



Managing Capital Investments at the Indian Health Service

A “How-To” Guide for an Operational Analysis

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Document Change History

Version Number	Release Date	Summary of Changes
1.0	December 30, 2012	Initial release
2.0	May 2013	Add additional interview guidance questions; add Appendices for Report Table of Contents, Approval Page, and GAO Criteria; expand sections to clarify report information; and add OA Lite Section

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Conducting an Operational Analysis

PURPOSE

This guide is intended for use by Indian Health Service (IHS) Investment Managers and application managers to conduct an Operational Analysis (OA) during the steady-state phase of their investment or application. The purpose of this guide is to provide a basic, easy, step-wise method for conducting the Operational Analysis; a method that is consistent with federal, Department of Health and Human Services (HHS) and IHS requirements.

The principal assumptions of this guide are that an Operational Analysis should not be a costly undertaking and should not be time-consuming, but that it should meet the letter and intent of the Office of Management and Budget (OMB) and HHS guidance for an Operational Analysis and that it should be a useful document to the investment or application manager. The document may also be useful in developing the IHS strategic plan. Although not intended to be used to compare one steady-state application to another, this Operational Analysis methodology does prescribe common customer-derived metrics to be collected for all steady-state applications.

The guide is divided into four sections. This is the first section—Purpose. The second section—The Basics—provides the background and explanation for the Operational Analysis. The third section—The Analysis—describes the process and contents of the Operational Analysis. The fourth section—Contact Information—provides information on contacting the IHS Capital Planning and Control (CPIC) Manager for further assistance in conducting an Operational Analysis.

Appendix A contains a list of acronyms. Appendix B and Appendix C each contain sets of questionnaires that can be used to lead interviews to gather data for the Operational Analysis. Appendix D is a set of user questions that can be used to determine user satisfaction, using a data collection tool such as *Survey Monkey*[™]. Appendix E contains an example report table of contents and Appendix F contains an example approval page for the report.

An IHS Operational Analysis Report that can be used as a guide can be obtained from the IHS CPIC Manager, Carl Gervais:

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THE BASICS

WHAT IS AN OPERATIONAL ANALYSIS?

OMB has defined an Operational Analysis as follows:

“Operational analysis 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. An Operational Analysis is, by nature, less structured than performance reporting methods applied to developmental projects and 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 Acquisition Phase, developmental costs are only a fraction of the asset's total life-cycle costs. Operations is a critical area where improved effectiveness and productivity can have the greatest net measurable benefit in cost, performance, and mission accomplishment. A periodic, structured assessment of the cost, performance, and risk trends over time is essential to minimizing costs in the operational life of the asset.

Beyond the typical developmental performance measures of cost and schedule performance, an Operational Analysis should seek to answer more subjective questions in the specific areas of:

- Customer Results
- Strategic and Business Results
- Financial performance
- Innovation”¹

During the development, modernization, or enhancement (DME) phase of an application, the primary method of evaluating a project is earned value management (EVM), whereby actual cost and actual schedule of completion of milestones are evaluated against a planned baseline. Operational analysis is an investment-specific or application-specific evaluation for systems in operation. It provides an annual check point for determining the extent to which a steady-state IT application maintains alignment with mission priorities and delivers services at required service levels, a reasonable cost, and appropriate levels of risk.

¹ *Capital Programming Guide V3.0*, Supplement to OMB Circular A-11, Part 7, “Planning Budgeting and Acquisition of Capital Assets, July 2012, p.44.

WHY CONDUCT AN OPERATIONAL ANALYSIS?

The Office of Management and Budget (OMB) Circular A-11 requires major IT investments conduct an OA when some portions of work are considered technology refreshment, steady-state (SS), or operations and maintenance (O&M).²

The objectives of an Operational Analysis are to:

- Demonstrate that the existing investment is meeting the needs of the Agency, delivering expected value or that the investment is being modernized and replaced consistent with the Agency's Enterprise Architecture; and
- Identify smarter and more cost-effective methods for delivering performance and value.³

Operational analysis is a key practice within the Government Accountability Office's (GAO) Information Technology Investment Management (ITIM) Stage 2 maturity model. The GAO states:

“After deployment, a system's success is measured by its ability to continually meet a business or user need. The length of the period for collecting IT system data prior to review and analysis varies from one organization to another. An organization could, for example annually review one-third or one-half of its operational IT systems. Another organization could decide to review all operational IT systems every 3 years. The essential point is that operational IT systems are investments that need to be reviewed on a regular basis to ensure that they are still providing value to the organization in a cost-effective and risk-insured manner.”⁴

HHS requires an annual Operational Analysis as a deliverable as part of the Enterprise Performance Life-cycle (EPLC) Framework. “The Annual Operational Analysis combines elements from the CPIC evaluation and results from monitoring the performance of the Business Product during normal operations against original user requirements and any newly implemented requirements or changes.”⁵

Other than being required, a regular assessment of an operational system is good business practice. An Operational Analysis includes:

² The terms “steady-state” and “operations and maintenance” are often used synonymously.

³ *Capital Programming Guide V3.0*, Supplement to OMB Circular A-11, Part 7, “Planning Budgeting and Acquisition of Capital Assets,” July 2012, p.43.

⁴ *Information Technology Investment Management, A Framework for Assessing and Improving Process Maturity*, GAO-04-394G, March 2004.

⁵ *Enterprise Performance Life-cycle Framework Overview Document*, Department of Health and Human Services, Office of the Chief Information Officer, January 2010, p 64.

- Determining if the system is still delivering the services that it was intended to deliver and whether it continues to provide the desired results
- Determining if capabilities could be more effectively provided through other existing internal or external alternatives
- Identifying improvements in the operation, maintenance, and management of the system.

WHEN SHOULD AN OPERATIONAL ANALYSIS BE CONDUCTED?

An Operational Analysis should be conducted after an application is implemented and is in steady-state operations and maintenance. A system that is in mixed life-cycle may conduct an Operational Analysis on those applications that are in the steady-state life-cycle phase or may opt to conduct an analysis of alternatives to evaluate other functional options.

Normally, a post-implementation review (PIR) should be conducted within six months after a project is implemented, and the conduct of a PIR may be part of the exit criteria for transferring a project from the Development, Modernization or Enhancement (DME) life-cycle stage to the Steady-State (SS) operations life-cycle stage. The results of the PIR or any prior operational analyses should serve as the basis for the current Operational Analysis.

HOW FREQUENTLY SHOULD AN OPERATIONAL ANALYSIS BE CONDUCTED?

In general, an Operational Analysis should be conducted annually, but must be conducted at least every 18 months.

The Government Accountability Office's (GAO) states “...*operational IT systems are investments that need to be reviewed on a regular basis to ensure that they are still providing value to the organization in a cost-effective and risk-insured manner.*”⁶

HHS states “The IT Investment manager shall conduct an *annual* operational analysis (OA) for each Steady-state IT Investment or for each Steady-state portion of a Mixed Life-cycle IT Investment to assess the extent to which the IT Investment or operational portion of the IT investment continues to deliver anticipated benefits effectively and efficiently.”⁷ However, at this time, the HHS CIO review criteria for the OMB Dashboard requires that an OA be conducted

⁶ *Information Technology Investment Management, A Framework for Assessing and Improving Process Maturity*, GAO-04-394G, March 2004.

⁷ *HHS-OCIO Policy for Information Technology Performance Baseline Management*, Department of Health and Human Services, HHS-OCIO-2010-0007, December 22, 2010

only every 18 months. This allows time for recommendations from the previous OA to be implemented prior to the start of a new OA.

The rigor or degree of the OA may vary from year to year. The Investment Manager or the Application Manager may determine that events have not changed significantly since the last full Operational Analysis was conducted. In that event, an update to the prior full Operational Analysis may be appropriate, called an OA Lite. The concept of an OA Lite is discussed in a later Section.

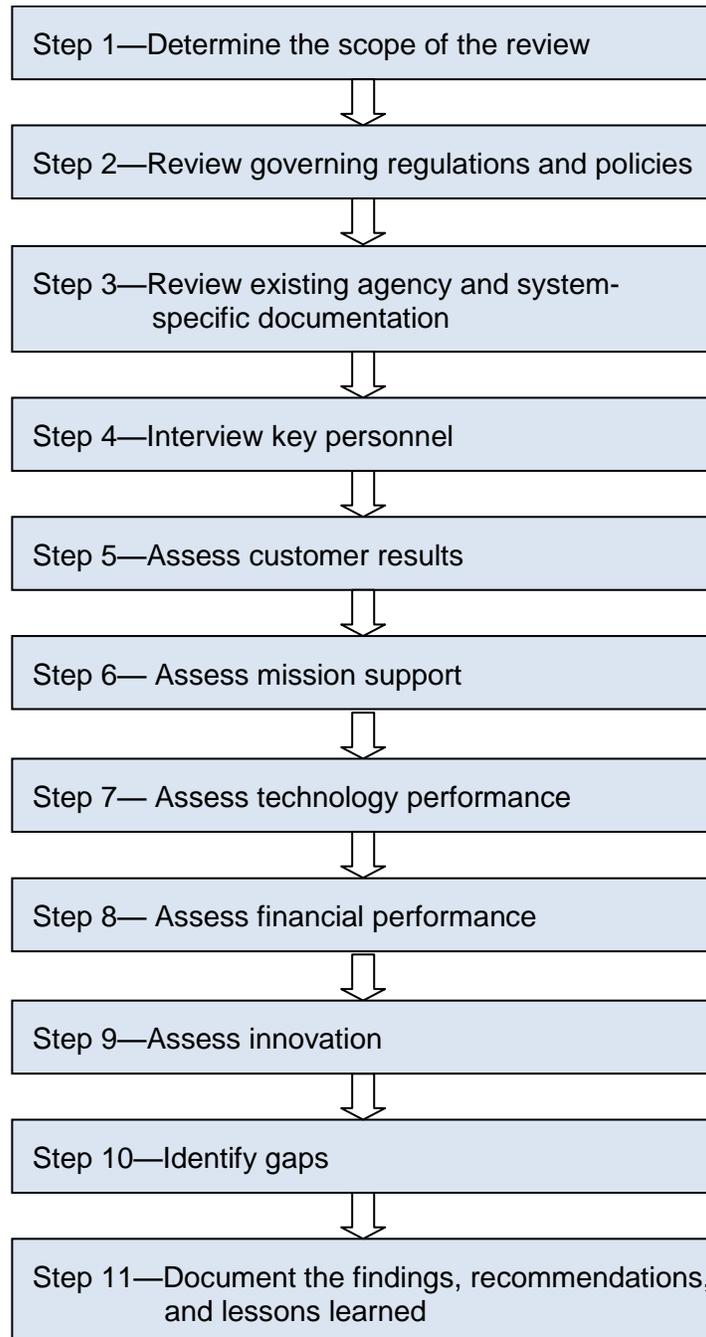
WHO CONDUCTS THE OPERATIONAL ANALYSIS?

The Operational Analysis is normally the responsibility of the Investment Manager and the supporting Program Management Office (PMO), but may be conducted by an independent assessment group such as an agency task force or a contractor.

THE ANALYSIS

The 11 steps for conducting the Operational Analysis are shown in Figure 1 and explained below.

Figure 1. Steps for Conducting an Operational Analysis



STEP 1—DETERMINE THE SCOPE OF THE REVIEW

The review may consist of the investment in its entirety or any part of the information technology investment. If an OA is to be conducted on a suite of applications, consider an analysis on a particular function of an investment, such as practice management or population health. This way, the analysis would provide meaningful information for an entire function highlighting technology and business processes. “

STEP 2—REVIEW GOVERNING REGULATIONS AND POLICIES

The most pertinent documents to be reviewed include the following or their updates:

- *Capital Programming Guide V3.0*, Supplement to OMB Circular A-11, Part 7, “Planning Budgeting and Acquisition of Capital Assets,” July 2012.
- *Information Technology Investment Management, A Framework for Assessing and Improving Process Maturity*, GAO-04-394G, March 2004.
- *HHS-OCIO Policy for Information Technology Performance Baseline Management*, Department of Health and Human Services, HHS-OCIO-2010-0007, December 22, 2010.
- *Standard Operating Procedure for Enterprise Performance Life-cycle Framework*, Indian Health Services Office of Information Technology, CPIC-SOP-10-09, Version 2.0, June 2011.
- *Enterprise Performance Life Cycle Framework Practices Guide, Annual Operational Analysis*, Department of Health and Human Services, Undated.
- *Enterprise Performance Life Cycle Framework Checklist, Annual Operational Analysis*, Department of Health and Human Services, Undated.
- *Agencies Need to Strengthen Oversight of Billions of Dollars in Operations and Maintenance Investments*, GAO-13-87, October 2012.

It also may be worthwhile to review guidance and reports from other agencies.

STEP 3—REVIEW EXISTING AGENCY AND APPLICATION-SPECIFIC DOCUMENTATION

Review of the following documents or web sites should assist in the review if they are available:

- Most recent investment OMB Circular A-11 Exhibit 300
- OMB Dashboard results at <http://www.itdashboard.gov/>
- Most recent business case for the application
- Service level agreements
- Post-implementation review results
- Prior operational analyses of the application
- Department and agency-level Enterprise Architecture (EA) artifacts, particularly if the Agency Enterprise Architect is unavailable for an interview.
- Information Technology Strategic Plan
- Results from tools assessing application customer satisfaction (e.g. customer satisfaction surveys, minutes from user group meetings, results from customer focus group, review of help desk logs, etc.)
- Contractor status reports (particularly EVM reports on status of meeting cost and schedule goals).
- Internal controls reports
- Operations and maintenance plans/configuration management plans
- Mission needs statement, requirements analysis, or any other documentation that identifies a need for the current functionality and/or performance for the system(s)
- Alternative analysis (at application level, if available)
- Current application baseline for costs and schedule (including current year and prior year of O&M)
- Actual application costs and schedule (including current year and prior year of O&M)
- Budget/accounting reports of actual costs for the application(s)
- Security incident reports (e.g. breach notifications)
- Security Plan of Action and Milestones (POA&M)
- Helpdesk Expert Automation Tool (HEAT™) Reports

Not all documents will be available (e.g., there may be no internal control reports). The purpose of the document review is to save time in the interview process and have support for findings and recommendations.

STEP 4—INTERVIEW KEY PERSONNEL

A representative sample of the user population should be surveyed.

The following key personnel should be interviewed:

- Investment or program manager
- Application manager(s)
- Enterprise Architect
- Help desk personnel
- Application Information System Security Officer (ISSO)
- Agency Internal Controls Officer

The following key personnel may be interviewed:

- Application business owners/sponsors
- User board representative(s) and/or other key users
- Chief Technology Officer (CTO)
- Others, as proposed by the investment manager or the application manager.

The application business owner/sponsor should be interviewed if available, but may be at too high a level to be interviewed (e.g., Agency Chief Medical Officer).

A user board representative and/or other key users should be interviewed if the investment manager elects to not survey the general user population..

Guides with possible questions to assist in these interviews are provided in Appendix B and in Appendix C. Normally, the internal control officer can be informally interviewed by e-mail to determine if there are any findings related to the investment. Interviews are best conducted by a minimum of two-member teams – one person to lead the interview and one person to take notes.

A sample survey questionnaire is presented in Appendix D.

STEP 5—ASSESS CUSTOMER RESULTS

In addressing customer results, the analysis should focus on whether the investment supports customer processes as designed. The focus is on how well the investment is delivering the goods or services it was designed to deliver. It should answer such questions as the following:

- Are operational costs to the customer as low as they could be for the results delivered?

- Is the asset meeting performance goals established during the Selection and Planning Phases?
- Is the asset continuing to meet stakeholder needs?
- Does the asset support customer processes as designed and is it delivering the goods and services it was designed to deliver? - GAO cited factor

As broad a representation of users as possible should be surveyed. A guide with possible questions to assist in the survey is provided in Appendix D. Survey forms may be used since personal interviews are time-consuming and expensive. However, if the user population is small, personal face-to-face interviews can be more productive in obtaining information that is not on the interview questionnaires or to avoid asking redundant questions or collecting self-evident information. Personal face-to-face interviews allow the interviewer(s) to ask follow-up questions on areas that come to light during the interviews. Follow-up interviews may be necessary to get a good representative sample of user application satisfaction.

It is important to document how customer or user requirements are captured. Periodic surveys, focus groups, or user group meeting minutes are often used. Although the purpose of the OA is not to be an updated source of requirements, discussing requirements is important to ascertain how well the application is satisfying its defined functional purpose and how satisfied the customers are with the requirements change management process. With the implementation of the Helpdesk Expert Automation Tool (HEAT™), the Help Desk has a customer satisfaction survey tool that can generate reports. The tool may be able to generate reports on the types of issues that are being reported to the help desk by the customer. This may be another exploratory tool that can be used to support the analysis of customer satisfaction in the OA. In the process of obtaining this data, additional requirements may be identified that are not being satisfied by the current application requirements management process.

Conducting a user/customer survey, using a vehicle such as the Survey Monkey™ tool, is probably the best way to collect the data used to assess the user/customer satisfaction. Other ways may include assessing comments and user/customer community inputs or analyzing usage trends. Some or all of these activities may be beneficial in determining continued support for the application, additional user/customer needs, or improvement opportunities. This information also should be used to assess and update the investment's performance measures.

STEP 6—ASSESS MISSION SUPPORT

Mission Support measures the effect the investment has on the performing organization itself, and should provide a measure of how well the investment

contributes to the achieving the organization's strategic goals. It should answer such questions as the following:

- Is the asset performing in accordance with the sustainable design?
- Does the asset continue to meet business needs and contribute to the achievement of the organization's current and future strategic goals and business needs? - GAO cited factor
- What is the effect that the asset has on the performing organization itself? - GAO cited factor
- Should the agency revisit alternative methods for achieving the same mission needs and strategic goals? - GAO cited factor
- Does the asset overlap of the investment with other systems? - GAO cited factor
- Is there a need to redesign, modify, or terminate the investment? - GAO cited factor

The mission support assessment is conducted to determine if the application is continuing to meet mission requirements and needs and to determine if it supports the IHS's and HHS's evolving strategic direction. The original mission needs statement or the requirements analysis provides a framework to assist in the mission analysis for the Operational Analysis. The mission analysis should include an analysis of the satisfactory accomplishment of project sponsor-required and customer-required performance measures. It is how we determine if the investment is achieving its desired strategic and business results

The mission support assessment should also describe how the investment supports the four IHS Director's priorities and the IHS OIT goals and objectives, as described in the OIT IT Strategic Plan.⁸ It should also address support of Administration initiatives (e.g., the 25 Point Implementation Plan to Reform Federal Information Technology Management). It should establish the level of functionality and performance provided by the existing investment.

The OMB Circular A-11 Exhibit 300 performance measurement results and the interviews with the Investment Manager, the Sponsor, and the Application Manager should provide sufficient information to assess the mission support.

STEP 7—ASSESS TECHNOLOGICAL PERFORMANCE

In parallel with conducting the customer satisfaction assessment, which may take several weeks, the technology performance assessment should be conducted. The

⁸ <http://www.ihs.gov/oit/documents/FY2011-2015%20OIT%20IT%20Strategic%20Plan.pdf>

Investment Manager, the Application Manager, and the Enterprise Architect are the primary sources of information to assess the continuing ability of the investment to meet the application's performance goals. However, the interview forms also provide customer feedback on the efficiency, effectiveness, maintainability, availability, reliability, productivity of the applications, which should assist in the assessment.

This assessment should answer such questions as the following:

- How is the asset performing relative to its performance goals? - GAO cited factor
- How does current performance compare with pre-established cost baseline and estimates? - GAO cited factor
- What is the status of the risks identified in the investment's planning and acquisition phases? - GAO cited factor

Guidance from OMB states that there are two essential types of operations metrics to be reported:⁹

- **Results Specific:** There should be two metrics that measure the effectiveness of the investment in delivering the desired service or support level; if applicable, at least one metric should reflect customer results (e.g.; "Service Quality").
- **Activities and Technology Specific:** There should be a minimum of three metrics that measure the investment against its defined process standards or technical service level agreements (SLAs) (e.g.; "Reliability and Availability"). At least one of these metrics must have a monthly "Reporting Frequency."

Results specific metrics should be appropriate to the mission of the investment and its business owner or Customer. Generally these metrics should be provided by the investment's business owner and will reflect performance in the broader business activities, rather than IT-specific functions. The best results-specific metrics will support the business case justification and could be the foundation of a quantitative approach to defining benefits in a cost-benefit analysis. Unlike private industry where identified benefits accrue to the organization, government benefits may accrue to the public. Therefore, results-specific metrics may demonstrate the value realized external to the Federal Government.

The Investment Manager, the Application Manager, and the Enterprise Architect also can assist in assessing the technology and determining potential opportunities

⁹ See the FEA Reference Model Mapping Quick Guide at the OMB web site for more information on required performance measures.

to improve performance, reduce costs, support the IHS enterprise architecture, and ensure alignment with IHS's strategic direction. The Investment Manager monitors and maintains the existing technology and determines technology refresh schedules.

The Enterprise Architect can provide information pertaining to how well the existing application or suite of applications is meeting the strategic needs of the agency.

An assessment of security should also be performed as part of the technology assessment and risk assessment. The ISSO can provide information on any security concerns with the application, what the remedial action plan is, and how well the application is following that plan.

STEP 8—ASSESS FINANCIAL PERFORMANCE

In measuring the financial performance of a steady-state investment, the Operational Analysis should compare current performance with a pre-established cost baseline. It should answer such questions as the following:

- Are annual operating and maintenance costs comparable to the estimates developed during the Selection, Planning, and Budgeting Phases?
- Are there smarter or more cost effective ways of deliver the functionality?
- How do the current costs compare against the planned-life cycle cost?
- GAO cited factor
- Is the project on schedule? - GAO cited factor
- Did the investment have a cost or schedule variance? - GAO cited factor

Most project managers do not use earned value management for investments in steady-state maintenance. It provides little value and OMB does not require it. However, if earned value management is use and cost or schedule variances are a negative 5% or more, explain the reason for the variance. Discuss the actions that will be taken to correct the variances, the risk associated with the actions, and how close the planned actions will bring the investment to the original baseline.

If earned value management is not employed and there is an operations and management plan or configuration management plan, it can be reviewed to determine if there is a schedule variance. If there is no project schedule, it can be assumed that the project is on schedule.

There should be a spend plan. If the project manager receives cost reports, then those reports can be reviewed to determine if the there is a cost variance. In

addition,, prior OMB Circular A-11 Exhibit 300s can reviewed to assure that the actual costs are consistent with planned costs.

The internal controls officer can provide information on any financial concerns with the system, what the remedial action plan is, and how well the system is following that plan. The internal controls officer in IHS is the Director, Management Policy and Internal Controls Staff.

STEP 9—ASSESS INNOVATION

Innovation is the process of providing a different method, developing a different approach, or using different technology to more effectively or more efficiently meet mission requirements. Addressing innovation in the operational analysis is an opportunity to conduct a qualitative analysis of the investment's performance in terms of the three previously mentioned areas. It also demonstrates that the agency is tracking emerging trends in technology and has revisited alternative methods for achieving the same or better customer results and mission needs and strategic goals at better cost, performance, and risk levels than the current solution. Assessing innovation is probably the hardest part of the assessment. Innovative efforts might include transitioning to cloud computing, consolidating data processing facilities, transitioning to a web-centric environment, repurposing existing data, or other OMB or HHS mandated initiatives. The survey forms for all interviewees include their assessment of how innovative the investment and the applications are.

This section should answer such questions as the following:

- Are there any areas for innovation in the areas of customer satisfaction, strategic and business results, and financial performance? - GAO cited factor
- Are there any issues such as greater utilization of technology or consolidation on investments to better meet organizational goals? - GAO cited factor
- Is there a need for improved methodology (i.e. better ways for the investment to meet cost and performance goals)? - GAO cited factor

STEP 10—IDENTIFY GAPS

After assessing the various areas of performance in the steps above, it is important identify any gaps in the performance of the investment or the application.

Examples of gaps include:

- Failure to provide desired functionality
- Failure to meet performance requirements, either technical or financial

- Inadequate information and computer security
- Poor customer satisfaction
- Misalignment with IHS strategic goals and objectives
- Non-compliance with the Enterprise Architecture

Based on the customer and user requirements and the cost, schedule and performance variance analyses, discuss the root cause of any gap. Identify what, if any, additional functionality or performance is required.

STEP 11—DOCUMENT THE RESULTS

The results of the Operational Analysis should be documented in a briefing and/or a report, depending upon the Investment Manager's preference. In this section we document the findings, recommendations, and lessons learned.

The findings summarize the results of the gap analysis. They provide the basis for the recommendations. One of the findings should address if the asset had a cost or schedule variance. - GAO cited factor

The recommendations should identify solutions that can provide the needed functionality or performance. This may include designing new processes, implementing technologies compliant with the Department's Enterprise Architecture, or collaborating with other initiatives within the federal government.

Among the areas that this section must address are the following:

1. Specifically recommend if the existing application should be a) continued with on-going maintenance; b) continued with no additional investment; c) redesigned, modified, or enhanced; d) terminated, or e) migrated to a similar application and retired – GAO cited factor.
2. Indicate if the initiative was evaluated and chosen or not chosen to participate in one of the Federal initiatives (e.g., opportunities for shared services, data center consolidation, or implementation of cloud computing), whether it will be evaluated by the end of the budget year, or if it will not be evaluated by the end of the budget year.
3. Recommend whether or not to redesign or modify the asset before it becomes a problem - GAO cited factor.

The lessons learned (GAO cited factor) should provide any lessons learned that may be applicable to other investments, such as why the problems occurred or how the savings were realized. The entire agency can benefit from the lessons

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learned by a thorough review, and the findings can improve future planning, acquisitions, and operations and maintenance.

A report or briefing is a required artifact of this process.

OA LITE

An Operational Analysis should be performed annually, or at least every 18 months. The Investment Manager or the Application Manager may determine that events have not changed significantly since the last full Operational Analysis was conducted. In that event, an update to the prior full Operational Analysis may be the appropriate approach. This is called an OA Lite.

The OA Lite updates the prior assessment of how well an application is meeting program objectives and customer needs, and whether it is performing within baseline cost, schedule, and performance goals. An OA Lite meets with the letter and intent of OMB and HHS guidance, meets management needs, and is cost effective.

Although an OA Lite may be performed to satisfy the requirements of OMB and HHS, a full Operational Analysis, as defined in the previous section, should be performed at least every three years.

An updated report or briefing, as it was with the full Operational Analysis, is a required artifact of this process.

There are two types of an OA Lite discussed in this section, a minimum OA Lite and an expanded OA Lite. In both cases, the text of the updated report would essentially stay the same as the prior OA, with only minor changes to explain that it is an update of the prior OA to report on the status of the recommendations. The findings would essentially stay the same. The recommendations section would state what each of the original recommendations was and its current status. It would also report on the changes, updates, and improvements that came about because of the findings of the original OA. Any updates to the lessons learned should also be noted.

An updated report or briefing is a required artifact of this process.

MINIMUM OA LITE

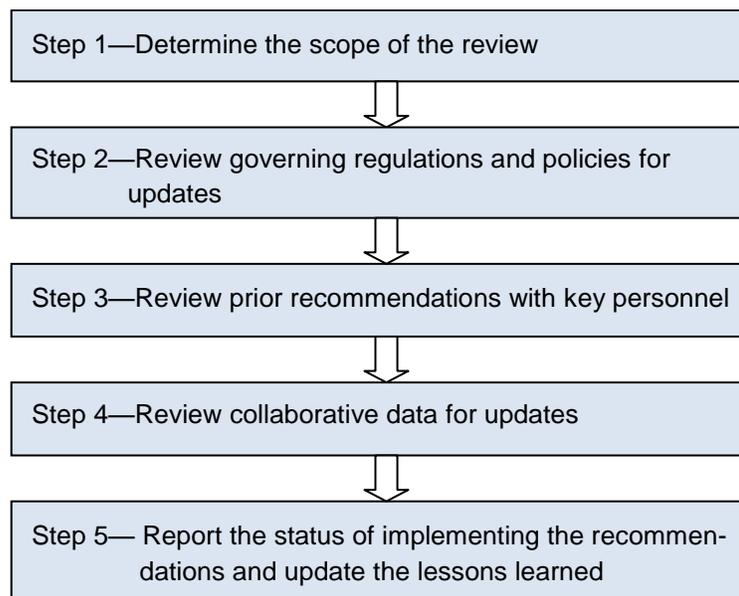
A minimum OA Lite simply provides an update report on the investment's progress in implementing the recommendations of the prior Operational Analysis. This information is primarily obtained by an update from the investment or application manager.

Collaboration information may also be obtained from other sources, such as a review of the investment's performance presented on the OMB IT Dashboard, at

<http://www.itdashboard.gov/>. The investment/application manager should be able to provide any collaborative source of existing data to support the updated status.

The 5 steps for conducting the minimal OA Lite are shown in **Error! Reference source not found.**. The first two steps are the same as they are in the full Operational Analysis. The remaining three steps are as explained above. Note that with the exception of collaborating the status of implementing the recommendations, no other interviews are conducted and no other sources of data are reviewed.

Figure 2. Steps for Conducting a Minimal OA Lite



EXPANDED OA LITE

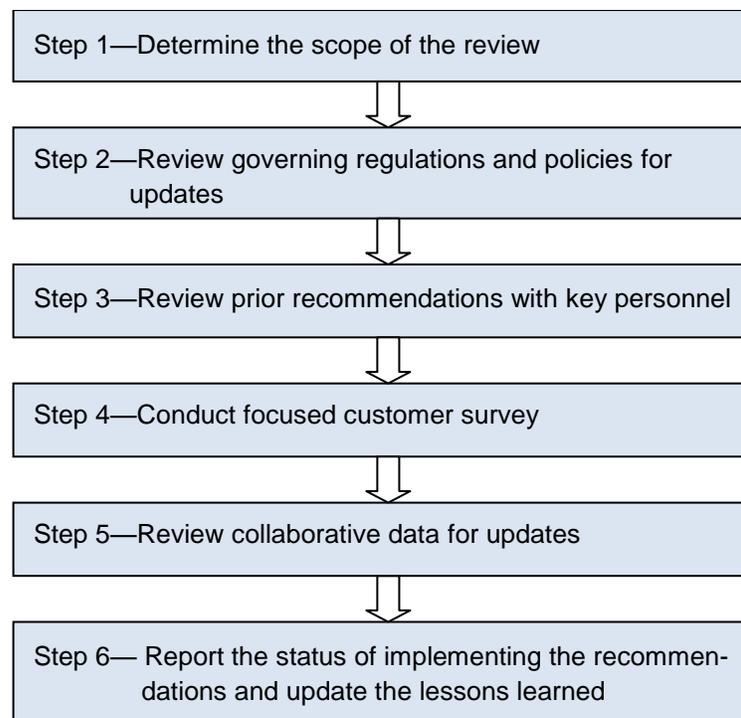
An expanded OA Lite is very similar to the minimal OA Lite except that it includes a focused customer survey. Like the minimal OA Lite, it provides an update report on the investment's progress in implementing the recommendations of the prior Operational Analysis. This information is primarily obtained by an update from the investment or application manager, from the Chief Enterprise Architect (CEA), from other sources within the Office of Information Technology (OIT), and from the focused customer survey.

Collaboration information may also be obtained from other sources, such as a review of the investment's performance presented on the OMB IT Dashboard, at <http://www.itdashboard.gov/>. The investment/application manager should be able to provide any collaborative source of existing data to support the updated status.

The focused customer survey is a smaller survey that targets the outcomes of the recommendations. This survey should assist in determining whether progress was being made from the actual users of the application. Instead of the full customer satisfaction survey used in the full Operational Analysis, there would only be 5-6 questions that should take just a few moments to complete.

The 6 steps for conducting the minimal OA Lite are shown in **Error! Reference source not found.** The first two steps are the same as they are in the full Operational Analysis. The remaining four steps are as explained above. Note that with the exception of collaborating the status of implementing the recommendations, no other interviews are conducted and no other sources of data are reviewed.

Figure 3. Steps for Conducting an Expanded OA Lite



CONTACT INFORMATION

If you have any questions, comments, suggested improvements, or other feedback regarding this document, please contact the IHS CPIC Manager, Mr. Carl Gervais. Your feedback is appreciated.

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APPENDIX A. LIST OF ACRONYMS AND DEFINITIONS

AOA	Annual Operational Analysis
AoA	Analysis of Alternatives
C&A	Certification and Accreditation
CCA	Clinger-Cohen Act
CIO	Chief Information Officer
CPIC	Capital Planning and Investment Control
DME	Development, Modernization, or Enhancement
E300	OMB Circular A-11 Exhibit 300
EA	Enterprise Architecture or Enterprise Architect
EVM	Earned Value Management
EVMS	Earned Value Management System
EPLC	Enterprise Performance Life-cycle
FAR	Federal Acquisition Regulation
FY	Fiscal Year
GAO	General Accountability Office
GPRA	Government Performance and Results Act
HHS	Department of Health and Human Services
HW	Hardware
IHS	Indian Health Service
IOAT	Infrastructure, Office Automation, and Telecommunications
IPT	Integrated Project Team
ISAC	Information Systems Advisory Committee
ISSO	Information Systems Security Officer
IT	Information Technology
ITIM	GAO's Information Technology Investment Management
ITIRB	Information Technology Investment Review Board
IV&V	Independent Verification and Validation
MS	Microsoft
NPIRS	National Patient Information Reporting System
O&M	Operations and Maintenance
OA	Operational Analysis
OIT	Office of Information Technology
OMB	Office of Management and Budget
OPDIVs	Operational Divisions
PART	Program Assessment and Rating Tool
PIR	Post-implementation Review
PM	Program/Project Manager
POA&M	Plan of Action and Milestones
PPMT	Oracle Primavera Portfolio Management Tool, commonly called ProSight
RPMS	Resource and Patient Management System
SME	Subject Matter Expert
SS	Steady-state
SW	Software
TRB	Technical Review Board

Definitions

- 1) Efficiency – Indications that the organization is carrying out its activities in the most cost beneficial manner (i.e. cycle time, cost per unit), typically based on industry standards or benchmarks
- 2) Effectiveness – Indications that the organization is successful at achieving the intended desired outcomes. Effectiveness ensures that resources (i.e. FTE, budget, etc.) are applied to those activities that will contribute to the achievement of the organization’s mission.
- 3) Maintainability – How system is designed to allow relative ease and economy of time, resources and cost where the system can be retained or restored to an efficient level of performance.
- 4) Availability – User accessibility of a system in a timely manner. It should meeting service level agreements (SLA) in system uptime and response time.
- 5) Reliability – Ability and frequency of the system to perform or function as expected or designed. It should meet SLA reliability metrics.
- 6) Productivity - Measure comparing the quantity or quality of output to the inputs required to produce it. An example might be the comparison of cost of system to the cost savings of manual labor and errors associated with manual labor.
- 7) Security – Ability of procedural or system controls to protect information and system resources with respect to data confidentiality, integrity and authorized user access.
- 8) Providing the Most Cost Beneficial Solution – Ability of the system to provide the necessary performance and functionality for the best value.
- 9) Technological Currentness – Performance and functionality of the system provides current industry standard or better technology for the given needs of the users.
- 10) Innovation – The process of providing a different method, developing a different approach, or using different technology to more effectively or more efficiently meet mission requirements.
- 11) Support of the Agency Mission – System(s) support goals and objectives of the Agency.
- 12) Customer Satisfaction – User and Customer satisfaction level with the system(s).

APPENDIX B. GUIDANCE QUESTIONS FOR RECOMMENDED INTERVIEWS

The interview sheets presented in this Appendix may be used to guide the interviews. It is important to note that not all questions need to be asked – the interview sheets should **guide** the interview to areas of concern, which can then be examined in greater depth.

Guidance Questions are provided to guide interviews with the following:

- Investment or Program Manager
- Application Manager(s)
- Enterprise Architect
- Help Desk Manager
- Information Systems Security Officer
- Internal Controls Officer

The project manager and the application manager may be one and the same person.

Normally, the internal control officer can be informally interviewed by e-mail to determine if there are any findings related to the investment.

Additional Guidance Questions for the Sponsor, a User Board Representative and/or other key users, and the Chief Technology Officer are provided in Appendix C. A set of questions for a user survey is presented in Appendix D.

INVESTMENT MANAGER

Date:

Name:

Phone Number:

E-Mail:

Investment Name:

PROJECT DESCRIPTION

- A. Please provide a brief summary describing the application(s) currently in steady-state.
- B. Please provide a description of the business processes that the application(s) supports.

MISSION ANALYSIS

- A. Please complete the following two tables (Alignment is “High”, “Medium”, “Low”, or “NA”). Please explain how the investment is continuing to support each of the listed missions or strategic goals for those with a High Alignment.

Table 1: *Alignment with IHS Director’s Priorities*

Priority	Alignment
To renew and strengthen our partnership with tribes	
Explanation:	
In the context of national health insurance reform, to bring reform to IHS	
Explanation:	
To improve the quality of and access to care	
Explanation:	
To make all of our work accountable, transparent, fair, and inclusive	
Explanation:	

Table 2: Alignment with IHS OIT Strategic Goals

Strategic Objective	Alignment
Goal 1: Ensure involvement of Tribes in advisement and participation in Information Technology related decision-making process that encourages stronger collaborations; innovations in the management of programs; and timely and important issues being brought forward for consideration.	
Explanation:	
Goal 2: Enhance the quality, accuracy, availability, and delivery of clinical information and applications to improve care of patients and communities.	
Explanation:	
Goal 3: Enhance the administrative information management and applications to optimize our business processes and health care operations.	
Explanation:	
Goal 4: Implement an enterprise approach to information technology infrastructure that will foster communication, innovation, collaboration, standardization and interoperability.	
Explanation:	
Goal 5: Achieve excellence in the management of IT resources through efficient and effective fiscal, project, operations, and human capital management.	
Explanation:	
Goal 6: Provide information security that ensures the confidentiality, integrity and availability of IHS information resources.	
Explanation:	

- B. Could the application(s) be combined with others to better meet the organization’s strategic goals?

- C. Are there any opportunities for shared services, data consolidation or for the use of cloud computing in the Investment “to-be” Enterprise Architecture (EA)?

USER OR CUSTOMER ASSESSMENT

- A. Describe how the user requirements for modifications of the IT investment are defined?
 - 1) A Change Control Board exists that defines and prioritizes modifications.
 - 2) The application manager defines and prioritizes modifications.
 - 3) A users group defines and prioritizes modifications.
 - 4) Other
- B. Does the application(s) provide customers needed functionality and performance?
- C. Do current performance goals reflect current customer functional or performance requirements?

GAP ANALYSIS

- A. Is there a process and documentation that identifies a need for additional functionality and/or performance in the application(s)?
- B. Is there an alternative solution(s) that would result in an improved effectiveness and/or cost savings?
- C. How could we make better use of technology to provide a better level of service at a lower cost?

COSTS

- A. What is the basis for the approved baseline cost estimates and how accurate is that basis?
- B. How do you account for planned costs (for example, firm fixed price on contracts, activity-based costing by government FTEs, etc.)?
- C. How do you determine if cost estimates are reasonable or no longer reasonable, and if a baseline modification is required?
- D. Did you re-baseline and if so, when? Was it approved?
- E. How are risks accounted for in the cost estimates and actual costs?
- F. What is the status of the risks identified in the investment's planning and acquisition phases – is the risk register regularly updated?
- G. What is used to determine cost variances?
 - 1) EVMS?
 - 2) Cost system(s)?
 - 3) Other? Please specify.

H. What budget/accounting reports are available to the application manager?

I. What contractor cost data are available to the application manager?

SCHEDULE

A. How did you develop the schedule for the application(s) in steady-state operations? Is it documented and updated regularly?

B. How is it assured that interdependent resources (e.g., reviewing organizations, support organizations including government, other application(s) under DME, and contractor) do not have an impact on the schedule?

- 1) Changes in the project schedule trigger a review of shared resource schedules.
- 2) Changes in the project schedule are planned in conjunction with the managers of shared resources; conflicts are negotiated and resolved.
- 3) Changes are reported to shared resources and it is their responsibility to report any impacts.

C. How often does the contractor(s) provide you with an updated schedule and/or time/labor estimates for assigned tasks?

D. Are the contracts performance based, using schedule as one performance factor?

E. Describe how you determine if an application(s)'s project is behind schedule. For example, do you conduct formal performance reviews, informal performance reviews, review EVMS reports, or other processes?

F. How is risk factored into the program/project schedule?

PERFORMANCE

A. Do you collect performance measures?

B. How were performance measures identified? For example, did you use:

- 1) Readily measurable quantitative data?
- 2) Standard measures?
- 3) Developed after the fact to meet business case reporting requirements?
- 4) Customer specified?
- 5) Service Level Agreements (SLAs)

C. How are performance targets established and how are they approved? For example, do you have Service Level Agreements (SLAs)?

D. What tools are used to collect performance measurement data? For example, do you use:

- 1) EVMS?
- 2) Contractor progress reports?
- 3) Performance measurement reports?
- 4) Customer-supplied information?
- 5) Other? Please specify.

E. How was risk factored into the performance capabilities that are used as a performance goal? For example, do you use:

- 1) Maturity of the implementing technology?
- 2) Unstable technical standards?
- 3) Organizational expertise?
- 4) Other? Specify.

F. What triggers review and changes in the performance improvement goals?

G. How do you monitor and are you alerted to events that may impact the performance improvement goals? For example, do you use:

- 1) A specific review process?
- 2) Ad hoc (phone calls, media, etc.)?
- 3) Other? Specify.

H. For the prior year, how did your actual performance compare with the planned performance improvement goals?

- 1) Within 10% variance with no rebaselining?
- 2) Within 10% variance with rebaselining after budget reductions?
- 3) Over 10% variance?
- 4) Is there a frequent change in performance goals? If so, please specify when, why, and the difference.

I. Please provide the reasons why planned performance goals or planned performance improvements were not met and any remedial actions planned to meet goals in the future.

BENEFITS AND RISKS

A. What were the original quantitative and qualitative benefits of the application(s)?

B. How closely did the application(s) meet the expected benefits? Please provide explanations for any significant gap in meeting expected benefits.

C. Describe the lessons learned through the work conducted for the original baseline, and how they were implemented to improve the application(s).

D. Were there any breaches in security this year? If so, please describe the incidents and how they were managed.

FINANCIAL PERFORMANCE

- A. How often do you analyze cost, schedule and performance data together to evaluate the reasonableness of the current budget?
- 1) Monthly?
 - 2) Quarterly?
 - 3) Biannually?
 - 4) Annually?
- B. Discuss any budgetary constraints/issues and how they are being managed.

OPERATIONAL ASSESSMENT

- A. Based on customer and user requirements and performance analyses, discuss the root cause of a gap and what, if any additional functionality or performance is required. Examples of gaps are:
- 1) Failure to provide desired functionality
 - 2) Failure to meet performance requirements, either technical or financial
 - 3) Inadequate information and computer security
 - 4) Poor customer satisfaction
 - 5) Misalignment with IHS strategic goals and objectives
 - 6) Non-compliance with the Enterprise Architecture
- B. Identify opportunities to improve functionality, performance (effectiveness and or efficiency). Examples of these opportunities may include
- 1) investing in technology compliant with the Departmental EA
 - 2) business process re-engineering
 - 3) delivering services more efficiently in a web-based environment
- C. Justify if the existing application(s) should continue in operation as is, be enhanced or terminated. If the application(s) is to be enhanced or terminated, summarize the actions to be taken this fiscal year.
- D. Describe your near-term (i.e. 1-2 year plans) for the application(s).
- E. Please provide any additional information, particularly related to the information in the Exhibit 300, that you feel requires further explanation.
- F. Are there any lessons that would be of interest agency-wide that you have learned in managing this investment?

G. How would you rate the Investment and the Applications in the following areas (Rate on a scale from 1 to 6, with 1 being the lowest score and 6 being the highest score):

1 **2** **3** **4** **5** **6**
Completely **Completely**
Unsatisfied **Satisfied**

Indicator	Investment Rating	Application 1 Rating	Application 2 Rating	Application 3 Rating
Efficiency				
Effectiveness				
Maintainability				
Availability				
Reliability				
Productivity				
Security				
Providing the most cost-beneficial solution				
Technological currentness				
Innovation				
Support of the Agency mission				
Customer Satisfaction				

Definitions for these 12 Indicators are provided in Appendix A.

H.

APPLICATION MANAGER

Date:

Name:

Phone Number:

E-mail:

Investment Name:

Application(s):

- A. Please provide a brief summary describing the application.
- B. Please summarize your role in the development and operation of the application.
- C. Are budgets and expense reports available to the Application Manager?
- D. Are contractor cost data available to the Application Manager?
- E. Describe how the user requirements for modifications of the IT investment are defined?
 - 1) A Change Control Board exists that defines and prioritizes modifications.
 - 2) The application manager defines and prioritizes modifications.
 - 3) A users group defines and prioritizes modifications.
 - 4) Other
- F. What measures do you use to measure the performance of the application in meeting mission requirements? For example, do you use:
 - 1) Readily measurable quantitative data
 - 2) Standard measures
 - 3) Developed after the fact to meet business case reporting requirements
 - 4) Customer specified
 - 5) Service Level Agreements (SLAs)
- G. What tools are used to collect performance measurement data? For example, do you use:
 - 1) Earned Value Measurement System (EVMS)
 - 2) Contractor progress reports
 - 3) Performance measurement reports
 - 3) Customer-supplied information
 - 4) Other. Please specify.

- H. Does the application provide customers needed functionality and performance?
If not, please specify what additional functionality or performance is required?
- I. What processes if any are used to assess customer satisfaction? (Select all that apply)
- 1) Customer satisfaction surveys
 - 2) Minutes of user group meetings
 - 3) Customer focus groups
 - 4) Review of help desk logs
- J. How are risks accounted for in the cost estimates and actual costs?
- K. What is the status of the risks identified in the investment's planning and acquisition phases – is the risk register regularly updated?
- L. Is there an alternative solution(s) that would result in increased effectiveness and/or cost savings?
- M. Identify opportunities to improve functionality, performance (effectiveness and or efficiency). Examples of these opportunities may include
- 1) Investing in technology compliant with the Departmental Enterprise Architecture (EA)
 - 2) Business process re-engineering
 - 3) Delivering services more efficiently in a web-based environment
- N. Could the application(s) be combined with others to better meet OIT's strategic goals?
- O. Are there any opportunities for shared services, data consolidation or for the use of cloud computing either within or outside of IHS?
- P. Based on Customer and User requirements, performance analyses, and earned value variance analyses, discuss the root cause of a gap and what, if any additional functionality or performance is required. Examples of gaps are:
- 1) Failure to provide desired functionality
 - 2) Failure to meet performance requirements, either technical or financial
 - 3) Inadequate information and computer security
 - 4) Poor customer satisfaction
 - 5) Misalignment with IHS strategic goals and objectives
 - 6) Non-compliance with the Enterprise Architecture
- Q. Are there any lessons that would be of interest agency-wide that you have learned in managing this application?

R. How would you rate the Investment and the Application in the following areas (Rate on a scale from 1 to 6, with 1 being the lowest score and 6 being the highest score):

1 **2** **3** **4** **5** **6**
Completely **Completely**
Unsatisfied **Satisfied**

<u>Indicator</u>	<u>Investment Rating</u>	<u>Application Rating</u>
Efficiency		
Effectiveness		
Maintainability		
Availability		
Reliability		
Productivity		
Security		
Providing the most cost-beneficial solution		
Technological currentness		
Innovation		
Support of the Agency mission		
Customer Satisfaction		

Definitions for these 12 Indicators are provided in Appendix A.

ENTERPRISE ARCHITECT

Date:

Name:

Phone Number:

E-mail:

Investment Name:

- A. When did the Investment last undergo the Department and Agency's EA review?
- B. Does the Investment need to be re-evaluated for EA compliance within the next year?
- C. Do the Investment applications align with IHS's "to-be" EA?
1) {Application 1}
2) {Application 2}
3) {Application 3}
- D. Do the applications need to be modernized to be consistent with IHS's "to-be" EA?
1) {Application 1}
2) {Application 2}
3) {Application 3}
- E. Do the Investment applications need to be replaced to be consistent with IHS's "to-be" EA?
1) {Application 1}
2) {Application 2}
3) {Application 3}
- F. Could the application(s) be combined with others to better meet OIT's strategic goals?
- G. Are there any opportunities for shared services, data consolidation or for the use of cloud computing in the Investment?

H. Are there any lessons that would be of interest agency-wide that you have learned in reviewing this investment?

HELP DESK MANAGER

Investment Name:

Date:

Name:

Phone Number:

Email:

USER OR CUSTOMER ASSESSMENT

- A. Describe the application's users and how they use the application(s).
- B. Describe the process to collect trouble tickets.
- C. Does the process to collect trouble tickets also collect user requirements? If so, how are those requirements processed?
- D. Describe the process and tools used to assess user or customer satisfaction with the application(s). For example, do you use:
 - 1) Customer satisfaction surveys?
 - 2) Minutes from user group meetings?
 - 3) Results from customer focus groups?
 - 4) Review of help desk logs?
 - 5) Other? Specify.
- E. Summarize the results of surveys or other user/customer inputs.
- F. What are the trends of application usage based on number of targeted users and the amount of time they use the application(s)?
- G. What is the difference between actual application usage to projected application usage in number of targeted users and the amount of time they use the application(s)?
- H. Does the application(s) provide customers needed functionality and performance?
- I. If the application(s) differs in functionality or performance from customer's perception of the application(s), what may account for this difference?
- J. What activities have been conducted in the past to improve user or customer satisfaction? How successful were these activities?
- K. Do current performance goals reflect current customer functional or performance requirements?

SUMMARY QUESTIONS

- A. Based on customer and user feedback, discuss the root causes of identified gaps and what, if any additional functionality or performance is required.

- B. Identify opportunities to improve functionality, performance (effectiveness and or efficiency). These opportunities may include
 - 1) investing in technology compliant with the Departmental EA
 - 2) business process re-engineering
 - 3) delivering services more efficiently in a web-based environment

- C. Are there any lessons that would be of interest agency-wide that you have learned in supporting this investment?

- D. How would you rate the Investment and the Application(s) being evaluated in the following areas (How would you rate the Investment and the Applications in the following areas (Rate on a scale from 1 to 6, with 1 being the lowest score and 6 being the highest score):

1 **2** **3** **4** **5** **6**
Completely **Completely**
Unsatisfied **Satisfied**

Indicator	Investment Rating	Application 1 Rating	Application 2 Rating	Application 3 Rating
Efficiency				
Effectiveness				
Maintainability				
Availability				
Reliability				
Productivity				
Security				
Providing the most cost-beneficial solution				
Technological currentness				
Innovation				
Support of the Agency mission				
Customer Satisfaction				

Definitions for these 12 Indicators are provided in Appendix A.

1)

INFORMATION SYSTEMS SECURITY OFFICER

Date:

Name:

Phone Number:

Email:

- A. When did the application last receive its Authority to Operate (ATO)? How often does an application need to be re-evaluated?
- B. Are there any Plan of Action and Milestones (POA&M) or Corrective Action Plan (CAP) action items that are outstanding?
- C. Are there any audit findings?
- D. What are the results of the annual testing and when was the testing last performed?
- E. Does the application align with the HHS's Security Program? Does it align with the IHS's Security Program?
- F. Under what circumstances may an application have a waiver to the ATO?
- G. Does the steady-state application or the investment need to be modernized to be consistent with IHS's Security Program?
- H. Are there any security concerns with the application or the investment?

INTERNAL CONTROLS OFFICER

Investment Name:

Date:

Name:

Phone Number:

Email:

- A. Have there been any Internal Control findings of this investment or application? If so, is there an acceptable remediation plan in place?

- B. Have there been any GAO audits of this investment or application?

- C. What information would you like to receive from an operational analysis that would be useful for an internal controls perspective?

APPENDIX C. GUIDANCE QUESTIONS FOR OPTIONAL INTERVIEWS

The interview sheets presented in this Appendix may be used to guide the interviews. Not all questions need to be asked – the interview sheets should guide the interview to areas of concern, which can then be examined in greater depth.

Guidance Questions are provided to guide interviews with the following:

- Application Business Owners/Sponsor
- Users and/or user board representative(s) and/or other key users
- Chief Technology Officer

The Application Business Owners/Sponsor is listed as an optional interview because she/he may be at too high a level to interview for the operational analysis. The user board representative(s) and the Chief Technology Officer are listed as optional interviews because they may not exist.

BUSINESS OWNER/SPONSOR

Date:

Name:

Phone Number:

E-Mail:

Investment Name:

PROJECT DESCRIPTION

A. Please provide a description of the business processes that the application(s) supports.

MISSION ANALYSIS

A. Please complete the following two tables (Alignment is “High”, “Medium”, “Low”, or “NA”). Please explain how the investment is continuing to support each of the listed missions or strategic goals for those with a High Alignment.

Table 1: *Alignment with IHS Director’s Priorities*

Priority	Alignment
To renew and strengthen our partnership with tribes	
Explanation:	
In the context of national health insurance reform, to bring reform to IHS	
Explanation:	
To improve the quality of and access to care	
Explanation:	
To make all of our work accountable, transparent, fair, and inclusive	
Explanation:	

Table 2: Alignment with IHS OIT Strategic Goals

Strategic Objective	Alignment
Goal 1: Ensure involvement of Tribes in advisement and participation in Information Technology related decision-making process that encourages stronger collaborations; innovations in the management of programs; and timely and important issues being brought forward for consideration.	
Explanation:	
Goal 2: Enhance the quality, accuracy, availability, and delivery of clinical information and applications to improve care of patients and communities.	
Explanation:	
Goal 3: Enhance the administrative information management and applications to optimize our business processes and health care operations.	
Explanation:	
Goal 4: Implement an enterprise approach to information technology infrastructure that will foster communication, innovation, collaboration, standardization and interoperability.	
Explanation:	
Goal 5: Achieve excellence in the management of IT resources through efficient and effective fiscal, project, operations, and human capital management.	
Explanation:	
Goal 6: Provide information security that ensures the confidentiality, integrity and availability of IHS information resources.	
Explanation:	

B. Could the application(s) be combined with others to better meet the organization’s strategic goals?

C. Are there any opportunities for shared services, data consolidation or for the use of cloud computing in the Investment “to-be” Enterprise Architecture (EA)?

USER OR CUSTOMER ASSESSMENT

- A. Describe how the user requirements for modifications of the IT investment are defined?
 - 1) A Change Control Board exists that defines and prioritizes modifications.
 - 2) The application manager defines and prioritizes modifications.
 - 3) A users group defines and prioritizes modifications.
 - 4) Other
- B. Does the application(s) provide customers needed functionality and performance?
- C. Do current performance goals reflect current customer functional or performance requirements?

GAP ANALYSIS

- A. Is there a process and documentation that identifies a need for additional functionality and/or performance in the application(s)?
- B. Is there an alternative solution(s) that would result in increased effectiveness and/or cost savings?
- C. How could we make better use of technology to provide an improved level of service at a lower cost?

COSTS

- A. What is the basis for the approved baseline cost estimates and how accurate is that basis?
- B. How do you account for planned costs (for example, firm fixed price on contracts, activity-based costing by government FTEs, etc.)?
- C. How do you determine if cost estimates are reasonable or no longer reasonable, and if a baseline modification is required?
- D. How are risks accounted for in the cost estimates and actual costs?

PERFORMANCE

- A. Do you collect performance measures?
- B. How were performance measures identified? For example, did you use:
- 1) Readily measurable quantitative data?
 - 2) Standard measures?
 - 3) Developed after the fact to meet business case reporting requirements?
 - 4) Customer specified?
 - 5) Service Level Agreement (SLA)
- C. How are performance targets established and how are they approved?
- D. How was risk factored into the performance capabilities that are used as a performance goal? For example, did you use:
- 1) Maturity of the implementing technology?
 - 2) Unstable technical standards?
 - 3) Organizational expertise?
 - 4) Other? Specify.
- E. What triggers review and changes in the performance improvement goals?
- F. How do you monitor and are you alerted to events that may impact the performance improvement goals? For example, do you use:
- 1) A specific review process?
 - 2) Ad hoc (phone calls, media, etc.)?
 - 3) Other? Specify.
- G. Please provide the reasons why planned performance goals were not met and any remedial actions planned to meet goals in the future.

BENEFITS AND RISKS

- A. What were the original quantitative and qualitative benefits of the application(s)?
- B. How closely did the application(s) meet the expected benefits? Please provide explanations for any significant gap in meeting expected benefits.
- C. Describe the lessons learned through the work conducted for the original baseline, and how they were implemented to improve the application(s).
- D. Were there any breaches in security this year? If so, please describe the incidents and how they were managed.

FINANCIAL PERFORMANCE

- A. How often do you analyze cost, schedule and performance data together to evaluate the reasonableness of the current budget?
- 1) Monthly?
 - 2) Quarterly?
 - 3) Biannually?
 - 4) Annually?
- B. Discuss any budgetary constraints/issues and how they are being managed.

OPERATIONAL ASSESSMENT

- A. Based on customer and user requirements and performance analyses, discuss the root cause of a gap and what, if any, additional functionality or performance is required. Examples of gaps are:
- 1) Failure to provide desired functionality
 - 2) Failure to meet performance requirements, either technical or financial
 - 3) Inadequate information and computer security
 - 4) Poor customer satisfaction
 - 5) Misalignment with IHS strategic goals and objectives
 - 6) Non-compliance with the Enterprise Architecture
- B. Identify opportunities to improve functionality, performance (effectiveness and or efficiency). These opportunities may include
- 1) investing in technology compliant with the Departmental EA
 - 2) business process re-engineering
 - 3) delivering services more efficiently in a web-based environment
- C. Justify if the existing application(s) should continue in operation as is, be enhanced or terminated. If the application(s) is to be enhanced or terminated, summarize the actions to be taken this fiscal year.
- D. Describe your near-term (i.e. 1-2 year plans) for the application(s).
- E. Are there any lessons that would be of interest agency-wide that you have learned in sponsoring this investment?

F. How would you rate the Investment and the Applications in the following areas (Rate on a scale from 1 to 6, with 1 being the lowest score and 6 being the highest score):

1 **2** **3** **4** **5** **6**
Completely **Completely**
Unsatisfied **Satisfied**

Indicator	Investment Rating	Application 1 Rating	Application 2 Rating	Application 3 Rating
Efficiency				
Effectiveness				
Maintainability				
Availability				
Reliability				
Productivity				
Security				
Providing the most cost-beneficial solution				
Technological currentness				
Innovation				
Support of the Agency mission				
Customer Satisfaction				

Definitions for these 12 Indicators are provided in Appendix A.

G.

USER BOARD REPRESENTATIVE / KEY USER

Investment Name:

Date:

Name:

Phone Number:

Email:

USER OR CUSTOMER ASSESSMENT

- A. Describe the application's users and how they use the application(s).

- B. Describe the process and tools used to assess user or customer satisfaction with the application(s).
 - 1) Customer satisfaction surveys?
 - 2) Minutes from user group meetings?
 - 3) Results from customer focus groups?
 - 4) Review of help desk logs?
 - 5) Other? Specify.

- C. Summarize the results of survey or other user/customer inputs.

- D. What are the trends of application usage based on number of targeted users and the amount of time they use the application(s)?

- E. What is the difference between actual application usage to projected application usage in number of targeted users and the amount of time they use the application(s)?

- F. Does the application(s) provide customers needed functionality and performance?

- G. If the application(s) differs in functionality or performance from customer's perception of the application(s), what may account for this difference?

- H. What plans are in place to improve user or customer satisfaction?

- I. What activities have been conducted in the past to improve user or customer satisfaction? How successful were these activities?
- J. Do current performance goals reflect current user or customer functional or performance requirements?

SUMMARY QUESTION

- A. Based on customer and user feedback, discuss the root causes of identified gaps and what, if any additional functionality or performance is required.
- B. Identify opportunities to improve functionality, performance (effectiveness and or efficiency). These opportunities may include
 - 1) investing in technology compliant with the Departmental EA
 - 2) business process re-engineering
 - 3) delivering services more efficiently in a web-based environment
- C. Justify if the existing application(s) should continue in operation as is, be enhanced or terminated. If the application(s) is to be enhanced or terminated, summarize the actions to be taken this fiscal year.
- D. Describe your near-term (i.e. 1-2 year plans) for the application(s).

E. How would you rate the Investment and the Applications in the following areas (Rate on a scale from 1 to 6, with 1 being the lowest score and 6 being the highest score):

1 **2** **3** **4** **5** **6**
Completely **Completely**
Unsatisfied **Satisfied**

Indicator	Investment Rating	Application 1 Rating	Application 2 Rating	Application 3 Rating
Efficiency				
Effectiveness				
Maintainability				
Availability				
Reliability				
Productivity				
Security				
Providing the most cost-beneficial solution				
Technological currentness				
Innovation				
Support of the Agency mission				
Customer Satisfaction				

Definitions for these 12 Indicators are provided in Appendix A.

CHIEF TECHNOLOGY OFFICER

Date:

Name:

Phone Number:

Email:

Investment Name:

Please summarize your role in the operation of the Investment:

GAP ANALYSIS

- A. Is there a process and is there documentation that identifies a need for additional functionality and/or performance in the application(s)?

- B. Is there an alternative solution(s) that would result in increased effectiveness and/or cost savings?

- C. How could we make better use of technology to provide a better level of service at a lower cost?

- D. Based on Customer and User requirements, Performance Analysis, and/or Earned Value variance analyses, discuss the root cause of a gap and what, if any additional functionality or performance is required.

OPERATIONAL ASSESSMENT

- A. Identify opportunities to improve functionality, performance (effectiveness and or efficiency). These opportunities may include:
 - 1) investing in technology compliant with the Departmental EA
 - 2) business process re-engineering
 - 3) delivering services more efficiently in a web-based environment

- B. Justify if the existing application(s) should continue in operation as is, be enhanced or terminated. If the application(s) is to be enhanced or terminated, summarize the actions to be taken this fiscal year.

- C. Describe your near-term (i.e. 1-2 year plans) for the application(s).
- D. Are there any lessons that would be of interest agency-wide that you have learned in reviewing this investment?
- E. How would you rate the Investment and the Applications in the following areas (Rate on a scale from 1 to 6, with 1 being the lowest score and 6 being the highest score):

1 **2** **3** **4** **5** **6**
Completely **Completely**
Unsatisfied **Satisfied**

Indicator	Investment Rating	Application 1 Rating	Application 2 Rating	Application 3 Rating
Efficiency				
Effectiveness				
Maintainability				
Availability				
Reliability				
Productivity				
Security				
Providing the most cost-beneficial solution				
Technological currentness				
Innovation				
Support of the Agency mission				
Customer Satisfaction				

Definitions for these 12 Indicators are provided in Appendix A.

APPENDIX D. USER SURVEY QUESTIONS

An important aspect of an Operational Analysis is determining the overall satisfaction of application users. The intent of this data call is to determine user satisfaction with the Application

Please provide answers to the following questions, keeping in mind that this data call is for the Application. The information gathered in this data call will be reported to the Office of Information Technology (OIT) Management and to the Investment Manager to communicate possible process and technological improvements for the applications.

1. Please provide your name and contact information.

Name:

Business E-mail Address:

Business Phone Number:

2. IHS Direct/Tribal/Urban?

- IHS Direct
- Tribal
- Urban
- Other

3 How frequently do you normally use or access the Application?

Once a year or less	<input type="checkbox"/>
2 – 3 times a year	<input type="checkbox"/>
Quarterly	<input type="checkbox"/>
Monthly	<input type="checkbox"/>
Weekly	<input type="checkbox"/>
More than once a week	<input type="checkbox"/>

4. In your interaction with the Application, what processes if any have you seen used to assess user or customer satisfaction? Select all that apply.

Customer satisfaction surveys	<input type="checkbox"/>
Minutes from user group meetings	<input type="checkbox"/>
Results from customer focus groups	<input type="checkbox"/>
Review of help desk logs	<input type="checkbox"/>
None or not aware of any	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>

5. How satisfied are you with the Application?

Very satisfied	Satisfied	Unsatisfied	Very Unsatisfied
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thinking about your response to the question above, please provide comments expressing your satisfaction or dissatisfaction with the Application. (What are you most satisfied with and/or what are the problems contributing to your dissatisfaction with the Application?)

6. Does the Application provide needed functionality and/or performance?

Yes	Partially	No	Unknown
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thinking about your response of "No" or "Partially" to the question above, please provide ideas or comments on additional functionality or performance enhancements.

7. Should the Application be modernized or replaced?

Yes	Partially	No	Unknown
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thinking of how you responded to the question above, please provide comments for any "Yes" or "Partially" answers.

8. How would you rate the Application in the following areas (Rate on a scale from 1 to 6, with 1 being the lowest score and 6 being the highest score):

1 **2** **3** **4** **5** **6**
Completely **Completely**
Unsatisfied **Satisfied**

AREA	RATING
Efficiency	<input type="text"/>
Effectiveness	<input type="text"/>
Maintainability	<input type="text"/>
Productivity	<input type="text"/>
Availability	<input type="text"/>
Reliability	<input type="text"/>
Security	<input type="text"/>
Providing the most cost-beneficial solution	<input type="text"/>
Technological currentness	<input type="text"/>
Innovation	<input type="text"/>
Support of the Agency mission	<input type="text"/>
Customer Satisfaction	<input type="text"/>

Thinking about your responses to the ratings above, please provide ideas or comments for additional functionality or performance enhancements that would improve your rating of the Application.

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 - Support of HHS and IHS Mission.....
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- Customer and User Support.....
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 - Functionality.....
 - Design.....
 - Management.....
- Financial Performance.....
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 - Earned Value Results.....
- Innovation.....
 - Cost, Schedule, and Performance.....
 - Alternative Methods.....
 - Greater Utilization of Technology.....
 - Consolidation.....
- Prior Recommendations.....

GAP ANALYSIS.....

- Strategic and Business Support
 - Support of HHS and IHS Mission.....
 - Performance Results.....
 - Risk Management.....
 - Enterprise Architecture Support.....

Customer and User Support.....

 Customer Requirements

 Customer Satisfaction

 Functionality

 Design

 Management.....

Financial Performance.....

 Internal Control Review.....

 Earned Value Results.....

Innovation.....

 Cost, Schedule, and Performance

 Alternative Methods.....

 Greater Utilization of Technology.....

 Consolidation.....

Prior Recommendations

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APPROVALS:

Christopher Schiano
NDW Investment Manger

Date

Howard Hays
Chief Information Officer (Acting)

Date

Richard Church
NDW Sponsor

Date

APPENDIX G. CHECKLIST OF GAO FACTORS

Guidance from the GAO report highlighted 17 key factors that were spelled out in the Capital Planning Guide that are to be addressed in an Operations Analysis:¹⁰

1. Assesses current costs against life cycle cost.
2. Includes a structured schedule assessment.
3. Includes a structured assessment of performance goals.
4. Identifies whether the investment supports customer processes as designed and is delivering the goods and services it was designed to deliver.
5. Measures the effect the investment has on the performing organization itself.
6. Includes a measure of how well the investment contributes to achieving the organization's business needs and strategic goals.
7. Compares current performance with pre-established cost baseline and estimates.
8. Identifies any areas for innovation in the areas of customer satisfaction, strategic and business results, and financial performance.
9. Identifies if the agency revisited alternative methods for achieving the same mission needs and strategic goals.
10. Addresses issues such as greater utilization of technology or consolidation on investments to better meet organizational goals.
11. Includes an ongoing review of the status of the risks identified in the investment's planning and acquisition phases.
12. Identifies a need to redesign, modify, or terminate the investment.
13. Include an analysis on the need for improved methodology (i.e. better ways for the investment to meet cost and performance goals).
14. Identifies any lessons learned.
15. Identifies in the investment had a cost or schedule variance.
16. Identifies recommendations to redesign or modify an asset before it becomes a problem.
17. Includes information on the overlap of the investment with other systems.

¹⁰ *Agencies Need to Strengthen Oversight of Billions of Dollars in Operations and Maintenance Investments*, GAO-13-87, October 2012.