

UNITED STATES OFFICE OF PERSONNEL MANAGEMENT



# Human Resources Line of Business Cost Benefit Analysis Report

December 2009

*A New Day for the Civil Service*

Human Resources Line of Business  
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## Executive Summary

During Fiscal Year (FY) 2009 the Human Resources Line of Business (HR LOB) launched an effort to revise its original cost benefit analysis (CBA) developed in FY 2004. To update the CBA, the HR LOB followed a comprehensive methodology to review existing agency budget data, collect additional information through a data call and follow up discussions with agencies, analyze collected information, and calculate cost savings and avoidance.

The revised CBA depicts the savings realized by the Federal government as agencies migrate their HR systems to shared service centers (SSCs). Based upon data collected, the current net present value of total cost savings and cost avoidance is equal to over \$1.3 billion. Consistent with economies of scale theory<sup>1</sup>, the savings accelerate as more agencies migrate to an SSC. Additionally, the HR LOB initiative will continue to generate approximately \$200 million in cost savings annually after FY 2015<sup>2</sup>. While the HR LOB remains in the relatively early stages of agency implementation, these significant cost savings and avoidances are enhanced by other benefits related to the initiative such as improved management, operational efficiencies, and improved customer service. Table 1 summarizes the results of the revised CBA:

**Table 1: Revised CBA Results**

Revised CBA	
Overall Planning Costs	\$ (59,038,853)
Other Costs	\$ (377,429,568)
Overall Cost Savings	\$ 1,183,409,104
Overall Cost Avoided	\$ 626,290,891
<b>Total Savings &amp; Avoidance</b>	<b>\$ 1,373,231,574</b>

The results and findings from the revised CBA go beyond merely supporting the HR LOB as an initiative. The findings also support agencies making the business case to senior management with respect to their legacy HR systems, including a migration to an SSC. Agencies can adopt a similar approach to the methodology documented in this report as a means to estimating cost savings and cost avoidance and share the overall results from the revised CBA to support their case for migration. The revised CBA can also be leveraged by the SSCs and payroll providers as the basis for requesting and justifying funding to upgrade and modernize their systems.

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<sup>1</sup> Economies of scale is a long run concept and refers to reductions in unit cost as the size of a facility, or scale, increases.[Sullivan, Arthur; Steven M. Sheffrin (2003). *Economics: Principles in action*. Upper Saddle River, New Jersey 07458: Pearson Prentice Hall. pp. 157. ISBN 0-13-063085-3].

<sup>2</sup> Cost savings and cost avoidance achieved beyond FY 2015 is not included in the CBA results.

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The revised CBA is the first step in an ongoing effort to track savings associated with the HR LOB. This document describes the methodology used to collect agency data and construct the analysis. The revised CBA will continue to be updated to track actual savings on a bi-annual basis as agencies complete migrations to an SSC.

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## Introduction and Background

### 1.1. Human Resources Line of Business

The Office of Personnel Management (OPM) launched the HR LOB initiative in 2004. The HR LOB Concept of Operations (CONOPS) describes a service delivery model in which designated core HR services relative to human resources information systems (HRIS) and payroll operations move from agencies to shared service centers (SSCs). Over time, as SSCs evolve and expand their capabilities, more transactional and administrative activities may shift from the agency to an SSC.

The overall vision of the HR LOB is governmentwide, modern, cost-effective, standardized, and interoperable HR solutions providing common, core functionality to support the strategic management of human capital and to address duplicative HR systems and processes across the Federal Government.

Under the HR LOB CONOPS, agencies must obtain Human Resource Information Technology (HRIT) services for the core functions of Personnel Action Processing, Benefits Management, and Compensation Management (payroll operations) from an SSC. At a minimum, SSCs must provide HRIT services for the core functions of Personnel Action Processing and Benefits Management. Additionally, SSCs may also offer core Compensation Management (payroll operations). Other non-core functions as defined by the HR LOB Target Requirements for SSCs are not mandated. If the SSC chooses to offer services for any of the non-core sub-functions, they must meet the applicable mandatory requirements at the time such services are provided to the customer. Customer agencies may seek non-core functions from an SSC, but are not mandated to do so.

This approach allows agencies at their discretion to select services as needed to increase their focus on agency mission activities and the strategic management of human capital.

OPM expects the HR LOB to help the Federal Government realize the potential of electronic government, significantly enhance human resources service delivery for civilian employees of the Executive Branch, and realize program objectives that were established in FY 2004, as shown in Table 2:

**Table 2 – HR LOB Strategic Objectives and Goals**

Objectives	Goals
<p><b>Improved Management</b>            Improve the governmentwide strategic management of human capital</p>	<ul style="list-style-type: none"> <li>▪ Faster decision making</li> <li>▪ More informed policy making</li> <li>▪ More effective workforce management</li> <li>▪ Improved resource alignment with agency missions</li> </ul>

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Objectives	Goals
<b>Operational Efficiencies</b> Achieve or increase operational efficiencies in the acquisition, development, implementation and operation of human resources management systems	<ul style="list-style-type: none"> <li>▪ Improved servicing ratio/response times</li> <li>▪ Reduced cycle times</li> <li>▪ Improved automated reporting</li> </ul>
<b>Cost Savings and Cost Avoidance</b> Achieve or increase cost savings and cost avoidance from HR solution activities	<ul style="list-style-type: none"> <li>▪ Reduced duplicative software/hardware/operations/labor resources</li> <li>▪ Increased competitive environment</li> </ul>
<b>Improved Customer Service</b> Improve customer services	<ul style="list-style-type: none"> <li>▪ Increased accessibility to client and value</li> <li>▪ Improved communication and responsiveness</li> <li>▪ Enhanced quality</li> <li>▪ Enhanced timeliness</li> <li>▪ Enhanced accuracy</li> <li>▪ Enhanced consistency</li> </ul>

**1.2. Cost Benefit Analysis Background**

A key component of the shared services concept – and one of the HR LOB Strategic Goals and Objectives – is to achieve significant cost savings and cost avoidance from HR solution activities such as reduced duplicative software, hardware, operations, and labor resources associated with an increased competitive environment. To achieve these strategic and operational goals and objectives, the HR LOB established a 24-agency task force that developed the common solution, target architecture, and supporting business case. The common solution, target architecture, and supporting business case enable a shift in the way HR services are delivered throughout the Federal Government by consolidating agencies’ core HRIT at SSCs.

Over time the 24-agency task force evolved into the HR LOB Multi-Agency Executive Strategy Committee (MAESC). The MAESC serves as the primary governance body for the HR LOB and continues to meet on a monthly basis to provide strategic advice and recommendations to the OPM Director. The revised CBA focuses primarily on cost savings and cost avoidance realized by the HR LOB initiative at the MAESC agencies. To develop this revision the HR LOB relied heavily on the participating MAESC agencies to collect and validate the data needed to revise the CBA.



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**1.3. Original HR LOB Cost Benefit Analysis**

In FY 2004, the HR LOB developed its original CBA that estimated the initiative's total lifecycle costs and benefits:

**Table 3 – HR LOB FY 2004 Cost Benefit Analysis Results<sup>3</sup>**

<b>HR LOB FY 2004 Cost Benefit Analysis Results</b>	
Net Present Value	\$1.143 B
Total Lifecycle Costs	\$1.604 B
Total Lifecycle Benefits	\$2.997 B
Payback Period	6 years
Benefit-to-Cost Ratio	180%

The net present value savings of over \$1.1 billion suggested that the HR LOB common solution would indeed offer the government an opportunity to not only significantly improve the delivery of HR services, but at the same time generate savings by:

- Eliminating redundant and duplicative system investments and operations
- Replacing disjointed and non-interoperable systems and data
- Creating integration between all aspects of HR services
- Creating measured and accountable HR service delivery

This initial CBA was based on a key assumption as spelled out in the OPM HR LOB – Business Case Justification:

*The key assumption for the HR LOB is that all federal agencies will adopt the common solution. Future funding will be unavailable for agencies to modernize their HR systems on a stand-alone, “stovepipe” basis. This will ensure that all federal agencies follow this path and push the entire Federal Government toward a common HR architecture and standardized HR data and processes.<sup>4</sup>*

In addition to the key assumption outlined above, further assumptions were necessary to complete the original CBA. The table below documents the additional assumptions required and the current validity of those assumptions.

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<sup>3</sup> FY 2006 HR LOB Capital Asset Plan.

<sup>4</sup> Office of Personnel Management, HR Line of Business, Business Case Justification, Version 4.2, March 11, 2005, p 13.

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**Table 4 –Validity of Key Original CBA Assumptions<sup>5</sup>**

Key Original CBA Assumptions	Current Validity of Assumptions
1. Six SSCs to be built from the ground up	Instead of building SSCs from the ground up, five existing federal SSCs and four private sector SSCs were selected to provide HR shared services.
2. 50% of HRIT spend would be saved	HRIT spend as captured through the Exhibit 53 process covers a broad range of investments, many of which fall outside the scope of HR LOB core HRIT services.
3. Initial HR LOB Staffing Level of 30 FTEs	FTE staffing levels and costs were significantly overestimated in the original CBA.
4. Average Agency Migration Costs of \$5 million	Agency migration costs vary greatly due to the size and complexity of a migration.
5. All agencies to migrate between FY 2004 and FY 2010	Agency migrations to SSCs have been delayed and are still ongoing.

Since many of the assumptions in the original CBA are no longer valid, the HR LOB revised its approach and methodology to update the CBA and more accurately capture the costs and benefits associated with the initiative. Sections 2 and 3 of this report detail the methodology for developing the revised HR LOB CBA. Section 4 contains the results of the revised CBA, and Section 5 presents the conclusions from this effort.

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<sup>5</sup> FY 2006 HR LOB Capital Asset Plan.

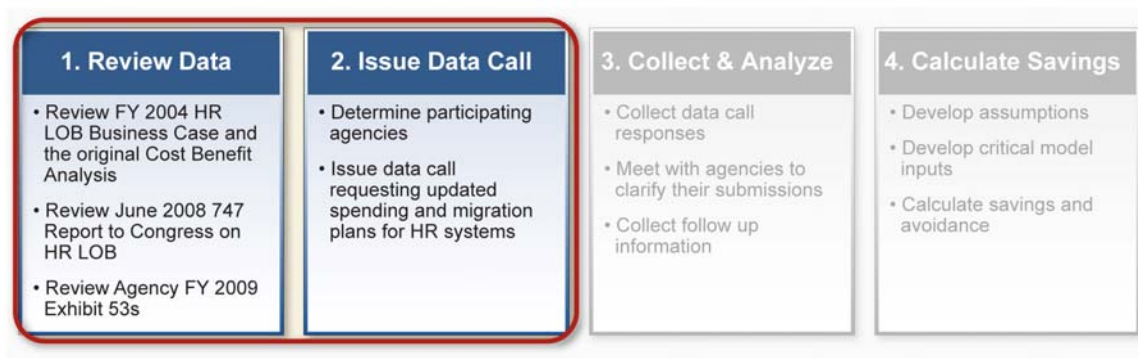


## 2. Data Collection Approach

In November 2008, the HR LOB began its effort to revise the HR LOB CBA and establish a baseline for accurately tracking savings as agencies migrate their core HRIT to SSCs. This effort was made a mandatory activity based on an Office of Management and Budget (OMB) commitment and the Report to Congress on the HR LOB, which was published on June 25, 2008 in response to language in Section 747 of the 2008 Omnibus Bill.

The HR LOB followed a four-step methodology (depicted in the Revised CBA Methodology graphic shown below) to revise the CBA. This methodology leveraged existing data sources such as agency FY 2009 Exhibit 53s, which served as the primary starting point. The first two steps of the methodology are discussed in this section, while steps three and four are reviewed in Section 3 of this report.

**Figure 1 – Revised CBA Methodology Steps 1 and 2**



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### 2.1. Review Data

The HR LOB reviewed and analyzed existing information collected from the following data sources:

- FY 2004 HR LOB Business Case and the original Cost Benefit Analysis
- OMB's Report to Congress on the HR LOB, June 25, 2008
- Agency FY 2009 Exhibit 53s

The original CBA and OMB's Report to Congress on the HR LOB provided several key data points for developing the revised CBA. However, the primary data source for developing the revised CBA was the information submitted by Executive Branch departments and agencies to OMB through the Exhibit 53 process. The Exhibit 53s were selected because "The individual agency's Exhibit 53 is used to create an overall 'Federal IT Investment Portfolio' published as part of the President's Budget. OMB's portfolio review and budget process will ensure IT investments support the strategy identified in this section and ensure the Federal IT Investment Portfolio includes the most effective

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portfolio of investments”<sup>6</sup>. The review of the Exhibit 53 submissions focused on the following departments and agencies, which comprise 22 of the 24 MAESC agencies (Intel Community and OMB are the two MAESC agencies not included in the revised HR LOB CBA):

1. Department of Commerce (DOC)
2. Department of Defense (DOD)
3. Department of Education (ED)
4. Department of Energy (DOE)
5. Department of Health and Human Services (HHS)
6. Department of Homeland Security (DHS)
7. Department of Housing and Urban Development (HUD)
8. Department of the Interior (DOI)
9. Department of Justice (DOJ)
10. Department of Labor (DOL)
11. Department of State (DOS)
12. Department of Transportation (DOT)
13. Department of the Treasury (Treasury)
14. Department of Veterans Affairs (VA)
15. Environmental Protection Agency (EPA)
16. General Services Administration (GSA)
17. National Aeronautics and Space Administration (NASA)
18. National Science Foundation (NSF)
19. Office of Personnel Management (OPM)
20. Social Security Administration (SSA)
21. United States Agency for International Development (USAID)
22. United States Department of Agriculture (USDA)

In addition, the following entities are designated as SSCs or payroll providers:

- DOD’s Civilian Personnel Management Service (SSC)
- DOD’s Defense Finance and Accounting Service (payroll provider)
- HHS’s Program Support Center (SSC)
- DOI’s National Business Center (SSC and payroll provider)
- Treasury’s HR Connect and Bureau of Public Debt (SSC)
- GSA’s National Payroll Branch (payroll provider)
- USDA’s National Finance Center (SSC and payroll provider)

Across these 22 departments and agencies, the HR LOB identified and reviewed a total of 489 IT investment line items that mapped to HR in agencies’ FY 2009 Exhibit 53s (budget information included data for FY 2007 through FY 2009). The data shown below in Table 5 presents the total HRIT spend for this three-year period broken out by

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<sup>6</sup> OMB Exhibit 53—INFORMATION TECHNOLOGY AND E-GOVERNMENT

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Development, Modernization, and Enhancement (DME)<sup>7</sup> spend and Steady State (SS)<sup>8</sup> spend:

**Table 5 – HRIT Spend, FY 2007-FY 2009**

<b>HRIT Spend FY 2007-FY 2009</b>			
<b>Year</b>	<b>DME Spend</b>	<b>SS Spend</b>	<b>Total Spend</b>
FY 2007	\$436.48 million	\$1,074.34 million	\$1,510.82 million
FY 2008	\$471.15 million	\$1,198.30 million	\$1,669.45 million
FY 2009	\$438.76 million	\$1,274.85 million	\$1,713.61 million

## 2.2. Issue Data Call

After reviewing existing data sources available for the CBA update, the HR LOB issued a data call to address identified shortcomings and fill gaps in the available data. To complete a sound assessment and analysis, the revised CBA required specific information relating to legacy system costs, system lifecycle, and future system plans. This type of information is not readily available through the Exhibit 53 process.

The data call to collect the specific information needed to revise the CBA was issued to agencies on November 17, 2008 with an initial due date of December 15, 2008. The data call was based on a template that leveraged investment information collected through the Exhibit 53. The template sought more detailed system-level information on legacy HR systems, which included estimates on a system's lifecycle and expected system replacement costs, along with migration planning estimates, such as expected migration costs and expected post-migration service fees.

To ease the level of effort for agency points of contact, the HR LOB hosted a series of conference calls and published Frequently Asked Questions (FAQs) to answer agency questions relating to the data call. Agencies were asked to review the list of HR systems populated in their agency-specific template based on their Exhibit 53 data and ensure that all agency HR systems were accurately listed. After identification of all agency HR systems, agencies were asked to complete the remaining fields for each system, which provided the detail necessary for the HR LOB to revise the CBA.

A brief description of each field included in the data call template is listed below:

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<sup>7</sup> Development/Modernization/Enhancement (DME) means the program cost for new investments, changes or modifications to existing systems to improve capability or performance, changes mandated by the Congress or agency leadership, personnel costs for investment management, and direct support. For major IT investments, this amount should equal the sum of amounts reported for planning and acquisition plus the associated FTE costs reported in the exhibit 300. [OMB Exhibit 53 definition]

<sup>8</sup> Steady State (SS) means maintenance and operation costs at current capability and performance level including costs for personnel, maintenance of existing information systems, corrective software maintenance, voice and data communications maintenance, and replacement of broken IT equipment. For major IT investments, this amount should equal the amount reported for maintenance plus the associated FTE costs reported in the exhibit 300. [OMB Exhibit 53 definition]

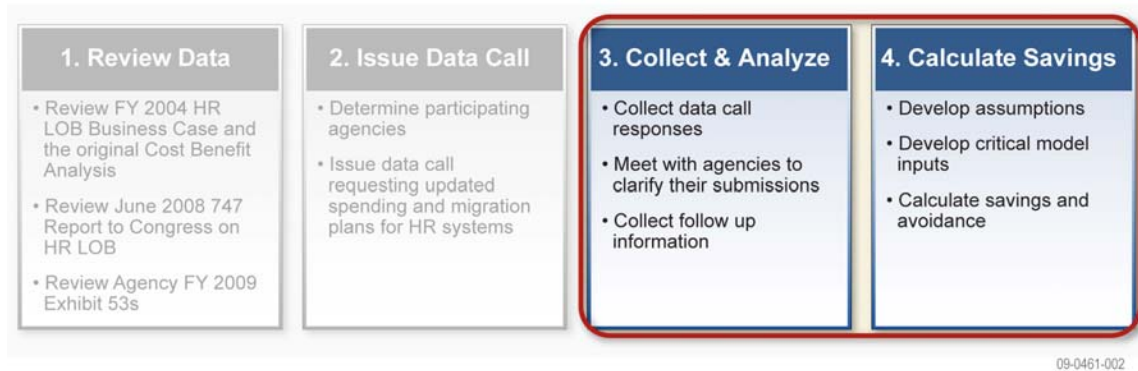
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- **A. HR Systems:** A list of all agency HR systems / investments. This field was pre-populated with Exhibit 53 investments mapped to HR as a starting point.
- **B. System Mapping:** An alignment of each agency HR system with one or more of the HR LOB functions as defined in the HR LOB Target Requirements for SSCs.
- **C. Who Owns and Operates This System?:** An indication of whether each HR system was owned and operated by the “agency”, an “SSC” or “payroll provider”, or “other”.
- **D.1 What Are Your Plans for this System?:** An indication of agency future plans for each HR system such as “migrate”, “replace / upgrade”, or “retire”.
- **D.2 Date of Migration:** The actual migration date for each HR system the agency previously migrated to an SSC or the expected date of migration if the agency planned to migrate the system to an SSC in the future.
- **D.3 Date of System Replacement / Upgrade:** The replacement or upgrade date for each HR system the agency planned to replace or upgrade.
- **D.4 Date of System Retirement:** The retirement date for each HR system the agency planned to retire.
- **E. HR System Replacement / Upgrade Cost:** The total replacement or upgrade cost for each agency HR system.
- **F. Development / Modernization / Enhancement (DME):** Validated agency FY 2007, 2008, and 2009 DME spend amounts (pre-populated from the Exhibit 53) for each HR system as well as an estimate of agency FY 2010 DME spend for each system.
- **G. Steady State (SS) System Spending:** Validated agency FY 2007, 2008, and 2009 SS spend amounts (pre-populated from the Exhibit 53) for each HR system as well as an estimate of agency FY 2010 SS spend for each system.
- **H. Service Fee:** Agency current or expected service fees paid to an SSC for each HR system.
- **I. Total Migration Cost:** Agency current or expected total migration cost to an SSC for each HR system.
- **J. Comments:** Additional information about each HR system.

### 3. Data Analysis

Following the review of available data and issuance of the data call, the HR LOB collected the completed templates, and in certain cases followed up with agencies for clarification or additional data. The data collected from the agencies was analyzed and shaped into the revised CBA model that calculated both cost savings and cost avoidance. These actions are depicted in steps three and four of the methodology and reviewed in detail in this section of the report.

**Figure 2 – Revised CBA Methodology Steps 3 and 4**



#### 3.1. Collect & Analyze

The 22 agencies that participated in the effort played a key role in HR LOB’s ability to calculate the revised cost saving and avoidance amounts. The data used for the analysis had to be complete, accurate, and current. Following the initial data call, the HR LOB met with or held conference calls with agency points of contact to clarify data or gather additional information. The HR LOB held one-on-one meetings with 11 participating agencies in addition to numerous follow-up conference calls. During these meetings the HR LOB focused on developing a complete list of an agency’s major HRIT investments, identifying the agency’s primary solutions for core HR and payroll, and understanding the agency’s use of governmentwide solutions such as eOPF, USAJOBS, GoLearn, and Employee Express. From January 2009 through June 2009, the HR LOB reached out to and actively worked with agencies to construct an accurate and detailed view of their HRIT environments.

##### 3.1.1. Agency Follow-up Meetings

The agency follow-up meetings were valuable tools the HR LOB used to clarify data collected through the data call template and to collect additional information needed to revise the CBA. The focus of discussion in those meetings differed depending on whether the agency was currently aligned to an SSC.

For customer agencies aligned to an SSC for core HR or payroll services, the HR LOB focused on the actual pre-migration and migration activities by asking each agency:

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- What was your previous legacy system spending?
- How much would it have cost to upgrade your legacy system had it not been retired/migrated?

For Customer Agencies not yet aligned to an SSC for core HR or payroll services, the HR LOB focused more on agency future plans by asking each agency:

- Do you plan on migrating any systems within the next 10 years?
- How much do you expect to save, annually, by migrating your legacy system?
- When will you retire the legacy system?

Some of the follow-up meetings also took place with agencies that provide SSC services for core HR or payroll and hence are one of the approved SSCs or payroll providers. At those meetings the HR LOB gathered information on the SSC, including the amount spent on the SSC by the parent agency, as well as the total service fees collected from their customers.

In addition to meeting with the 22 departments and agencies, the HR LOB also reached out to the following small agencies and agency sub-components during this phase for additional information and perspective:

- Federal Energy Regulatory Commission (FERC)
- General Services Administration's National Payroll Branch (NPB)
- Department of the Treasury's Internal Revenue Service (IRS), and Office of Thrift Supervision (OTS)

### **3.1.2. Data Collection Challenges**

During the data collection process, the HR LOB encountered major challenges and gaps in available information. These challenges stemmed largely from gaps in the information currently captured through the Exhibit 53 process. The biggest challenge was that each agency appeared to interpret OMB's guidance for listing HR investments differently, often resulting in incomplete and inconsistent lists of HR systems at the agencies. For example, some agencies' Exhibit 53s did not include line items or information about the service fees paid to their SSC providers while other agencies included this information in their Exhibit 53s.

Additionally, the Exhibit 53 does not directly facilitate the collection of any information relating to agencies' future system plans. While the HR LOB did attempt to collect information related to future-plans through fields such as D1 (What are your plans for this system?) and D2 (Date of Migration), few agencies were able to provide this information. This issue appears to be directly related to the maturity of agencies' capital planning and investment control (CPIC) processes and policies. Agencies with very

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mature and centralized CPIC structures and practices in place typically have their system planning information available at the sufficient level of detail.

Finally, although many agencies track migration costs associated with moving to an SSC, they do not necessarily document actual savings realized by migrating to an SSC and retiring legacy systems. Still, others neither build business cases nor track savings realized by core HR and payroll migrations. One of HR LOB's key observations was that once an agency makes a decision to migrate to an SSC, further analysis of other alternatives (such as upgrading agency legacy system) is typically very high-level or not documented at all. Understandably, agencies focus all of their efforts on the selection of, and migration to their provider.

HR LOB worked through all of these challenges by carefully reviewing data and information collected from agencies and by consistently and repeatedly following up with agencies to fully understand their particular plans and circumstances.

### **3.2. Calculate Savings**

After completing the collection of agency data through both the CBA data collection template and follow-up meetings, the HR LOB constructed the revised CBA model to calculate cost savings and cost avoidance. To the maximum extent possible, HR LOB used data and information collected from, and validated by participating agencies. However, some of the revised CBA calculations are based upon certain assumptions to address gaps in the data provided by agencies.

To develop the model the HR LOB relied on the following key factors:

- Agency Source Data
- Assumptions
- Critical Model Inputs
- Status Quo and Migration Scenario Outputs

This section describes each key factor that was used to develop the revised CBA.

#### **3.2.1. Agency Source Data**

The agency data identified through the Exhibit 53 process, enhanced through the agency template completion, and validated through follow up meetings, emails, and telephone conversations served as the core of the revised CBA calculations. This data was used not only as the primary calculation elements but also as inputs into extrapolating data for agencies with information gaps. Assumptions described in Section 3.2.2 below were developed to address identified gaps in the collected data. The effort that went into the collection and validation of the agency source data is the key difference between the original CBA and this revised analysis.



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### **3.2.2. Assumptions**

To calculate savings, the HR LOB built a new CBA model based upon key assumptions to account for gaps in the data collected from agencies. All of the assumptions used in the revised CBA (listed below) support a conservative approach to calculating savings.

- Agency populations are based on December 2008 information from Fedscope, an online database managed by OPM that contains statistical information on the size and composition of the Federal civilian workforce. This assumption maintains data consistency.
- Agency system migrations to an SSC or payroll provider are to be completed and the replaced legacy systems retired before a migration will be considered complete. For agencies that have migrated or that are in the process of migrating, the model begins calculating savings the first year after migration is completed. This assumption consistently and cleanly captures savings realized through system migration. Historical migration data was used where available.
- Agency system development costs to build a standalone in-house payroll or HR system are based on similar cost factors. This assumption is supported by information reported in OMB's Report to Congress on the HR LOB.
- Cost savings and cost avoidance for NBC customers are captured in the payroll savings category because NBC customers typically migrate payroll and HR at the same time due to the integrated nature of the NBC payroll and HR system. This assumption provides a clean and consistent manner for capturing savings realized by NBC customers.
- Savings realized from migrating to a SSC or payroll provider by agencies that migrated before the establishment of e-Payroll in 2002 or the HR LOB in 2004 are captured as additional considerations, but are not included in the main savings components of the revised CBA. This assumption limits the scope and size of savings captured in the revised CBA.
- All forecasted numbers are discounted to 2008 dollars. This assumption presents a consistent view of data, projections, and the time value of money in the revised CBA.
- A discount rate of 2.4% was used. This assumption is in accordance with OMB guidance per Circular A-94.

### **3.2.3. CBA Model Critical Inputs**

The next step in completing the revised CBA was the development of critical inputs for CBA calculations. The critical inputs were based on data collected directly from an agency or, if the source data was not available for a particular agency, the inputs were extrapolated from data collected from other agencies. Calculations used in the revised CBA were consistent with the conservative approach to calculating savings.

The HR LOB utilized the following critical inputs to revise the CBA:

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**Legacy System Spending:** The annual steady state or operations and maintenance amount that an agency spends on its legacy or in-house payroll or HR systems.

Using data collected through various sources, including but not limited to, responses to the CBA data call template, the original e-Payroll benchmarking study, and OMB's Report to Congress on the HR LOB, the HR LOB captured legacy HR system spending from seven agencies and legacy payroll spending from nine agencies in the revised CBA model. Using this data, the HR LOB calculated a weighted mean for both legacy HR and payroll systems spending per FTE. These two weighted means were used to estimate legacy spending for agencies that did not provide this information during the data collection phase.

**Current/Projected Service Fees:** The annual steady state or operations and maintenance amount that an agency pays or will pay in the future to its payroll provider or SSC.

Using data collected through numerous sources, including but not limited to, responses to the CBA data call template and the 2009 Payroll benchmarking study, the HR LOB captured current/projected HR service fees from four agencies and current/projected payroll service fees from three agencies in the revised CBA model. Using this data, the HR LOB calculated a weighted mean for current/projected HR and payroll service fees per FTE. These weighted means were used to estimate service fees for agencies that did not provide this information during the data collection phase.

**System Replacement Costs:** The one-time amount that an agency spends to replace or upgrade its current legacy or in-house payroll or HR systems.

Using data collected primarily through responses to the CBA data call template, the HR LOB captured the cost to replace agency legacy payroll and HR systems from three agencies. Using this data, the HR LOB calculated the weighted mean for legacy system replacement costs per FTE. This weighted mean was used to estimate the one-time system replacement cost for agencies that did not provide this information during the data collection phase.

**Migration Costs:** The one-time amount that an agency spends to migrate to the system of an SSC or payroll provider.

Using data collected primarily through HR LOB migration cost tracking<sup>9</sup>, the HR LOB captured the cost incurred by both an agency and an SSC or payroll provider to migrate from nine completed migrations. Using this data, the HR LOB calculated the weighted mean for migration cost per FTE. This weighted mean was used to estimate the one-

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<sup>9</sup> As part of its oversight role, HR LOB monitors and tracks each migration of a customer agency to an SSC or payroll provider. This oversight activity includes tracking of migration costs reported by both the customer agency and the SSC.

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time migration cost for agencies that did not provide this information during the data collection phase.

#### **3.2.4. Status Quo and Migration Scenario Outputs**

After documenting the assumptions and calculating the critical inputs for the revised CBA, the HR LOB developed two scenarios for each agency – status quo and migration. These two scenarios form the basis for calculating savings realized by agencies through migration to a payroll provider or SSC in the revised CBA and are based on the critical inputs discussed in the previous section.

**Status Quo Scenario:** This scenario assumes that agencies continue to maintain and operate their legacy HR and payroll systems and spend the associated annual dollar amounts through 2015. This scenario further assumes that agencies will upgrade or replace their systems in lieu of migrating to an SSC or payroll provider. The cost to an agency in the status quo scenario is typically higher than the cost to an agency in the migration scenario.

**Migration Scenario:** This scenario assumes that agencies continue to maintain and operate their legacy systems until the migration year, when the agency migrates to an SSC or payroll provider and retires its corresponding legacy system. The agency pays migration costs in lieu of replacing its legacy system internally and begins paying service fees to the SSC or payroll provider instead of its annual legacy system costs through 2015. The cost to an agency in the status quo scenario is typically higher than the cost to an agency in the migration scenario.

**Outputs:** Outputs for annual cost savings and one-time cost avoidance are calculated by comparing the status quo and migration scenarios for each agency in the area of core HR and payroll. These outputs comprise the benefits calculation of the revised CBA.

Annual cost savings is calculated by subtracting an agency's migration scenario spending (service fees) for core HR or payroll from its status quo scenario spending (legacy system costs).

Cost Savings (annual savings) = Status Quo Scenario (annual legacy system cost) – Migration Scenario (annual service fees)

One time cost avoidance is calculated by subtracting an agency's migration costs for core HR or payroll from its legacy system replacement cost.

Cost Avoidance (one-time) = Legacy System Replacement Cost – Migration Cost

The annual cost savings and one-time cost avoidance outputs for each agency were aggregated and discounted to FY 2008 to show the savings calculated through the revised CBA. The next section of this report describes how these savings calculations were used in the revised CBA and provides the results of the revised CBA.

## 4. Revised Cost Benefit Analysis Results

After documenting assumptions, developing key calculations, and aggregating the savings for each agency, the HR LOB constructed the revised CBA and calculated overall savings. The results focus on quantitative benefits. The revised CBA model calculated cost savings and cost avoidance by capturing agency spending information across four categories:

- **Planning Costs:** Includes both HR LOB and e-Payroll planning costs
- **Cost Savings:** Captures the savings generated for HR and payroll by comparing each agency's annual legacy system spending to their annual service fees
- **Cost Avoided:** Captures the avoidance generated for HR and payroll by comparing each agency's one-time system replacement cost to their one-time migration cost
- **Other Costs:** Includes other costs associated with the HR LOB including failed migration costs and SSC/provider DME costs

This section of the report describes the construction of these four categories and provides the overall results of the revised CBA.

### 4.1. Total Savings

Based upon data collected, the current net present value for total savings is equal to over \$1.3 billion, as shown in Table 6:

Table 6: Revised CBA Results

Revised CBA	
Overall Planning Costs	\$ (59,038,853)
Other Costs	\$ (377,429,568)
Overall Cost Savings	\$ 1,183,409,104
Overall Cost Avoided	\$ 626,290,891
<b>Total Savings</b>	<b>\$ 1,373,231,574</b>

The total savings from the revised CBA compare favorably with the original HR LOB CBA, particularly since the scope of savings analyzed is much more focused and the agency source data more carefully validated and analyzed. The findings confirm that the HR LOB initiative is generating and will continue to generate significant savings at the agencies and for the Federal government as a whole. In addition, there are other benefits associated with the initiative that agencies are realizing.

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**4.2. Planning Costs**

**Table 7: Planning Costs**

<b>Planning Costs</b>	
HR LOB	\$ (51,354,533)
e-Payroll	\$ (7,684,320)
<b>Total Planning Costs</b>	<b>\$ (59,038,853)</b>

The Planning Costs comprise the costs to set up and maintain an office at OPM to manage the e-Payroll and HR LOB initiatives. In the revised CBA the planning costs for HR LOB extend through FY 2015 (when all migrations are projected to be complete). The e-Payroll planning costs are captured through FY 2009, when the completion of the last e-Payroll migration occurred. The planning cost component of the revised CBA differs from the original CBA, where HR LOB planning costs were captured through FY 2010 (in the original CBA all migrations were to be completed by FY 2010). Further, e-Payroll planning costs were not explicitly captured in the original CBA.

**4.3. Other Costs**

**Table 8: Other Costs**

<b>Other Costs</b>	
Failed Migrations	\$ (7,987,803)
SSC/Provider DME Spend	\$ (369,441,765)
<b>Total Other Costs</b>	<b>\$ (377,429,568)</b>

In the revised CBA the Other Costs capture money spent by agencies and SSCs that did not result in a migration (Failed Migrations) and the cost of SSC and payroll provider system upgrades (SSC/Provider DME Spend). This itemization is included in the revised CBA to capture all of the costs associated with the shared services model.

Failed Migrations represent money spent by an agency and SSC or payroll provider in preparation for a migration that was not completed. The money spent in this situation is real and thus is considered a cost for purposes of the revised CBA. Since failed migrations are not predictable the revised CBA only captures these costs when an agency reported this information. The revised CBA does not forecast future costs associated with failed migrations.

SSC/Provider DME Spend represents the cost of system upgrades at the SSCs and payroll providers. This cost item primarily includes ongoing upgrades reported by the SSCs or payroll providers captured through the Exhibit 53 reporting process. Based on the

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information collected through the Exhibit 53 process, system upgrade costs were forecast going forward. However, this item does not capture the cost to completely replace SSC or payroll provider systems unless it was reported through the Exhibit 53 process.

**4.4. Cost Savings**

**Table 9: Cost Savings**

Cost Savings Itemization	
HR	\$ 444,273,223
Payroll	\$ 739,135,881
<b>Total Cost Savings</b>	<b>\$ 1,183,409,104</b>

In the revised CBA Cost Savings reflects the annual savings realized at each agency for HR and payroll as a result of migrating to an SSC or payroll provider. The chart below details the annual cost savings for HR and payroll in the revised CBA from FY 2005 through FY 2015. As depicted in the chart, cost savings from payroll migrations are realized earlier than those from HR migrations due to the completion of all payroll migrations by the end of FY 2009. In the revised CBA, cost savings resulting from HR migrations increase significantly from FY 2011 to FY 2014, the timeframe in which agencies are expected to migrate to SSCs. In the chart below, the area in the darker blue represents annual payroll cost savings, and the area in the lighter blue represents HR cost savings.

**Chart 1: Cost Savings**



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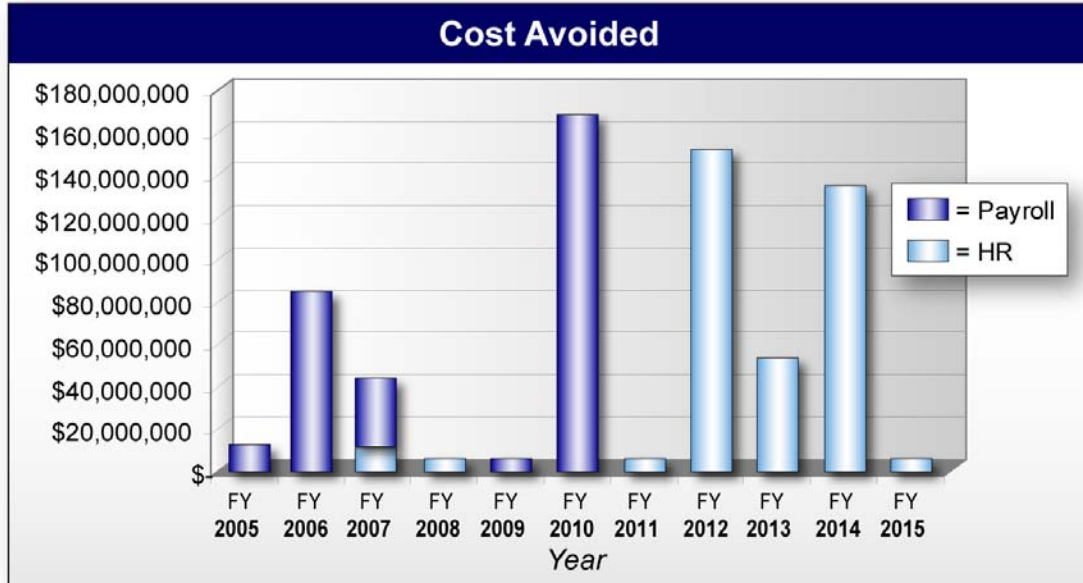
**4.5. Cost Avoided**

**Table 10: Cost Avoided**

Cost Avoided	
HR	\$ 340,200,208
Payroll	\$ 286,090,683
<b>Total Cost Avoided</b>	<b>\$ 626,290,891</b>

In the revised CBA Cost Avoided reflects the one-time cost avoidance realized at each agency for HR and payroll as a result of migrating to an SSC or payroll provider. The chart below illustrates one-time cost avoidances for HR and payroll migrations from FY 2005 to FY 2015. Similar to cost savings, the cost avoidance from payroll migrations is realized earlier than HR because the agency migrations to payroll providers were completed in FY 2009. In the revised CBA HR cost avoidance is expected to be realized from FY 2011 to FY 2015 as agencies migrate to SSCs for HR. In the chart below, the darker bars represent one-time payroll cost avoidance while the lighter bars represent HR cost avoidance.

**Chart 2: Cost Avoided**



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**4.6. Additional Considerations**

**Table 11: Additional Considerations**

<b>Additional Considerations</b>	
Pre-2003 Migrations	\$ 1,827,204,965
eOPF	\$ 548,190,891
Agency Internal Cost Factor	\$ (295,852,276)
<b>Total Additional Considerations</b>	<b>\$ 2,079,543,581</b>
<b>Total Savings (from Section 4.1)</b>	<b>1,373,231,574</b>
<b>Total Savings including Additional Considerations</b>	<b>\$ 3,452,775,154</b>

In addition to the total savings calculated and described previously in the revised CBA, the HR LOB identified, and in some cases quantified, additional considerations that further expand on the core results described so far. The additional considerations calculated in the revised CBA include:

- **Pre-2003 Migrations:** This item captures annual cost savings realized by agencies that migrated HR or payroll prior to the establishment of the e-Government and Lines of Business initiatives. The revised CBA does not capture the annual cost savings realized by these agencies; however, this calculation represents real cost savings realized annually that should be recognized as additional cost savings associated with the HR LOB and the shared services model.
- **Electronic Official Personnel Folders:** This item captures the annual cost savings realized by agencies as a result of implementing OPM’s electronic Official Personnel Folder (eOPF). Although eOPF is not part of the core HRIT that agencies migrate to SSCs, it is an e-Government initiative and governmentwide system managed by OPM that links closely to agency core HRIT systems and generates considerable savings.
- **Agency Internal Cost Factor:** This item captures the annual cost to an agency to internally manage ongoing post-migration efforts, such as the cost to manage the relationship with the SSC or payroll provider, which requires time and labor. This cost factor is included only as an additional consideration and is not included in the core analysis because the HR LOB was unable to obtain sufficiently specific data as only one agency identified this as a potential cost consideration after migration to an SSC.

#### **4.6.1. Other Areas of Potential Savings for Future Consideration**

The HR LOB identified potential cost savings in other areas at agencies that were not calculated as part of this revision to the CBA, but should be considered in future revisions. For example, numerous agencies use their payroll provider's Time and Attendance (T&A) system or have migrated to one of the approved e-Training vendors for their Learning Management System (LMS). Unlike the savings captured in the revised CBA, the savings related to T&A and LMS were not captured consistently across the agencies, primarily due to a lack of available information. The HR LOB will consider studying the potential savings resulting from these areas in more detail with future updates to the CBA.

#### **4.6.2. Qualitative Benefits**

In addition to the quantitative cost savings and cost avoidance calculated in the revised CBA, agencies provided evidence of substantial qualitative benefits on an anecdotal basis. The overall vision of the HR LOB goes beyond cost savings and cost avoidance and includes the additional goals of:

- improved management
- operational efficiencies
- improved customer service

In addition to the very significant multi-year cost-avoidance statistics from their transition to SSCs or payroll providers, some agencies offered examples of meaningful qualitative benefits covering each of the other three goals. Several examples are presented below:

An agency that added e-learning functionality to its existing self-service offerings experienced improved management because learning events now come with time-stamped audit trails, and the e-learning offerings meet OPM EHRI data reporting requirements. The agency also experienced increased operational efficiencies since the effort centralized all training information and enabled the creation of centralized bureau training schedules and curricula that previously could not be prepared effectively. Finally, and perhaps most importantly, the agency improved customer service by offering end-users not only a greatly-expanded set of training opportunities but the ability to access those services 24/7.

Another agency revealed that significant time was saved in the payment of annual performance awards as a result of the move to an SSC. The agency cited how difficult it was to sort through non-integrated legacy HR systems and reams of paper in order to pay awards to thousands of employees. However, given the operational efficiencies of using the "mass-awards" feature of its SSC system, the process was slashed from six months to two. Customer service was improved, having a positive impact on not only the awarded recipients but on those employees who would have had to answer individual questions and resolve problems related to award payments.

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One of the most frequently raised topics in CBA interviews centered on data quality with HR databases and systems. One of the goals of the HR LOB is to free the time of agency HR resources away from administrative and transactional activities so they can focus on more strategic decision-making to contribute to the overall agency mission. However, in order to accomplish this goal, agency HR resources need access to data that both is timely and accurate and at the same time is consistent with other data such as financial data. Too often, the quality of existing HR data is suspect, which makes using the data for strategic decision making problematic. As the access to and reliability of HR data improves, it is expected that HR managers will be more willing to formulate strategic recommendations and base decisions on the higher quality data. Thus, the value of the HR LOB to lead to both greater operational efficiencies and improved management rises over time as more agencies take part and grow in their ability to leverage the data.

## **5. Conclusion**

### **5.1. Findings and Use Cases**

The revised CBA depicts the savings realized by the Federal government as agencies migrate their legacy HR and payroll systems to SSCs or payroll providers. Based upon data collected and the results presented in this report, the current net present value for total cost savings and cost avoidance related to the HR LOB amounts to over \$1.3 billion. The revised CBA also identifies additional benefits and considerations, which increase the current net present value of the total savings to over \$3.4 billion. Additionally, the HR LOB initiative will continue to generate approximately \$200 million in cost savings annually after FY 2015.

The findings from the revised CBA support the HR LOB's overall vision and specific goal to achieve cost savings and cost avoidance. Information collected as part of the CBA revision from the agencies anecdotally also supports the other three HR LOB goals of improved management, operational efficiencies, and customer service.

Completion of the revised CBA also reinforces the importance of cross-agency collaboration to the success of any governmentwide initiative such as the HR LOB. The HR LOB could not have completed its revision to the original CBA without the time and effort expended by the Federal agencies to validate existing information, provide additional content, and clarify and discuss their HR investments in multiple detailed conversations over the past year.

The results and findings from the revised CBA go beyond merely supporting the HR LOB as an initiative. The findings also support agencies making the business case to senior management with respect to their legacy HR systems, including a migration to an SSC. Agencies can adopt a similar approach to the methodology documented in this report as a means to estimating cost savings and cost avoidance and share the overall results from the revised CBA to support their case for migration. The revised CBA can also be leveraged by the SSCs and payroll providers as the basis for requesting and justifying funding to upgrade and modernize their systems.

### **5.2. Next Steps and Recommendations**

The revised CBA is the first step in an ongoing effort by the HR LOB to track cost savings and cost avoidance. The results of the revised CBA will be used as a baseline against which to track cost savings and cost avoidance going forward. The revised CBA will continue to be updated by the HR LOB on a bi-annual basis.

The HR LOB recommends that steps be taken to improve the Exhibit 53 process and guidance, which will both improve agencies' and OMB's visibility into HR investments and reduce the time and effort needed to complete future updates to the HR LOB CBA. Specific improvements and additions to the Exhibit 53 should include:

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- Providing clear guidance as to which investments must be included (at a minimum, fees to SSCs or payroll providers and core HRIT and payroll Investments should be included every year).
- Requesting more information about future plans for the investment including where it is in its life cycle.
- Collecting cost savings and benefits information such as pre-migration costs and post-migration improvements in functionality.

Implementing these improvements will provide improved visibility to agency central planners, OMB, and OPM. HR LOB will continue to work directly with agencies and SSCs to collect, validate, analyze, and understand their HR IT environments, system inventories, current and future plans, and associated spending and benefits to update and further enhance this revised CBA.

## Appendix: HR LOB's CBA and the GAO Cost Estimating and Assessment Guide

The *GAO Cost Estimating and Assessment Guide (Cost Guide)* was established “to address generally accepted best practices for ensuring credible program cost estimates (applicable across government and industry) and to provide a detailed link between cost estimating and EVM<sup>10</sup>.” This section explains the relationship between the principles and practices defined and described in the Cost Guide and the methodology used for the HR LOB CBA update.

For the purposes of the HR LOB CBA, the Cost Guide provided a resource to leverage applicable cost estimating principles and methods. However, since the HR LOB does not have management or operational responsibility for the agency IT investments included in the CBA, the parts of the Cost Guide related to the link between cost estimating and EVM were not applicable to the HR LOB CBA. The ownerships of the IT investments that formed the basis of the HR LOB cost benefit analysis belongs to the partner agencies, not HR LOB. It is HR LOB's assumption that agencies used appropriate cost estimating methodologies, including those described in the GAO guide, to develop cost elements for their Exhibit 53 submissions and other relevant sources.

Some of the Cost Guide principles applicable to the economic analysis and cost benefit analysis apply to the HR LOB CBA. In accordance with the GAO guide, the HR LOB CBA leveraged present value concepts to examine the effects of the time value of money on investment decisions. The key aspect of the HR LOB CBA is that, with the exception of the HR LOB planning costs, the HR LOB relied on source data developed and submitted by agencies to form the basis for calculating benefits and costs associated with the initiative.

In terms of the cost estimating method used, the HR LOB CBA applied the *analogy method* characterized by the following attributes:

- Requires few data
- Based on actual data
- Reasonably quick
- Good audit trail<sup>11</sup>

The CBA leveraged actual data collected from agencies to develop cost estimates for agencies that did not have data available.

In accordance with the analogy approach, HR LOB leveraged existing data and factors (scaling parameters) such as agency population to estimate costs and made every effort to

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<sup>10</sup> GAO Cost Estimating and Assessment Guide, March 2009, p.1.

<sup>11</sup> Ibid, p.108.

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apply the “reasonable person” test – “that is, the sources of the analogy and any adjustments must be logical, credible, and acceptable to a reasonable person<sup>12</sup>.”

As the HR LOB develops future revisions of its CBA, it will continue to use the Cost Guide as a resource for keeping the analysis sound, accurate, and credible.

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<sup>12</sup> Ibid, p.109.





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