent to an 80% level of performance. As explained below, 80% was set as the performance benchmark standard for all circuit performance. *See infra* Part III.A.5.

Finally, a 40-question survey was sent to senior staff at the thirteen circuit courts concerning their use of performance measurements, quality management practices, and recognized quality management tools and processes available within Lean Six Sigma, as of FY 2023.[28] As part of the confidentiality agreement for participation in the survey, only anonymized and cumulative results from the survey are included in this Article. Overall, the survey had a 100% participation rate as all thirteen circuit courts responded.

II. FINDINGS

A. Federal Appellate Court Performance

As detailed below, the federal appellate circuit courts, both individually and collectively, generally lack consistent, predictable performance and suffer from a lack of regularity or control in practice. The findings are organized by performance ranges, performance predictability, performance variation, process capability, and comparative performance.

1. Performance Ranges

Except for the Federal Circuit, which had its median performance barely exceed its mean performance, the remaining twelve circuit courts had median performance exceeding mean performance (i.e., a skew right distribution with a long tail), which suggests most actual performance was at a lower level but was skewed upward as a whole due to repeated outliers in performance that increased the value of the mean.

28. For the survey questions and responses to all questions, see Jarrett Perlow, Quality Management Practices in Federal Appellate Clerk's Offices Survey Results (December 2022) 1–25 (2022), https://perma.cc/TRT9-B3ST.

Table 3. Summary of all circuit court total case processing time in days (FY 2019–2023)

Circuit	Mean	Median	St. Dev.	Quartile Min.	Quartile Max.	Quartile Range (no outliers)	Overall Min.	Overall Max.
First	422.0	356.0	337.5	3	1,155	1,152	3	4,659
Second	353.7	269.0	308.0	1	1,057	1,056	1	10,236
Third	300.6	234.0	265.1	0	794	794	0	4,475
Fourth	282.1	194.0	263.0	1	754	753	1	4,152
Fifth	274.6	239.0	214.2	0	753	753	0	3,773
Sixth	263.1	233.0	230.2	1	679	678	1	7,819
Seventh	261.6	211.0	241.3	0	738	738	0	2,743
Eighth	232.3	164.0	209.8	1	831	830	1	3,212
Ninth	436.3	327.0	446.7	0	1,158	1,158	0	6,872
Tenth	266.9	223.0	236.5	0	806	806	0	3,427
Eleventh	264.1	194.0	256.4	0	774	774	0	3,329
DC	451.5	326.0	579.6	0	1,102	1,102	0	7,367
Federal	370.1	371.5	229.9	8	961	953	8	2,440

When viewed as a whole, the circuit courts had considerable differences in performance ranges of total case processing time. The boxplot graphs of overall performance showed that the Sixth Circuit had the shortest quartile range excluding outliers at 678 days, followed by the Seventh Circuit (738 days) and the Fourth and Fifth Circuits (753 days).[29] The Ninth Circuit had the longest whiskers range at 1,158 days, followed by the First Circuit (1,152 days) and the D.C. Circuit (1,102 days). Finally, the Federal Circuit had the overall lowest maximum at 2,440 days, followed by the Seventh Circuit at 2,743 days; the Second Circuit had the highest overall maximum at 10,236 days, followed by the Sixth Circuit at 7,367 days.

29. A boxplot chart is a descriptive statistics tool that shows the distribution of data across quartiles. The data ranges for the second and third quartiles (25–75%), plus the median, are shown in the box. The lower whisker shows the data range for the first quartile (0–25%) and the upper whisker shows the data range in the fourth quartile (75+%). Data with a normal distribution will have most of the data within the box and then short whiskers. When reading a boxplot chart, a wide whisker range indicates that there is wide variation in the distribution of the data set.

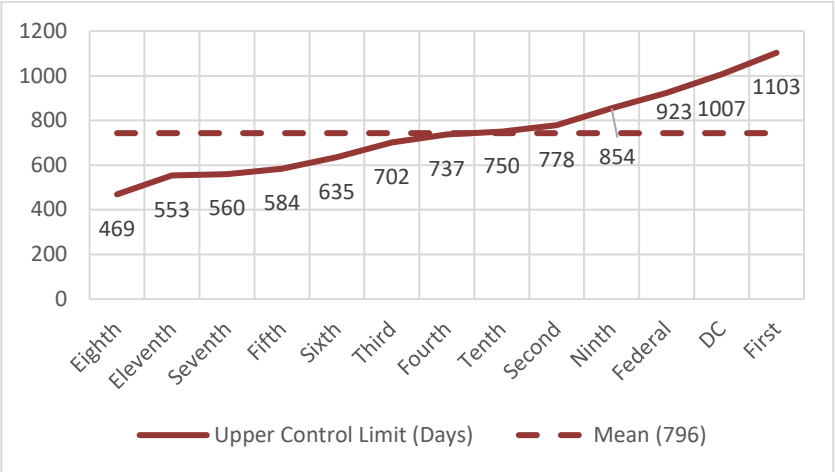
2. Performance Predictability

Under a probability plot by year for the circuit courts, all circuit court performance for total case processing time appeared within a normal distribution up to at least the 80% performance level, with all circuit courts breaking from the distribution by the 90% level. Mean performance for 54% of the circuit courts—First, Second, Fourth, Sixth, Ninth, Tenth, and Eleventh—increased over the studied five-year period, shown by a shifting and bending to the right over time on the probability plots. Finally, decreased, or shorter, performance time, reflected by divergences on the probability plots shifting leftward over time, were observed for the Eighth, D.C., and Federal Circuits. The Third, Fifth, and Seventh Circuits had minimal change in performance over the reviewed period.

3. Performance Variation

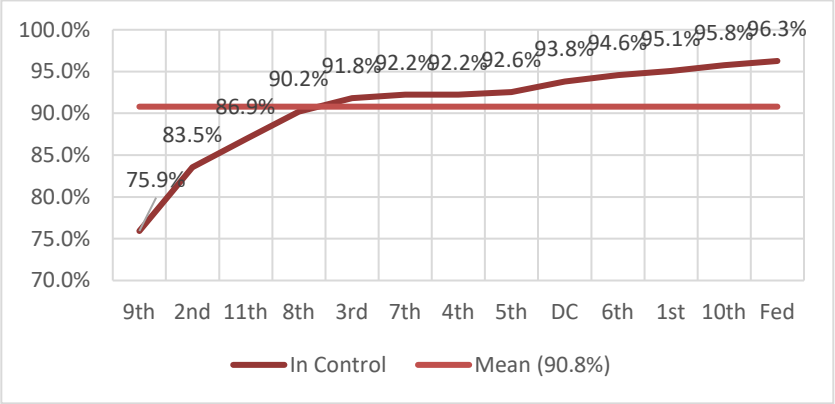
In addition to differences in overall performance ranges, there were similar variations in the upper control limits—or performance within three sigma distributions from the mean—for total case processing times over the five-year period. As shown in Figure 1, nine (or 69%) of the circuit courts had upper control limits below the average upper control limit for all circuit courts.

Figure 1. All circuit upper control limits (FY 2019–2023)



A review of I-Charts for the same period further confirmed that all the circuit courts lacked statistical control over total case processing, with special cause variation occurring in varying amounts for all circuit courts. However, when viewed as a percentage of all cases reviewed from the period in Figure 2, all circuit courts—except for the Second, Ninth, and Eleventh—had 90% or more of their cases processed within three deviations from each court's average performance, i.e., were in control. The Federal, Tenth, and First Circuits had only five percent or fewer of their cases performing outside of statistical control limits, with the Federal Circuit having over 96% of its cases processed within statistical control limits.

Figure 2. Percentage of circuit cases processed within control limits (FY 2019–2023)



4. Process Capability

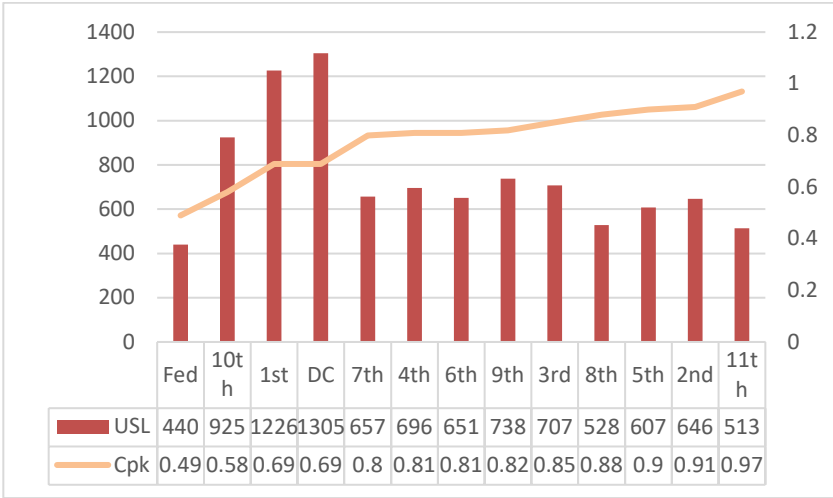
A process is capable if it can be repeated while meeting predetermined specifications. Because performance requirements vary by circuit, all circuit courts were assigned an upper specification limit ("USL") based on their existing performance at ≈ 95% level of performance for the reviewed five-year period.[30] Through the process capability analysis, the process capability index (*Cpk*) was calculated to show whether the process of each circuit as currently designed was capable, i.e., able to reproduce the same performance up to the USL. A *Cpk* of at least 1.0 is considered capable but requiring tight controls; a *Cpk* of at least 1.33, though, demonstrates a fully capable process.

As shown in Figure 3, none of the circuit courts had a minimally capable process, with the Eleventh Circuit coming closest with a *Cpk* of 0.97. Interestingly, the Federal Circuit had the lowest *Cpk* of 0.49 but also the lowest USL of 440, which suggests the court can consistently process many of its cases within a narrow range but cannot yet sustain that performance on a large scale. By comparison, the Eleventh Circuit, which has

30. For purposes of a capability analysis, the upper specification limit is the maximum acceptable level of performance.

the second lowest USL of 513, appears to be able to consistently process most of its cases within only a slightly wider range.

Figure 3. Comparison of circuit process capability (FY 2019–2023)



	Fed	10th	1st	DC	7th	4th	6th	9th	3rd	8th	5th	2nd	11th
USL	440	925	1226	1305	657	696	651	738	707	528	607	646	513
Cpk	0.49	0.58	0.69	0.69	0.8	0.81	0.81	0.82	0.85	0.88	0.9	0.91	0.97

5. Comparative Performance

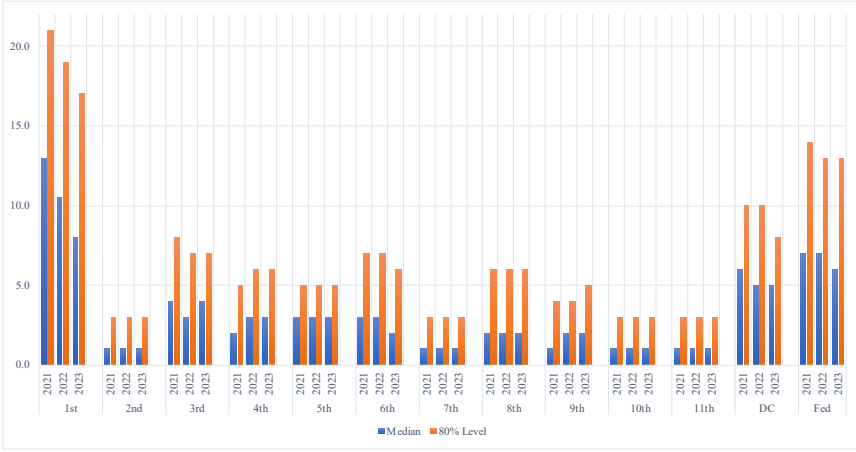
Given that typical circuit performance was around the median, and not mean, value (i.e., right skewness) for all circuit courts, median performance is likely a better measurement for comparing performance between the circuit courts than mean performance. As an example, for the opening interval, most circuit courts had median performance ranging from one day to eight days in 2023, while most circuit courts had a mean performance ranging from two days to over eleven days. Because the probability analysis was predictable up to at least the 80% performance level across all circuit levels, the 80% performance level was identified as an appropriate benchmark for comparing the median performance of the different courts.

After comparing median performance to likely performance at the 80% performance level, most of the circuit courts showed notable increases in their likely performance within the opening interval, with some circuit courts performing up to three times above their

median levels. In other words, looking only at median performance—or mean performance for that matter—gave an artificially lower performance by each court and did not reflect the likely actual performance by each circuit.

When viewed across a three-year period as in Figure 4, five circuit courts show consistent, predictable performance—the Second, Fifth, Seventh, and Tenth Circuits—of opening cases within three days. Five circuit courts—the First, Third, Sixth, D.C., and Federal Circuits—show improved performance by decreasing processing time during the same period. The remaining circuit courts—the Fourth and Ninth—increased their processing times during the period.

Figure 4. Three-year case opening performance for all circuit courts (FY 2021–2023)



B. Existing Federal Appellate Quality Management Practices

1. Processing Times

After reviewing actual performance by case processing intervals from the collected data sets, the survey of the circuit courts revealed that only ten (or 76.9%) of the circuit courts track their own performance at the same case processing intervals evaluated in this

analysis. These courts use the interval data to evaluate the effectiveness of internal processes in 80% of the participating courts, however only one court (or 10%) makes this information available to the public and only four courts (or 40%) share this information with the frontline staff performing these tasks but at infrequent intervals.

Eleven (or 84.6%) of the circuit courts have existing processing time performance standards in place. However, within those eleven circuit courts, only seven courts document these performance standards and make them available to staff, and seven courts (but not necessarily the same circuit courts) change their processing standards based on the case or document type being processed. Within these eleven circuit courts, five (or 45%) of them do not engage in regular review or updating of their time performance standards. Finally, a comparison between the actual performance of the circuit courts and the processing standards provided by each circuit in their survey responses shows that actual circuit performance does not align with their understanding of their own processing standards. Confidentiality afforded to participants during the survey prevents reporting on the specific variations between perceived and actual court performance; however, the actual performance analysis for several circuit courts did not support the results the same courts reported in the survey data, suggesting a disconnect between policy and practice.

2. Processing Accuracy

Concerning processing accuracy, only eight (or 61.5%) of the circuit courts track the accuracy of case processing staff. Seven out of those eight circuit courts use the accuracy data to evaluate both staff performance and the effectiveness of their internal processes; and all these circuit courts share the accuracy data with the frontline case processing staff. In only six of these circuit courts (or 75%) does management review processing accuracy data on a regular basis, and six (or 75%) of these

circuit courts (but not necessarily the same circuit courts) provide the accuracy data to staff on a regular basis.

Of note, only three circuit courts (or 23%) have minimum accuracy requirements in place for case processing staff. The provided responses revealed that these circuit courts have minimum accuracy requirements as follows: minimum accuracy required only for case opening, a requirement of a less than a 2% error rate, or a minimum performance of 90% accuracy that increases based on experience, respectively. Yet only one of the circuit courts reviews accuracy requirements annually. The three circuit courts set their accuracy minimums based on historical performance data, current performance and errors, or management direction in consultation with staff.

3. Quality Control Processes

All the circuit courts perform quality control review of public case filings through a variety of methods. Several circuit courts use a quality control program to determine compliance, while others rely on staff checklists or requirements in a manual process. Who performs the review of public filer documents also varies between different types of case managers or even legal staff performing some of the compliance review, depending on the type of filing. After performing the quality control review, all the circuit courts issue some form of noncompliance or deficiency notice to the public filer, and all the circuit courts maintain a standardized list of reasons why filings might be found noncompliant. Most of the circuit courts (or 53%) review their standard lists of noncompliance reasons when court rules change, and 18% of the circuit courts engage in a regular review of their standard lists of noncompliance reasons.

Noncompliance notices are provided to filers in several manners, with some of the courts varying in how they provide such notice based on the nature of the issue. An overwhelming majority of the circuit courts are fully transparent with the public when deeming a filing

noncompliant: eleven (or 84.6% of) circuit courts enter some notification of the noncompliance on their public dockets. To assist with improving the accuracy of filer compliance, the circuit courts engage in several activities, with over 85% of all circuit courts using noncompliance data to identify potential changes to their local rules or to publicly available materials such as electronic filing procedures. Yet, this tracking appears to be based on largely anecdotal (i.e., unreliable) data, as only 30.7% of the circuit courts reported tracking noncompliance data.

C. Awareness and Use of Independent Quality Management Practices

For available court quality management tools developed out of the National Center for State Courts, at least ten (or 76.9%) circuit courts were not aware of these resources. Within general quality management methodologies or standards above discussed, ten (or 76.9%) circuit courts had either no or slight awareness. Of the three circuit courts that were either moderately or extremely aware of court management tools, the survey respondents had experience working in or with state courts or national organizations such as the National Center for State Courts. Awareness of general quality management practices was only at the moderate to extreme awareness levels in one or two circuit courts.

The use of these quality management tools or practices followed a similar pattern. Only two circuit courts (or 15.4%) reported currently using CourTools and the High Performance Court Framework,[31] and only one circuit reported currently using the International Framework and other non-court-specific quality management practices. No more than three circuit courts

31. *See generally* OSTROM & HANSON, *supra* note 10 (explaining the CourTools and the High Performance Court Framework); *Appellate Court Performance Measures*, NAT'L CTR. FOR STATE CTS.: COURTOOLS, https://www.courtools.org/appellate-court-performance-measures (last visited Oct. 13, 2024) (providing access to the CourTools measures).

(or 23%) reported using the following recognized quality management tools: process mapping/workflow diagramming, SWOT analysis,[32] root cause analysis, or DMAIC methodology for process improvements.[33] The remaining circuit courts reported having never used these and other quality management tools. Up to 15.4% of the respondents, however, reported that they had previously used at least one of the identified tools. Finally, the use and awareness levels by the respondents of general quality management tools or practices were overwhelmingly (84.6%) in either the "not aware" or "slightly aware" responses.

D. Application of Continuous Improvement Practices and Quality Standards at the Federal Circuit

The Federal Circuit Clerk's Office began incorporating simple and modified Lean Six Sigma continuous improvement methods into its operations in 2017. Over the next three years, the Clerk's Office identified and began tracking performance measurements focusing on case processing accuracy and time. Based on an early exposure draft of ANSI G1, Clerk's Office management identified gaps within its existing quality management system and used the requirements of ANSI G1 to begin an incremental implementation of the standard. The work began with mapping out—using a SIPOC diagram—inputs, processes, and outputs to identify primary function areas

32. SWOT analysis is a strategic planning tool that looks at an organization's internal strengths and weaknesses and their external opportunities and threats to develop strategies to capitalize on the identified strengths and opportunities while planning to address identified weaknesses and to minimize external threats. *See* Jeff White & Cassie Bottorff, *What Is a SWOT Analysis? Download Our Free Template*, FORBES: ADVISOR (May 28, 2024, 9:59 PM), https://www.forbes.com/advisor/business/what-is-swot-analysis/.

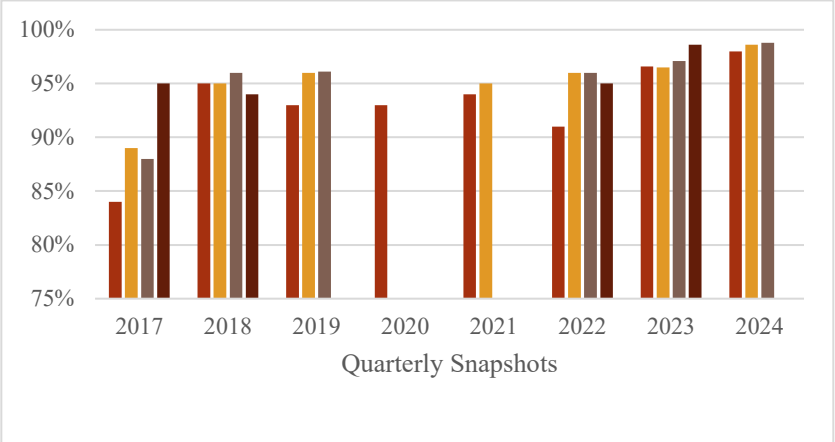
33. DMAIC—or "Define, Measure, Analyze, Improve, and Control"—is the methodology used in Lean Six Sigma for a process improvement activity or project. *See* Daniel Croft, *What is DMAIC in 6 Sigma?*, LEARN LEAN6SIGMA, https://www.learnleansigma.com/improvement-methodology/what-is-dmaic/ (last visited Oct. 13, 2024).

and the customers for each of the office's processes.[34] An implementation team then identified contributing factors needed to support the success of each primary function area, along with corresponding measurements to evaluate whether the process was successful.

After two years of following the incremental, maturity framework of ANSI G1 and integrating quality management practices into its frontline operations, the Federal Circuit increased the number of its key performance indicators meeting or exceeding requirements by 20%. Among the improvements realized at the Federal Circuit in a two-year period included: (1) a 49% average reduction in case processing times from case opening to assignment of a case to a panel; and (2) a 58% average reduction in the time to assign cases to panels. In terms of improved operational quality and service, the Federal Circuit (1) increased the accuracy of its case processing and docketing to an overall average of 98% as of the last quarter of FY 2024—an increase of 17.6% since 2017—and (2) a sustained average public filer compliance rate—or the percentage of accurate filings by counsel and self-represented litigants—of at least 90% since 2019.

34. A SIPOC diagram is a process workflow showing the "Suppliers, Inputs, Process, Outputs[,] and Customers." *See* Jennifer Bridges, *What Is SIPOC? How to Use a SIPOC Diagram*, PROJECT MANAGER (May 20, 2024), https://www.projectmanager.com/training/what-is-sipoc.

Figure 5. Federal circuit court average case processing accuracy (FY 2017-2024)



Among the successes of implementing ANSI G1, the Federal Circuit implementation team noted that the use of a maturity model system was beneficial in first establishing organizational performance baselines and then providing direction of where to go next in improving performance and quality practices. Therefore, following the results of the office's external validation at ANSI G1 Level 3,[35] the office management and quality management staff identified what actions were needed for the office to mature to the next level—Level 4—of the ANSI G1 system maturity matrix. The additional items implemented since March 2022 included: (1) new real-time reporting on key performance indicators to allow management to adjust workflows based on real time activities; (2) expansion of the office's risk management system through a new critical incident reporting and corrective action program; and (3) expansion of quarterly evaluation of and change improvement from filer non-compliance bases. Based on an internal reevaluation in 2023, the Clerk's Office assessed its case processing

35. "Clerk's Office Earns Award for Cutting Case Processing Time in Half," U.S. COURTS (Mar. 8, 2022), https://www.uscourts.gov/data-news/judiciary-news/2022/03/08/clerks-office-earns-award-cutting-case-processing-time-half.

system at least one level higher than in 2022—Level 4 of ANSI G1.

III. RECOMMENDATIONS

A. Recommendation 1: Expand the Use of Quality Management Tools

Existing judiciary performance measurement tools are insufficient on their own to provide the structure and robustness needed to incorporate quality management systems and practices into the federal appellate courts. However, the focus on macro-style measurements by these tools limits their effectiveness in improving front-line court operations. Because quality management remains an underutilized practice within the federal judiciary, courts need to be offered a range of solutions that can be adapted and integrated into local practices based on local needs, which will result in a cultural shift in workplace practices.

Federal appellate courts have several available quality management tools that they can choose from to improve the effectiveness of their front-line operations. But if the federal appellate courts have not yet adopted commonly accepted quality management and continuous improvement practices, where should they begin? First, court administrators should not attempt to do everything at once. Next, the following recommendations are offered as a more methodical approach that can be adopted in part as a piecemeal approach, or in full as a comprehensive program. Lacking much of any consistent quality management practices, the federal appellate courts would benefit—as the Federal Circuit did—from starting with ANSI G1. Because ANSI G1 provides for an incremental approach to go from no quality management practices to benchmarking quality management practices, federal appellate courts can proceed at a pace that is comfortable and feasible for them, evaluating and adjusting along the way.

As demonstrated in the externally validated performance results of the Federal Circuit, a federal appellate clerk's office with no current quality management system has the potential to advance at least three maturity levels in under five years and deliver sustained quality improvement to front-line operations.[36] Other federal appellate courts seeking to integrate quality methods into their operations can follow the Federal Circuit's phased approach model by first evaluating their current level under ANSI G1 and then identifying what next action under the standard should be incorporated to advance another maturity level.

B. Recommendation 2: Implement Lean Six Sigma Practices in Case Processing Systems

Federal appellate courts lack consistency or control over their case processing systems. As seen in the analysis of five years' worth of data, the federal appellate courts have a high degree of variation in the time it takes to adjudicate cases, both overall and when examined by individual case intervals. Each court operates differently, which can explain the considerable performance time differences between different courts. Nevertheless, within each court there is also a high degree of variation within each process interval. Put another way, the circuit courts collectively and individually need to examine their existing internal and administrative processes and determine where they can provide greater consistency in the time it takes to resolve cases.

The federal appellate courts can pursue this approach by adopting Lean Six Sigma principles to eliminate both waste and variation in their processing of cases. Because the "Lean" portion of Lean Six Sigma is

36. Jarrett B. Perlow, *Organizational Maturity in Court Administration: A New Evaluative Standard for Court Administrators*, 12 CT. ADM'R 24, 27–28 (2022) (summarizing the application of quality management systems in the Federal Circuit).

easy to adapt and apply to most processes, the circuit courts should first begin with learning about and identifying where Lean concepts and tools can be used to eliminate waste in their existing processes. For example, the Federal Circuit experienced a 49% reduction in case processing times from case opening to assignment of a case to a panel following the application of waste elimination practices to internal Clerk's Office processes from 2020 to 2022.[37] Other circuit courts can likely benefit as well from adopting these concepts within their internal administrative practices, at which point the courts can then consider whether to proceed with the more complex Six Sigma statistical tools to further reduce case processing variation.

C. Recommendation 3: Implement Expanded Operational Performance Reporting

Existing reporting of federal appellate court performance measurements is of limited value in evaluating actual operational performance. Currently, the Administrative Office of the U.S. Courts produces quarterly and annual reports of information about the circuit courts of appeals.[38] This data, though, is limited to simple totals of cases filed (and the types of cases filed), cases pending, and cases terminated (and the types and methods of terminations).[39] The only analytical data provided in these reports is the caseload per active judge on the court, the overall median disposition time from the filing of the notice of appeal to the disposition of the case, and year-over-year percentage changes in case totals.[40] Although case data

37. *Id.* at 28.

38. *See generally Statistics & Reports*, *supra* note 12.

39. *See, e.g.*, *Statistical Tables for the Federal Judiciary—June 2024*, U.S. COURTS, https://www.uscourts.gov/statistics-reports/statistical-tables-federal-judiciary-june-2024 (June 30, 2024) (providing access to a report on "Cases Filed, Terminated, and Pending" in the U.S. Court of Appeals as of June 2024).

40. *See, e.g.*, U.S. COURTS, U.S. COURT OF APPEALS SUMMARY—12-MONTH PERIOD ENDING JUNE 30, 2024 (2024), https://www.uscourts.gov/sites/default/files/data_tables/fcms_na_appsummary0630.2024.pdf.

is available—such as the data used in the above analysis—it is provided only in raw, snapshot form and is not readily meaningful to the public. In the end, this data provides little to no useful information for evaluating an individual court's performance or performance between the circuit courts. Moreover, this data does not comport with recommended performance measurement reporting practices for courts.[41]

Federal appellate courts should develop a uniform format for the public reporting of meaningful performance measurements that address accuracy, timeliness, customer satisfaction, and the use of quality management standards. The current methods of reporting federal appellate court data are ineffective and provide little to no insight into actual court performance. Instead, a more detailed, performance-based measurements system is needed that focuses specifically on the activities of the federal appellate courts. Much like how court decisions explain the reasoning for why the court is ruling the way it is, the overall goal of such a performance measurement system should similarly allow anyone to evaluate the effectiveness of a court's operations based on easily understandable measurements.

The following are recommended minimum requirements—and available solutions—for creating such a system for federal appellate courts:

First, case performance data should be compiled and retrievable based on easily understandable case intervals that reflect the full lifespan of an appeal. As shown above, such data is already available from the existing appellate case management system and can be analyzed within the existing six case intervals to satisfy this requirement.

Second, data calculations should be easily applicable to the case data. Simple calculations of mean, median,

41. See *generally* Perlow, *supra* note 8, at 53–55 (explaining national performance measurement practices and methods including Appellate Court Performance Standards, Appellate CourTools, and Model Time Standards).

and cumulative performance levels (*e.g.,* at 80%) satisfy this requirement.

Third, reported data should promote confidence in the quality of the service being performed by the court and encourage courts to adopt internal requirements designed to support such public confidence. Accuracy measurements of basic case activities, establishing and measuring the performance on essential processes (key performance indicators), public service satisfaction levels, employee satisfaction levels, and information about the court's handling of public filings would all satisfy this requirement.

Finally, courts should be encouraged to adopt validated, independent quality management standards into their operations. Reporting on the existing and assessment level of such standards satisfies this requirement.

All these items can be condensed into a one-page scorecard that courts can make available annually on either their websites or in annual reports. A model scorecard is shown in Figure 6. A table explaining the methodology for calculating each item on the Model Circuit Operational Scorecard is available in the Appendix.

Figure 6. Model circuit operational scorecard

Model Circuit Operational Scorecard

FY 2021 – 2023

Case Processing Performance*	Mean (Days)			Median (Days)			80% Performance (Days)		
	2023	2022	2021	2023	2022	2021	2023	2022	2021
Opening Interval									
Briefing Interval									
Submission Interval									
Hearing Interval									
Termination Interval									
Total Case Processing									

	2023 Mean (%)	2022 Mean (%)	2021 Mean (%)
Case Opening Accuracy			
Case Termination Accuracy			
Key Performance Indicators Met (Q4)			
Overall Public Filing Compliance			
Public Service Satisfaction			
Employee Satisfaction			

Quality Management Practices	2023	2022	2021
ASQ/ANSI G1 Maturity Score			
IFCE Self-Assessment Score (%)			

*Excludes original proceedings, writs, and miscellaneous applications.

D. Recommendation 4: Adopt Minimum Baseline Performance Standards for Case Processing

Federal appellate courts lack minimum baseline performance standards. A review of five years of case processing data from all thirteen circuit courts reveals inconsistent performance standards, limited predictability or transparency in processing times, and processes that are neither statistically capable nor under control. In practice, this means that litigants will face

great disparity in how quickly their cases will be handled depending on which circuit has jurisdiction over their case.

As with performance standards that already exist for state courts,[42] federal appellate courts need a minimum baseline timeliness standard to serve as a benchmark for performance evaluation, as well as to provide a target for internal process improvement activities. Although local practices vary between the appellate circuit courts, the adoption of a consistent baseline target for timeliness can assist courts in delivering more consistent levels of service in processing and resolving cases. By having a uniform target, courts can tailor local process improvement efforts and internal standards to drive performance requirements. The creation of standards, though, should adhere to the recommended best practices within the Model Time Standards for State Appellate Courts[43]—running from the initiation of the appeal, measure discrete time intervals within the appeal, and be publicly published—and be based on the reality of practice instead of idealized goals.[44]

The following proposed baseline targets for federal appellate circuit courts follow the first two recommended practices by evaluating the entire length of the appellate case process and provide measurement at established—and readily obtainable—case intervals. When combined with above Recommendation 1 to publish such results, the federal appellate courts would satisfy all three recommended best practices within the Model Time Standards for State Appellate Courts.

Determining an appropriate performance target, though, must be both realistically achievable and based on historical data to reflect actual activity within the courts. Because the five-year data analysis of the circuit courts shows that most courts are performing

42. *See id.*

43. *See generally* NAT'L CTR. FOR STATE CTS., MODEL TIME STANDARDS FOR STATE APPELLATE COURTS (2014).

44. *See id.* at 16–17.

consistently up to 80% of instances, an appropriate starting baseline could be derived from looking at the three-year average of the 80% performance level from all circuit courts for all time intervals.[45] The following table shows what such target levels look like based on data from FY 2021 through FY 2023.

Table 4. Proposed federal appellate court baseline performance targets for processing intervals

Interval	80% Baseline Performance Target (Days)
Opening	5
Briefing	288
Submission	337
Hearing	300
Termination	150
Total Case Processing	489

Using these baseline targets results in the comparative performance figures between circuit courts in FY 2023 shown in Table 5. So that the targets will stay relevant, these targets should be updated on a three-year basis to reflect changing practices and trends within local operations.

45. As with determining the 80% performance level for each court, averages were rounded down to the nearest whole number.

Table 5. Summary of federal appellate court performances baseline target performance

Interval	Circuit Courts Performing Within Target	Circuit Courts Performing Outside of Target
Opening	6 (46.2%)	7 (53.8%)
Briefing	6 (46.2%)	7 (53.8%)
Submission	10 (76.9%)	3 (23.1%)
Hearing	11 (84.6%)	2 (15.4%)
Termination	6 (46.2%)	7 (53.8%)
Total Case Processing	7 (53.8%)	6 (46.2%)

E. Recommendation 5: Expand Awareness of Quality Management Practices

Finally, most federal appellate courts have neither awareness nor application of quality management standards. With the range of judiciary-specific and other quality management resources available,[46] it is concerning that a significant majority of the federal circuit courts are neither aware of nor using these resources to improve their internal processes. Notably, there was minimal distinction between awareness and use of judiciary-specific resources and general resources, which means there is ample opportunity for the federal appellate courts to explore options in these areas.

The Federal Circuit, though, has been proactive in identifying and incorporating such practices toward improving the quality of its operations. The use of ANSI G1 has provided the Federal Circuit with a clear roadmap toward improving and standardizing its

46. *See* Perlow, *supra* note 8, at 53–56, 57–60.

operations during the past three years. Significantly, the Federal Circuit's validation in 2022 under ANSI G1 confirmed the effectiveness of its case processing system both internally and publicly. The Federal Circuit has continued with these efforts as seen in the results of this research—namely further advancement on the ANSI G1 maturity scale—as well as the increased statistical control of its processes over time.

As a best practice, federal appellate courts could make better use of existing quality management tools and standards to improve internal performance through greater operational control of processes. There was considerable variation between local practices in setting clear accountability and performance requirements, maintaining and updating requirements on a regular basis, and using these performance measurements to drive overall operational efficiency beyond individual performance concerns. Based on the Federal Circuit's experience and application of ANSI G1, managers and supervisors within court organizations can have a clear methodology to strengthen their everyday operational management. When coupled with a transparent scorecard mechanism, managers and supervisors can be incentivized to perform independent action to analyze and improve their work in a systemic way most likely to produce both quick results and minimize resistance often seen in earlier top-down directed quality management implementation in the public sector.

The established systematic approaches to developing processes and to deliver performance requirements, as seen in the use of ANSI G1, will provide courts with clear and consistent frameworks to provide structured quality management systems, which will likely result in tighter process controls that exist in the current environment. Because the effective implementation of any quality management system requires the use of quality tools and a focus on continuous improvement, courts will be better equipped to address process variances when they occur and—more importantly—to design their processes from the

beginning to eliminate or reduce the occurrence of these variances that adversely affect front-line performance.

The research and analysis in this Article were limited to an examination of federal appellate courts and their administrative handling of cases, but the findings and recommendations propose a new way of thinking about all federal court operations and performance management. Additional research is needed to consider performance standards, as well as the potential application and use of quality standards and performance measurements, for the other two types of federal courts: district and bankruptcy. Such work will require interested courts to decide to embrace adopting one or more of the quality practices recommended in this Article and a willingness to share their individual experiences with, and for the benefit of, the broader federal judiciary community.

APPENDIX: METHODOLOGY FOR USE OF THE MODEL CIRCUIT OPERATIONAL SCORECARD

Measurement	Purpose	Calculation
Total Case Processing Time	Provides the mean, median, and 80% performance levels across overall and the primary case performance intervals, which can be used for assessing court performance each year, the results of process improvements across case processing intervals, and benchmarking performance with other appellate courts.	Elapsed time in days from the notice of appeal to entry of judgment
Opening Interval		Elapsed time in days from the notice of appeal to docketing the new appeal
Briefing Interval		Elapsed time in days fom docketing the new appeal to the filing of the last brief
Submission Interval		Elapsed time in days from the filing of the last brief to submission to the panel (no argument held)
Hearing Interval		Elapsed time in days from the filing of the last brief to hearing before a panel (argument held)
Termination Interval		Elapsed time in days from either the submission date to the panel or the hearing date before the panel to the entry of judgment. If briefing was not completed, then the elapsed time from either the docketing of the new appeal or the end of briefing to entry of judgment.
Case Opening Accuracy	Provides the accuracy of the court's docketing and integrity of its records.	The average percentage of cases opened by all deputy clerks without any errors across a twelve-month period.

Measurement	Purpose	Calculation
Case Termination Accuracy		The average percentage of cases closed by all deputy clerks without any errors across a twelve-month period.
Key Performance Indicators Met (Q4)	Provides the ability of the court to meet its performance objectives tied to effective operations and customer requirements.	The percentage of key performance indicators that met minimum requirements out of the total key performance indicators during the last quarter of the year.
Overall Public Filing Compliance	Provides transparency of the treatment of public filings.	The average percentage of public filings that were compliant (i.e., did not require corrected filings) across a twelve-month period.
Public Service Satisfaction	Provides transparency of customer service interactions.	The average satisfaction score of public interactions across a twelve-month period. See Appellate CourTools M1 for an example.
Employee Satisfaction	Provides transparency of the court as an employer.	The average employee satisfaction score across a twelve-month period. See Appellate CourTools M5 for an example.
ANSI G1 Maturity Score	Provides external validation of the effectiveness of court services and operations.	The recent internal (or external) maturity level of case processing under ANSI G1.
IFCE Assessment Score	Provides transparency of court strategic planning efforts and maturation.	The total score on the most recent self-assessment of the International Framework for Court Excellence.