



Centers for Medicare & Medicaid Services eXpedited Life Cycle (XLC)



ANNUAL OPERATIONAL ANALYSIS (AOA) PROJECT MANAGEMENT PRACTICES GUIDE

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Document Purpose

This Practices Guide is a brief document that provides an overview describing the best practices, activities, attributes, and related templates, tools, information, and key terminology of industry-leading project management practices and their accompanying project management templates. This guide provides guidelines for performing an Annual Operational Analysis.

Background

The Centers for Medicare & Medicaid Services (CMS) eXpedited Life Cycle (XLC) is a framework to enhance Information Technology (IT) governance through rigorous application of sound investment and project management principles, and industry best practices. The XLC provides the context for the governance process and describes interdependencies between its project management, investment management, and capital planning components. The XLC framework establishes an environment in which CMS IT investments and projects consistently achieve successful outcomes that align with HHS' and CMS' goals and objectives.

The Operations & Maintenance Phase of the XLC requires that an Operational Analysis (OA) be performed annually to evaluate system performance, user satisfaction, adaptability to changing business needs, and new technologies that might improve the system. The results of the OA are documented in the *Annual Operational Analysis Report*.

OMB and HHS require that all steady-state projects, including the steady-state portion of Mixed Life Cycle investments, be reviewed at least annually to document their continued effectiveness in supporting mission requirements and minimizing the cost of asset ownership. The results of the OA must demonstrate whether or not the asset is meeting program objectives and the needs of the owners and users, as well as performing within baseline cost, schedule and performance goals.

Practice Overview

AOA is a method of examining the ongoing performance of an operating asset investment and measuring that performance against an established set of cost, schedule, and performance goals. It should trigger considerations of how the investment's objectives could be better met, how costs could be reduced, and whether the organization should continue performing a particular function. While great emphasis is often placed on meeting the budget, scope, schedule and goals during the requirements, design, development, test and implementation phases of an investment's life cycle, these costs are only a fraction of the asset's total life cycle costs. Ownership costs, such as operations and maintenance, including service contracts and

disposition, can easily consume as much as 80 percent of the total life cycle costs. As such, the periodic, structured assessment of the cost, performance, and risk trends over time is essential to minimizing costs in the operational life of the asset.

The AOA is conducted to determine: an investment's continued effectiveness in supporting mission and stakeholder requirements; evaluate the cost of continued maintenance support; manage risk; assess technology opportunities; and consider potential retirement or replacement. The results of this analysis are recommendations as to the asset's continued use, modification, or termination/replacement.

In addition to answering the typical performance measure questions of "Are we on schedule?" and "Are we within budget?", and in accordance with requirements set forth in OMB Circular A-11, the OA must report performance in four specific areas:

- **Customer Satisfaction.** Measures performance in terms of the extent to which the investment supports customer processes as designed. The focus is on how well the investment delivers the services it was funded to deliver (i.e., effectiveness), and considers stakeholder perception on whether the costs associated with providing the service is as low, to the customer, as it could be. Customer Satisfaction data is typically collected via surveys and measured via both quantitative and qualitative metrics.
- **Strategic and Business Results.** Measures the investment's impact on the performance of the CMS and HHS. These results provide a measure of how well the investment is meeting business needs, whether it is contributing to the achievement of CMS or HHS strategic goals, and whether it continues to be aligned with the CMS and HHS strategic direction.

Strategic and business results should be unique to an operational domain. For example, performance metrics associated with paying vendor invoices are relevant to the Finance operational domain. On the other hand, performance metrics associated with processing and managing grant applications are relevant to a research-oriented operational domain. Strategic and Business Result metrics must be designed to measure *the investment's* contribution to mission processes independent of other aspects of the process such as the individual competencies of the people performing the process.

- **Financial Performance.** Measures and compares current cost-related performance with the pre-established cost baseline. It also includes efficiency measures such as tracking actual costs of work performed against budgeted costs. While financial performance is typically reported as quantitative measures, the investment should also be subjected to regular reviews for cost effectiveness and efficiency.
- **Innovation.** Addressing innovation provides an opportunity to conduct a qualitative analysis of the investment's performance in terms of the three previously mentioned areas – *Customer Satisfaction, Strategic and Business Results, and Financial Performance*. It should demonstrate the extent to which the project team is tracking emerging technologies and performing ongoing analyses of alternatives for achieving the same or better customer results and strategic goals at better cost, performance, and risk levels than the current solution. This qualitative assessment should also demonstrate the investment's ability to meet emerging requirements and support long-term strategic objectives given its engagement with strategic planning activities and its technical architecture

Business owners, project/investment managers, other stakeholders, and IT governance bodies all have an important role in the OA process. Roles and responsibilities include:

- Business Owner: Schedules the AOA and provides guidance to the Investment Manager.
- Investment Manager: Prepares or coordinates execution of the AOA.
- Independent Auditor: If engaged by the Investment Manager, prepares the AOA.
- IT Governance: Receives and analyzes the Annual Operational Analysis Report.
- IT Investment Review Board (ITIRB): Reviews the Annual Operational Analysis Report and makes recommendations for disposition of the investment.

CMS requires that an operational analysis be conducted annually after a system, or the steady-state component of a mixed life cycle investment, has been released to production. Recommendations resulting from the AOA should be consolidated into the project's Operations & Maintenance Manual. This manual should be continuously reviewed and updated as the results of annual OAs dictate.

Best Practices

The following are best practices for conducting an AOA:

- *Read the Capital Programming Guide* (a supplement to OMB Circular A-11, Part 7). OMB has modified the requirements for Management-In-Use reviews.
- *Timing*: While the performance of steady-state investments should be monitored and recorded on an ongoing basis, full-year performance results across each of the four areas identified in the Practice Overview section should be documented, summarized, and used to inform ongoing decisions. Doing so will help to inform investment decisions with actual performance data that reflects the investment's continued effectiveness in supporting mission requirements, and to minimize the cost of asset ownership. These same performance and summary results are required to be reported to OMB annually. OMB may also request the complete OA document to validate the reported summary results.
- *Define The Performance Measurement Methodology in Advance*. The methodology for how performance will be measured, analyzed, and reported should be developed even before the capital investment is funded. At a minimum, the methodology should include definitions of the measurement indicators (i.e., metrics), mappings to strategic goals and objectives (and the OMB Exhibit 300), data collection and record-keeping procedures, and methods for analysis. Further, this methodology should be standard across all CMS investments to ensure consistency in what is reported and how it is reported; and in the investment's Operations & Maintenance manual. Once developed, the methodology should be documented and communicated to all relevant stakeholders to avoid haphazard, incomplete, or inconsistent reviews (across investments). The methodology should provide a notional schedule and suggested roles and responsibilities.

- *Document Baseline Performance Levels.* The best time to establish a baseline is during the 6 to 12 months prior to implementing the new investment. Baseline performance levels provide appropriate comparison points to analyze investment improvements or degradation. The baseline should include performance, cost, and schedule measures, and be consistent with what is reported in the OMB Exhibit 300 and 53.
- *Keep Records Up-to-Date.* To track performance trends, performance results must be recorded and retained on an ongoing basis. Much of the data should be maintained at least quarterly—and can be integrated with other status reporting requirements.
- *Consider Business as Well as Technology Issues.* The primary purpose of technology is to improve business performance in the most cost-efficient manner practicable. Since government operations and enables program mission will change over time, it is important to analyze how well the investment is aligned with the changed (current and future) requirements.
- *Keep the Exhibit 300 current.* Reviews will yield updated information about the investment’s performance. As such, OMB budget documents should be maintained accordingly.
- *Involve the Perspective of All Stakeholder Groups in Reviews.* Stakeholders often have outstanding observations and suggestions during the review process. Best practices suggest incorporating stakeholder input in group meetings whenever practical, because face-to-face dialogs will often address important topics not considered when developing questionnaires or other structured data collection formats.
- *Be Open Minded About Change.* All options should be considered—modifying the system, outsourcing it, replacing it, merging it with other systems, and decommissioning it. Because the investment was a good fit five or ten years ago does not necessarily mean that it still aligns with the agency’s priorities or even represents the best alternative to meet the mission need.
- *Document Gaps.* The OA may identify previously unknown strategic or tactical gaps. Strategic gaps include misalignment with CMS’ strategic goals, performance plan, and EA (as-is, transition, and to-be). Tactical gaps may involve changes to address risk, security, technological, or integration issues.
- *Take Action.* The payoff for conducting a review is to take action—make decisions that improve the effectiveness and cost efficiency of IT in support of the agency mission. A Corrective Action Plan (CAP) table may be appropriate with actions, milestones, assigned responsibility, and scheduled completion dates. In some cases, action will cost little or nothing (or maybe even save money!). In other cases, there may be a decision to revise the investment’s scope, schedule, or costs in the next available budget cycle or to address the exposed risk, security, technological, or integration issues.
- *Take Advantage of Lessons Learned.* The entire agency can benefit from the lessons learned by a thorough review, and the findings can improve future planning, acquisitions, and operations and maintenance. Ideally, there should be a common repository where all can benefit.

Practice Activities

The following processes reflect the high-level activities performed in executing an OA. It is important to note, that while the OA report is produced on an annual basis (in accordance with the XLC methodology), performance monitoring and data collection is an ongoing activity. Additionally, these are high-level activities. When performing them, you should leverage existing, tactical/operational level processes and tools *to the extent appropriate*.

- **Define Performance Metrics.** Identify and define the specific metrics that will be used to measure investment performance. These metrics should align with the four performance areas identified in the *Practice Overview* section and the investment’s Exhibit 300 as appropriate/available. Metric definitions, at a minimum, should include:
 - Name
 - Description (what does it measure)
 - Data elements needed to calculate the metric
 - Data collection methodology (describe how the data elements are collected)
- **Set Performance Targets.** During this process baseline performance levels are measured and recorded for each metric defined in the “Define Performance Metrics” process; and desired performance levels for each metric are developed. Target levels should be informed by the current baseline, any *applicable* peer benchmarks, what is documented in the business case (if available), previous Exhibit 300s, and the *Operations & Maintenance Plan*.
- **Record Performance Data.** Actual performance data is collected and recorded on an ongoing basis during the course of normal investment operations and maintenance and PM activities. The frequency of recording is driven by the specific metric data being collected. For example, system monitoring tools capture and record system performance information such as availability and workload (i.e., transaction volume) on a constant basis. On the other hand Stakeholder satisfaction data is captured and recorded when a satisfaction survey is administered; and PMs may track and record budget expenditures on a weekly or monthly basis. Independent of how often performance data is captured and recorded, the most important factor of this process is that the data is captured and recorded in some type of repository so that it can be easily collected and analyzed at the time of reporting.
- **Analyze and Report System Performance.** Performance data is collected and analyzed to determine actual performance levels. Additionally, qualitative assessments of project team activities are performed to gauge the extent to which innovation is occurring (see the *Practice Overview* section). Examples of this qualitative assessment *may* include asking PMs to respond to a short questionnaire, conducting interviews with project teams, or examining project deliverables and work products (e.g., the updated Exhibit 300, analyses of alternatives, etc.). After the analysis is performed, the results are published in the OA report (i.e., the *Annual Operational Analysis* deliverable) and in any other reporting tools that CMS uses (e.g. Dashboards and Scorecards). When performing this analysis and preparing the *Annual Operational Analysis* deliverable, the following activities should be considered:

- Perform Mission Analysis. Describe how the investment supports CMS' and the Department's Mission, Goals, and Objectives. Establish the level of functionality and performance provided by the existing investment. Describe how this investment continues to close, in part or in whole, identified performance gaps.
- Analyze Customer Satisfaction. Develop a strategy to solicit and document customer or user feedback and new requirements. The results of periodic surveys, focus groups, or user group meetings are often assessed. Also examine usage trends, system reports, and change order requests – these can give insight into emerging requirements. Summarize and categorize the information into either performance needs or new functional requirements.
- Perform Operational Analysis. Identify solutions that might provide the needed functionality or performance (or indicate that the investment is already scheduled for replacement or retirement). Alternative solutions may include designing new processes, implementing systems and technologies compliant with the CMS' and Department's Enterprise Architecture (to-be, transition, and as-is), or collaborating with other initiatives within the federal government. Recommend if the existing system should be a) continued with no additional investment, b) enhanced, c) terminated, or d) migrated to a similar system and retired.
- Perform Gap Analysis. Report Performance Goals and Measures and Cost and Schedule Performance variances based on information provided in the project planning documents such as the Business Case. Explore the root causes of any gaps so they can be corrected. Identify what, if any additional functionality or performance is required. If the investment is already scheduled for replacement or retirement, name the investment(s) that will support the requirements in the future.
- **Support Decision Making.** OA results are provided to the appropriate IT governance bodies (IT investment managers and decision makers) via current IT governance mechanisms. These results should include an assessment and decision recommendations from an objective stakeholder (for example a review/analytical board comprised of Critical Partners). It is common practice to further analyze the performance of those investments that exceed pre-specified performance thresholds (e.g., 10% over budget, 10% under the amount of work it was intended to enable, etc.)

Practice-Related Templates, Tools, and Information

- HHS OCIO Policy for Information Technology (IT) Capital Planning and Investment Control (CPIC), dated December 30, 2005, provides additional guidance concerning the OA.
<http://www.hhs.gov/ocio/policy/2005-0005.001.html>
- Capital Planning and Programming Guide, V.2, Supplement to OMB Circular A-11, Part 7 – Planning, Budgeting, Acquisition, and Management of Capital Assets, June 2006, provides specific guidance for conducting an OA and documenting results in the Exhibit 300.
http://www.whitehouse.gov/omb/circulars/a11/current_year/part7.pdf
- Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity, GAO-04-394G, dated March 2004, addresses the need for Steady State investments to

“maintain approved project management plans that include expected cost and schedule milestones and measurable benefit and risk expectations.”

<http://www.gao.gov/new.items/d04394g.pdf>

- NOAA Operational Analysis guidance
http://www.cio.noaa.gov/Policy_Programs/itcap_oa.html
- OMB Circular A-11 – Management-in-Use
<http://www.whitehouse.gov/omb/circulars/a11/capman.pdf>

Practice Key Terms

Business Owner or System Owner	Coordinates with the Investment Manager to schedule the Operational Analysis and provide guidance to the Investment Manager
OMB Circular A-11-Management-in-use	This phase includes the steps an agency should take to manage and evaluate the continued viability of an acquired capital asset as part of the agency portfolio.
Steady State	The operations and maintenance phase of a system or program, the ongoing post-implementation maintenance of a system.