
FEATURE ARTICLE

The Evolving Stages of Performance-Based Management in the Security Cooperation Community

By

**Bobby Davis, Patrick Fox, Thomas Keithly, William Barr,
Steve Bowdren, Dan Weiner, Timothy O'Brien, Tom Davis,
Melani Schultz, James D. Piché, and Don Burke
Defense Security Cooperation Agency**

Introduction

Over the past four years, the *Defense Institute of Security Assistance Management Journal* has published several articles on various segments of performance-based management (PBM) within the security cooperation community. This article looks at the current status of these financial management initiatives, and how we are integrating planning, programming, budgeting, and costing in a comprehensive fashion. The article examines in some detail the performance-based costing (PBC) initiative within the Army, Navy, Air Force, and Defense Security Cooperation Agency (DSCA). It also provides a contractor's perspective of the implementation and sustainment of PBC.

These efforts began as a confluence of issues located in the *Government Performance and Results Act of 1993* (GPRA), a critical General Accounting Office (GAO) finding in a 1999 report, and the *President's Management Agenda of 2001* (PMA). Prominent among these issues was the integration of planning, programming, and budgeting to performance, ensuring a more effective use of resources. Specifically, in some form, they called for standardized integration at a sufficient level to provide timely program-level feedback for management.

In the key areas of defense security cooperation, foreign military sales (FMS), foreign military financing (FMF), and international military education and training (IMET), DSCA embarked on initiatives to moving these programs significantly towards the goals cited in the PMA, GPRA, and as a response to GAO findings. These efforts are geared to encourage a results-oriented culture of performance throughout the security cooperation community that clearly links resources to programs with measurable results.

Performance-based budgeting (PBB), performance-based cost and programming (PBC&P) are giving security cooperation organizations the tools needed to understand where FMS and FMF administrative budget dollars are currently spent, an opportunity to strategically decide where they should be spent, and the ability to track program execution against desired results. Together, these initiatives are beginning to significantly improve FMS financial management.

Overview of Performance-Based Budgeting

Performance-based budgeting provides security cooperation organizations with a process to link budgets to corporate strategy, planning, performance measures, and program execution. The PBB enables DSCA to better explain and justify the cost of administering the FMS and FMF programs, whether requesting general inflationary increases or major new program funding, to the Office of Management and Budget (OMB) and the Congress.

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 2004		2. REPORT TYPE		3. DATES COVERED 00-00-2004 to 00-00-2004	
4. TITLE AND SUBTITLE The Evolving Stages of Performance-Based Management in the Security Cooperation Community				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Defense Institute of Security Assistance Management (DISAM),DISAM/DR,2475 K Street,Wright-Patterson AFB,OH,45433-7641				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES The DISAM Journal, Fall 2004, Volume 27, Issue 1, p.1-39					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 39	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

One of the more significant PBB process changes was to realign FMS requirements from solely an object classification breakout i.e., payroll, travel, contracts to one that captures requirements by core function, program element, and object classification. This additional information is key to allow security cooperation organizations the ability to assess program accomplishments as the additional information provides a better understanding of what is being accomplished. Performance measures are a natural adjunct to the core functions and program element structure, provided they are common across the enterprise and clearly understood and defined. Measures need to help organizations assess how well they are executing against their proposed program and budget.

The PBB process is built around six FMS Core Functions, Table 1, developed collaboratively with the military departments (MILDEPs). The core functions parallel the FMS business life cycle. The six core functions are progressively broken into twenty-three program elements, which in turn are further broken down into discrete activities in the PBC models.

Table 1 Core Functions

Core Function	Definition
Pre-Letter of Request (LOR)	Efforts expended prior to receipt of a Letter of Request (LOR), includes responding to inquiries, pre-requirements determination, developing a total package approach (TPA), if required or specifying the mix of FMS and direct commercial sales (DCS) under a hybrid approach.
Case Development	Efforts required to process customer request, gather, develop and integrate price and availability data for preparation of a Letter of Offer and Acceptance (LOA). These efforts continue from receipt of a customer's LOR through case preparation, staffing, and customer acceptance.
Case Execution	Overall coordination to initiate case implementation efforts required to conduct and execute case management, security assistance, team management, technical, logistical, and financial support, and the contractual efforts under acquisition and contracting.
Case Closure	All actions required to perform logistical reconciliation, financial reconciliation, certify line, and case closure.
Business Sustaining	Efforts required in providing employee supervision, leadership, and guidance including personnel management, workload management, and secretarial support that cannot be traced directly to one of the other five core functions or specific cost objectives. Other functions such as international training, budgeting, and training and education of security cooperation personnel are included here.
Other Security Cooperation	All efforts involved in the administration and management of special programs and projects associated with security cooperation requirements, particularly, the non-FMS security cooperation programs authorized under the <i>Foreign Assistance Act</i> , such as the FMF program, the grant Excess Defense Articles (EDA) program, and DCS.

The program elements are a time phased set of resource allocations assigned to the six core functions. Figure 1 shows the twenty-three-program element structure and their relation to the core functions.

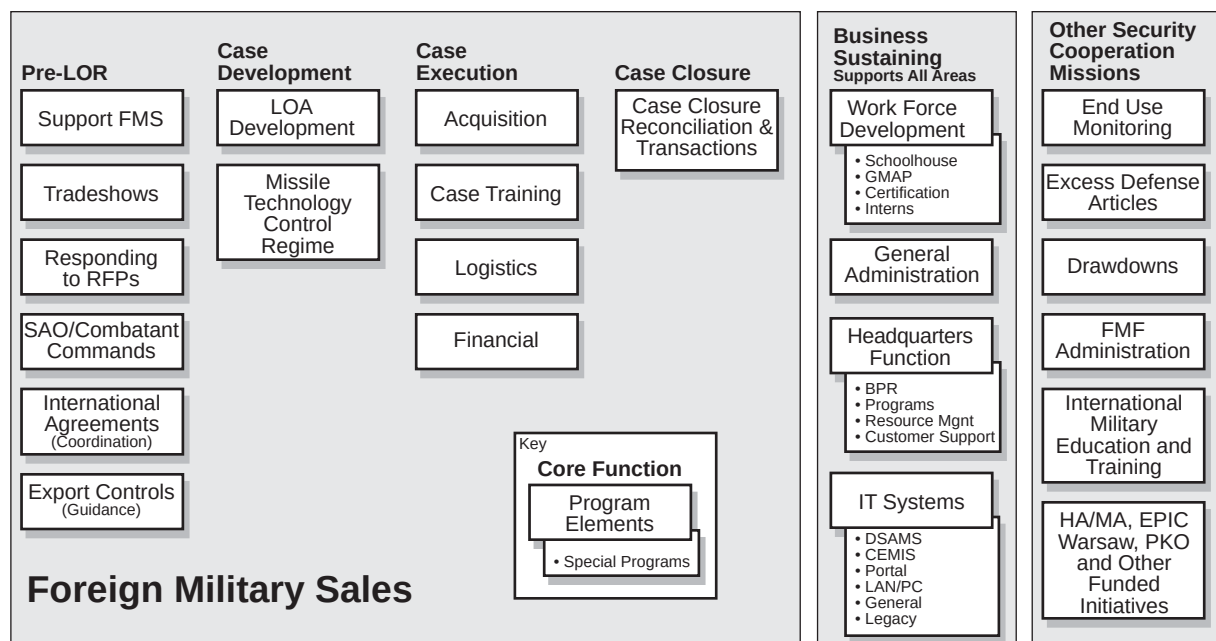


Figure 1 Program Element Structure

Overview of Performance-Based Costing

The recent proliferation of articles on activity-based costing (ABC) techniques and technology, PBC, PBB, and PBM provides evidence of the widespread use of these management tools becoming more pervasive in both the private and public sectors. Used in the context of the security cooperation community, PBC is synonymous with ABC. The fundamental nature of PBC is the relationship between the three main components of an organization's business structure: resources, activities and outputs, as depicted in Figure 2.

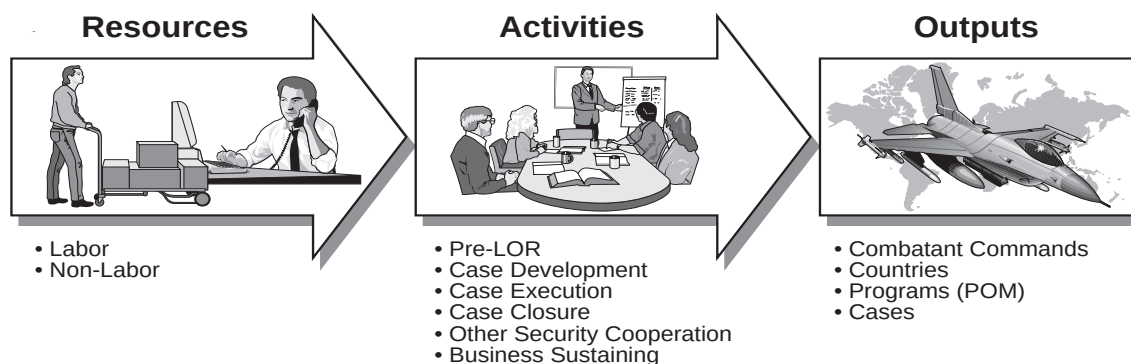


Figure 2 Overview of Performance-Based Costing

The overall objective of the PBC project is to provide an accurate and thorough cost infrastructure of the security cooperation community to support an overall performance-based management process. This is accomplished by providing costs for core functions, program elements, activities, processes, and object classification level data which are used to justify

budgets, provide management with improved cost data, and act as the foundation for future strategic needs. Additionally, PBC allows managers to better understand the macro-level aspects of the security cooperation business, such as the cost structure underlying the FMS administrative rate, the FMF administrative budget, and the appropriate level of annual FMS administrative obligations.

The need to better understand the cost of conducting security cooperation has been a major concern for some time. PBC is designed to provide decision-makers at all levels in the security cooperation community with sufficient cost and programmatic information to effectively manage their organizations. More specific objectives of the PBC project include, but are not limited to the following:

- Calculate total costs, cost by core function, cost by program element, and cost to manage country programs, as well as other cost objects and outputs;
- Compare costs for similar activities across MILDEPs, training commands and military headquarters;
- Calculate costs for each core function or program element, and then compare to FMS or FMF Administrative budget allocation, and finally to execution data;
- Highlight costs in total and by program for all non-FMS functions; and
- Provide cost data to each MILDEP for the purposes of allocating their FMS Administrative budget.

PBC provides the optimum method for gathering and understanding these costs. It assigns resource costs to activities based on the use of resources, and assigns activity costs to products based on the use of activities.

These activity costs are rolled up to twenty-three program elements, and then to the six FMS core functions, previously identified in Tables 1 and 2. Furthermore, PBC shows the costs of core business functions to better justify the FMS administrative budget inputs, and leads to a better understanding of costs in support of the security cooperation program. This overall architecture, as exhibited in Figure 3, provides for a diverse number of models at the activity level while still rolling up to a standardized corporate level. The PBC infrastructure provides a comprehensive look at each organization, the activities performed, and the associated costs. This information is widely used as the basis for program and budget submissions.

The development and implementation of PBC required a number of critical planning, technical and process-related steps. Five distinct technical tasks, occurring in two phases, were identified. The five distinct tasks were as follows:

- Design the costing infrastructure;
- Complete detailed planning;
- Create static ABC models;
- Migrate static ABC models to an active PBC infrastructure; and
- Mature the PBC infrastructure to PBM.

Phase one of the project included design, planning, and static ABC model development. Phase two migrated the static infrastructure to an active environment, and then matured the active PBC infrastructure to PBM.

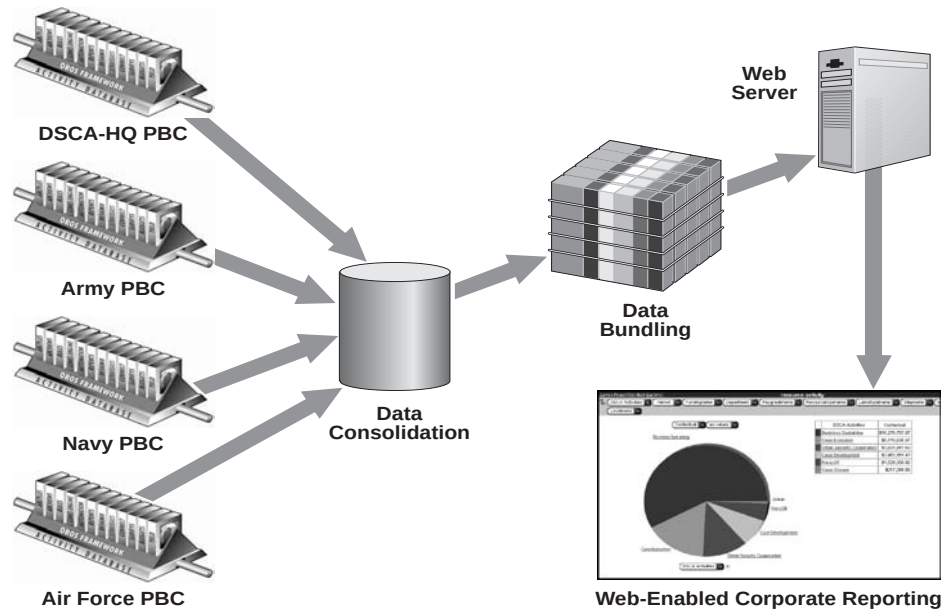


Figure 3 PBC Architecture Overview

Phase I – Design, Planning, and Development

The design and planning tasks were extremely important to the overall success of the project. It set the goals and objects up front, guiding all subsequent decision-making against those targets. In a project of this size and complexity, it was very easy to get off-track, become distracted with peripheral issues, or get bogged down in decision-making unrelated to the core of the project.

The creation of static ABC models was important because it served as the basis for the development of a static or non-automated PBC infrastructure. Since some of the MILDEPs already had models, this phase refined existing models. The objective was to develop a static infrastructure for the organizations participating in the PBC project that conformed to the structure as identified in tasks 1 and 2, met the needs of the Corporate Model, and provided benefit to the MILDEPs and DSCA.

Phase II – Migration and Management

Migrating the static ABC models to an active PBC infrastructure in Phase II included the development of automated feeds and links to update resources i.e., object classification information by interfacing between the appropriate legacy system and the PBC model, and developing methods to update the resource drivers i.e., percent of time spend on or against activities by resources. The final task of Phase II, mature PBC to PBM, entails using the PBC infrastructure to support planning, programming, budgeting, and provides assistance in active organizational decision-making. This phase is important because it sets the stage for maintenance, sustainment, and exploitation of the system.

In April 2001, DSCA began the twenty-four-month project to develop and implement a performance-based costing infrastructure in forty-six of the major organizations in Department of Defense (DoD) performing security cooperation functions. Table 2 shows the participating organizations.

While the DSCA leadership recognized the need for implementing PBB and PBC, and championed these initiatives, major elements of a performance-based environment originated in the MILDEPs. For sometime, both the Army and Navy cross-walked their traditional object class budgets to categories that better explain annual budgets at a program level. Similarly, the Air

Table 2 Performance-Based Cost Participating Organizations

DSCA		
	DSCA-HQ	Crystal City, Virginia
	DISAM	Dayton, Ohio
	DSADC	Mechanicsburg, Pennsylvania
	DLO	Denver, Colorado
	DIILS	Newport, Rhode Island
	DFAS	Denver, Colorado
Army		
	DASA (DE&C)	Arlington, Virginia
	ASA-FM&C	Arlington, Virginia
	USACE	Washington, D.C.
	USAPA	Washington, D.C.
	USAREUR	Germany
	USARPAC	Fort Shafter, Hawaii
	TRADOC	
	SATFA	Fort Monroe, Virginia
	SATMO	Fort Bragg, North Carolina
	OTSG	Washington, D.C.
	MEDCOM	Fort Sam Huston, Texas
	USAMMA	Fort Detrick, Maryland
	USASAC	Alexandria, Virginia and New Cumberland, Pennsylvania
	AMCOM	Huntsville, Alabama
	CECOM	Fort Manmouth, New Jersey
	OSC	Rock Island, Illinois
	SBCCOM	Rock Island, Illinois
	STRICOM	Orlando, Florida
	TACOM	Warren, Michigan
Navy		
	Navy IPO	Washington, D.C.
	NAVAIR	Pax River, Maryland
	NAVSEA	Crystal City, Virginia
	SPAWAR	San Diego, California
	NETSAFA	Pensacola, Florida
	USMC	Quantico, Virginia
	NAVICP	Philadelphia, Pennsylvania
	NOLSC	Mechanicsburg, Pennsylvania
	Coast Guard	Washington, D.C.
Air Force		
	SAF	
	SAF/IA	Rosslyn, Virginia
	SAF/FM	The Pentagon
	AFMC	
	AFMC HQ	Wright-Patterson Air Force Base, Dayton, Ohio
	AFSAC	Wright-Patterson Air Force Base, Dayton, Ohio
	OO-ALC	Hill Air Force Base, Ogden, Utah
	WR-ALC	Robbins Air Force Base, Georgia
	AAC	Eglin Air Force Base, Florida
	ASC	Wright-Patterson Air Force Base, Dayton, Ohio
	ESC	Hanscom Air Force Base, Massachusetts
	AFMETCAL	Newark, Ohio
	AFSPC	
	SMC	Los Angeles Air Force Base, California
	PACAF	Hickam Air Force Base, Hawaii
	HQ AETC	Randolph Air Force Base, Texas
	USAFE	Ramstein Air Force Base, Germany
	ANG	Arlington, Virginia
	ACC	Langley Air Force Base, Virginia
	AMC	Scott Air Force Base, Illinois
	AFSAT	Randolph Air Force Base, Texas

Force Materiel Command (AFMC) and Navy Inventory Control Point (NAVICP) were early pioneers in costing initiatives to improve cost information and operational data, each utilizing ABC principles and techniques.

Overview of Performance-Based Management

Program based management for the security cooperation community is a process built around three stages:

- Data and information gathering and analysis;
- Planning and programming, and
- Budgeting and execution.

Collectively, they form a coherent cycle of events throughout each fiscal year (FY). Each stage is designed to channel information in a way that links resources to program execution. The process includes many key elements of the DoD's Planning, Programming, Budgeting, and Execution System (PPBES).

Stage 1 Data and Information Gathering and Analysis

This stage includes a call for security cooperation issues, the development of sales estimates, and a review of revenue and expenditure projections. The purpose of this stage is to provide an opportunity for DSCA and the MILDEPs to discuss internal and external issues important to the community as a whole. It is also the stage in which the out-year fiscal environment is outlined. It is within this overall environment that initial program and budget estimates take form.

Stage 2 Planning and Programming

Defense Security Cooperation Agency and the security cooperation community have made tremendous advances implementing a process for the planning and programming of requirements and associated resources. The goals are drawn primarily from the *Department of Defense Security Cooperation Guidance* (SCG), associated Regional Commanders' Security Cooperation Strategies, the DSCA Planning Guidance, and the strategic plans and objectives unique to each MILDEP or Defense Agency. With the introduction of the SCG, our community will begin to focus more attention on country and regional priorities.

Programming gives us the means to change. It establishes future funding and manning levels, hence the ability to align goals and resources. It represents a balance between the fiscal realities of a constrained environment, and the need to program funding in support of valid requirements over a window of three years. Program element targets and objectives consider implementing agency (IA) requirements, studies and analysis of income and expenditures, the potential for business process improvements and efficiencies, the exploitation of information technology, any unique nature of an individual program element, and the identification of new missions.

Programming relies on a program element structure that describes our missions and systems. They were defined after laying out the guiding directives, such as the Quadrennial Defense Review and mission statements for DSCA, the MILDEPs, and Defense Agencies. As shown in Figure 1, we developed a common vocabulary to group activities that make up the traditional elements of security assistance such as FMS, FMF, and IMET. It also permits the inclusion of other responsibilities, such as Humanitarian Assistance, the Warsaw Initiative, Enhanced Peacekeeping, or any number of DoD programs for which we have responsibility.

Programming focuses primarily on FMS and FMF administrative funding. It encompasses three programming years beyond the upcoming budget year. We are learning; however, that FMS and FMF Administrative funding cannot be examined in isolation. Appropriations such as operations and maintenance (O&M) or even research and development (R&D) support important

and interrelated segments of the security cooperation business model. In short, our program element structure is intended to encompass all that we do regardless of the funding stream.

Key documents associated with programming, that identify our policy and goals are:

- **Defense Security Cooperation Guidance.** In support of the President's National Security Strategy and U.S. defense strategy, the Secretary of Defense's *Security Cooperation Guidance* (SCG) provides strategic direction for all DoD interactions with foreign defense establishments, and replaces broad-based theater engagement. As we discussed at the DSCA Worldwide Conference in October 2003, we need to move beyond simply understanding the SCG, but take proactive steps to have our work support it. This should affect our long and short-range priorities, especially in reorienting our thinking to focus on regional and country priorities.
- **Theater Security Cooperation (TSC) Strategies.** Regional Combatant Commanders prepare their own Theater Security Cooperation strategy and implementation plan in response to the Security Cooperation Guidance. These strategies also deserve our careful attention as we gain a more detailed and tailored understanding of how we offer the tools of security cooperation to support the Combatant Commanders and the Security Assistance Offices (SAOs) in the region.
- **Defense Security Cooperation Agency Planning Guidance.** The DSCA Planning Guidance, issued for the first time in December 2002, led the planning and programming for the Program Objective Memorandum (POM) 2005 and 2006 cycles for our community. It established an overarching vision and set of objectives for DSCA and the broader security cooperation community.
- **Military Department and Defense Agency Strategic Plans and Objectives.** Defense Security Cooperation Agency produced a Strategic Plan that establishes objectives to support the SCG and comply with the DSCA Planning Guidance. Each MILDEP and Defense Agency established similar documents to define their efforts in conjunction with service and agency unique goals and objectives.

The product resulting from a completed programming cycle becomes a foundation, or "baseline" for the following budget cycle. The product resides online in the official PPBE application, a single submission tool and archive repository. All implementing agencies and their claimants utilize the application. Once a PDM is approved and issued, subsequent budget development for the implementing agencies is much easier; and more relevant, since budget requirements are based on program decisions. The database is delta-based, meaning submissions only need to address changes to the existing baseline for out-year allocations.

A key component of planning and programming is the Program Element Monitor (PEM), who reviews all submissions for technical compliance, affordability, and consistency against stated objectives. Today, the PEM serves primarily as a subject matter expert (SME) for his or her program element. They do not produce or submit programming requests, except for those cases where the PEM is the program manager. The PEM is tasked with establishing objectives and priorities, advising claimants on their submission, reviewing submissions, and assisting in the setting of targets and the allocations of resources.

Crafting a complete program submission has been a challenge requiring careful thought and analysis. The process involves change management, global prioritization, and strategic foresight. Already programming along with PBC and metrics has led to a wealth of information about policy, process and resources, giving us the means to prioritize funding and improve performance.

Stage 3 Budgeting and Execution

This stage begins with the issuance of the FMS and FMF Administrative Budget Call, then to the allocation of resources, and finally execution and closeout. The significant change in this stage is an increased emphasis on narrative and descriptive information that supports each

submission. Initially, this stage included a set of separate performance measures. However, with the implementation of programming and the integration of PBC, performance measures are now consolidated into existing, community-wide measures. Figure 4 provides a graphical depiction of the PBM cycle.

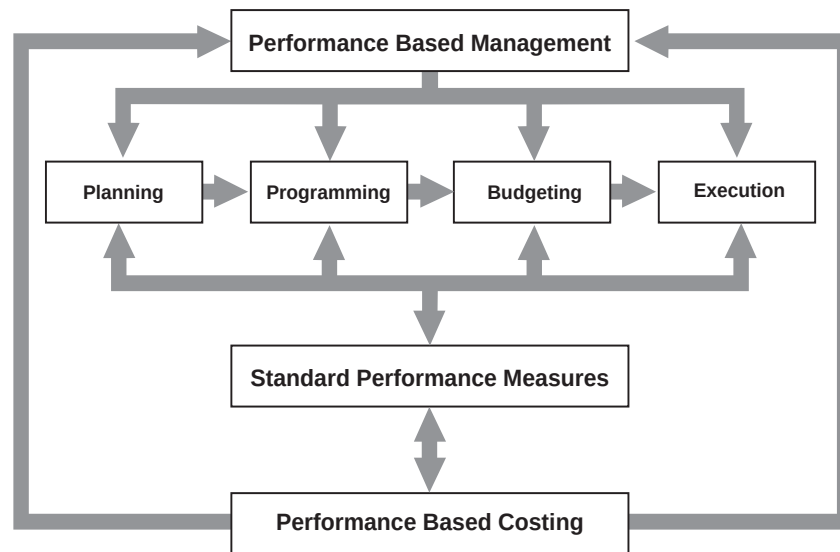


Figure 4 Overview of the Full Performance-Based Management Linkage

Security Cooperation Community Implementation Performance-Based Costing

This section of the article showcases the development and implementation of PBC in the Army, Navy, Air Force (AF), and DSCA. It also provides a contractor's perspective, discussing the project from the outside looking in. In particular, we will look at the participating organizations implementation strategy, how they internalized the PBC infrastructure, and how they are using it to manage their security cooperation programs.

Army

The DoD utilizes a variety of security cooperation tools to provide materiel, services, training, financial assistance, and military-to-military contact through an array of programs and authorities. FMS is one such program. During fiscal years 2001 through 2003, the Army, Air Force, Navy, and other defense agencies averaged combined sales of more than \$12.6 billion per year. As of 30 September 2003, the implementing agencies maintained approximately 12,000 open cases valued at \$222.2 billion.

Executive management within DSCA saw a need for all implementing agencies to adopt a management approach based on performance and results. There are ongoing initiatives to invest in new financial and program management systems, institutionalize a formal PPBE process, and investigate business process changes. In general, DSCA intends to exploit modern technology and internet-based tools to realize efficiency and effectiveness improvements.

Implementation of Performance-Based Costing in the Army

DSCA funded the PBC project to develop costing models for FMS. The modeling, data updating, and reporting comprise the Performance-Based Costing Information System (PBCIS). The system was developed in three steps, shown in Table 3.

Table 3 Stages of Development

Step 1	Develop PBC cost models. The cost models describe DSCA, Army, Navy, and Air Force expenditures in comparable terms. The cost modeling is referred to as Performance-Based Costing, and utilizes ABC principles.
Step 2	Move the PBC models to PBM. PBM allows the data in the PBC models to be updated on a routine basis with minimal effort. The PBM efforts also develop reports, analysis, and web-based access to the cost information.
Step 3	Utilize the cost information to generate budget information as a PBB tool. The primary objective of PBB is the development of a program and budget process that links to a corporate strategy, planning, and performance measures for justification purposes.

Overall, Army users believe the PBCIS will provide their organizations with useful information helping them become more efficient and effective. They envision the PBCIS will be able to help them meet customer requirements, determine productivity measures, and improve the allocation of resources.

The PBCIS included requirements to provide current and historical information for development of trends and to allow for forecasting. The information must be web-based, exportable, straightforward, and viewable in graphical user interface formats. Table 4 lists a description of the other expectations listed by the Army.

Table 4 Army User Requirements

Functional Requirements	Comments
Trace to countries	Based on the Centralized Integrated System for International Logistics (CISIL) and the Defense Security Assistance Management System (DSAMS). Users need to identify the levels of resources utilized to support individual countries or regions.
Roll up information accessible to all, details accessible only to specific organizations	PBC models are able to roll up cost information from the working level to DSCA. Summary cost information should be viewed from the organization all the way to DSCA. In this manner, all organizations would benefit from seeing general cost patterns, while reserving the organization-unique data for their internal use.
Performance-Based Cost Analysis	Ability to measure performance, efficiency and effectiveness of resource utilization. An essential part of cost analysis is the use of what-if scenarios to assess the impacts of differing allocation formulae. Specifically, what-if scenarios would greatly support budget development efforts. The Army can then evaluate the costs and risks inherent in changes to security assistance strategies
Provide Performance Measures	Performance measures are utilized by every organization to judge its efficiency, workload, or business placement. The users would like additional information that helps them assess their strengths and weaknesses through performance measures
Performance-Based Budgeting.	Analysis based on the PBC model results will be useful for resource allocation
Sustainability	System should require minimal support in terms of people, time and training to operate and maintain.

Methodology

With the help of contractor support from BearingPoint[®], the Army is working to ensure that its PBC objectives are met by designing a system that will provide the necessary information for managers to make informed decisions in line with the expectations outlined above. A technical design and architecture plan is in place that will fit the PBCIS requirements and is compatible with existing information technology architectures. The five components of this design include:

- Data Gathering Warehouse;
- Cost Modeling Software;
- Actionable Data Warehouse;
- Analysis and Reporting Software; and
- Web Delivery.

Army Performance-Base Costing Infrastructure

Army developed five components that constitute its internal PBCIS. These components are described in the sections below, and are developed and implemented within a single network. Once the data has been collected and processed through the current system, the results are posted through a web delivery format that can be viewed at any location. Figure 5 shows a diagram of the PBC infrastructure system setup.

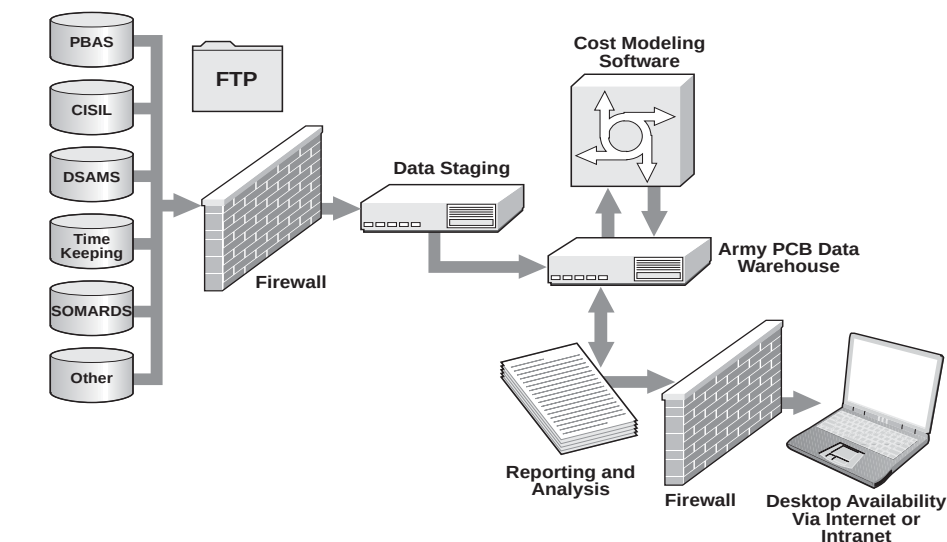


Figure 5 Performance Base Costing Infrastructure System Setup

Cost Modeling

The Army has utilized Activity Based Costing principles at numerous organizations. The Army's Cost and Economic Analysis Center (CEAC) selected SAS[®] Oros[®] ABC software suite as their standard software. This is the same software suite selected and used by DSCA.

Army Performance-Base Costing Data Warehouse

The Army PBC Warehouse is where cleansed, calculated, and aggregated data are positioned. The purpose of this actionable data warehouse is to put the data into formats readily available for analysis and reporting. The warehouse contains numerous data marts. Many of these data marts will be designed using On Line Analytical Processing (OLAP) formats; these are multi-dimensional databases, sometimes referred to as "cubes". This is where the historical data sets will be available for comparisons and trend analysis.

Analysis and Reporting

The Analysis and Reporting component is where the cost data is placed into perspective, fit into mathematical descriptions, and is presented in meaningful manners. The analysis software provides a means to access appropriate data, carry out any required calculations, examine data marts from the appropriate dimensional views, and transfer the results to the appropriate report. Ad hoc queries are required for non-routine assessments; these queries can be completely authored, provide drill down details, or modify existing queries.

The reporting component allows complex reports to be distributed over a web-based enterprise. The reporting tool permits reports to be displayed in text and graphical formats. It also permits queried data to be downloaded to users in various formats, i.e., PDF or Excel. The reporting tool provides a variety of standard reports for ease of use. A proven software package for these requirements is the Cognos[®] Business Intelligence suite that provides multi-dimensional views of the data. The following graphics depict sample web reports generated using Cognos[®] and are currently being used by the Army:

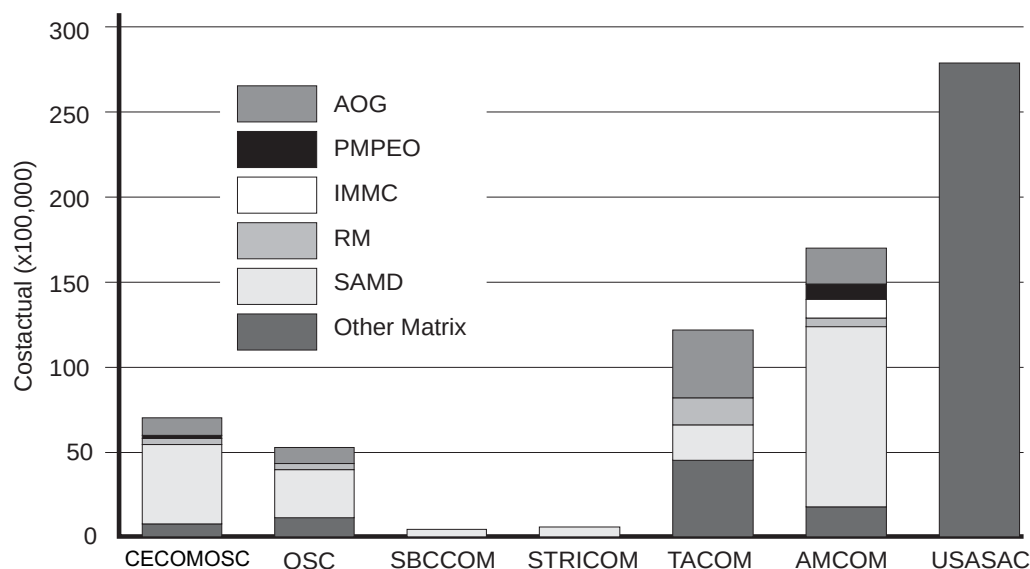


Figure 6 Cost by Sub-Organizations

Web Delivery

The PBCIS delivery is web-based. It is crucial that the FMS information be readily accessible by all commands and as many personnel as possible to have maximum impact. The Cognos[®] Business Intelligence Suite is designed to provide easy transfer of data and reports via the web. Figure 8 depicts the PBC data cube dimensions that are used to post reports via the web.

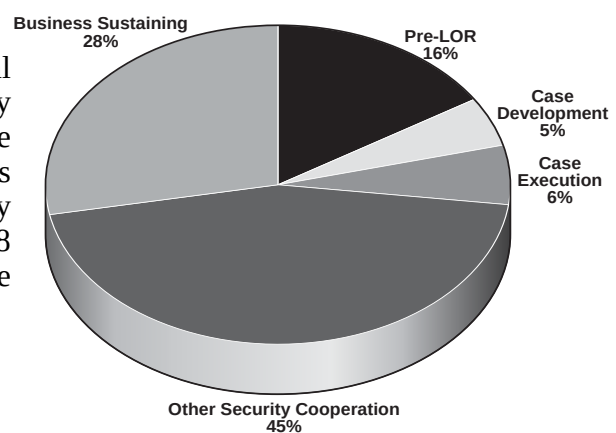


Figure 7 Core Function Costs
Does this match your mission and strategy?

Table 5 Breakdown of Activities by Funding

Activity	FMS Administration	MPS	OMA	Total Cost
Perform Pre-LOR Activities	\$388,095.14	\$69,937.50	\$154,404.33	\$612,436.97
Develop and Prepare LOA	\$154,688.69	\$34,968.75	\$18,750.00	208,407.24
Implement Case	\$77,617.21	\$4,662.50	\$2,500.00	\$84,779.71
Manage Program, Case, and Lines	\$131,902.89	\$11,656.25	\$6,250.00	\$149,809.14
Management Oversight of Export Activities	\$373,753.91	\$0.00	\$269,612.02	\$645,365.93
Perform Other Security Cooperation Activities	\$607,294.42	\$69,937.50	\$380,117.77	\$1,057,349.69
Develop Policies and Procedures	\$305,504.14	\$11,656.25	\$113,651.50	\$430,811.89
Develop and Execute Budget	\$99,376.29	\$0.00	\$18,184.24	\$117,560.53
Internal Training	\$14,332.61	\$2,331.25	\$4,548.06	\$21,209.92
Perform General Administrative Services	\$192,278.09	\$23,312.50	\$36,366.48	\$251,959.07
Perform Management Duties	\$138,921.05	\$2,331.25	\$36,368.48	\$177,620.78
Perform Manpower Activities	\$80,092.70	\$2,331.25	\$4,546.06	\$86,970.01
Provide Information Technologies Support	\$8,404.05	\$0.00	\$4,546.06	\$12,950.11
Totals	\$2,574,261.00	\$233,125.00	\$1,049,845.00	\$3,857,231.00

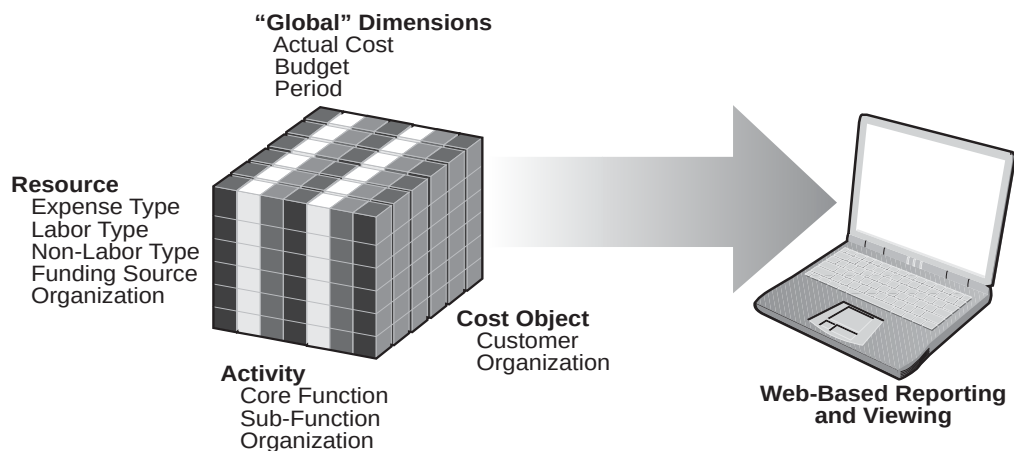


Figure 8 Performance-Based Costing Data Cube Dimensions

How Performance-Based Costing Is Being Used in the Army

Current governmental budgeting and accounting systems provide information categorized by obligations and expenditures e.g., salary, travel, information system. Army PBC models express costs in relation to their operational processes, activities, and services. Additionally, the cost model results for all of the MILDEPs roll up to develop a cost-workload overview for the entire FMS program. The Army cost managers develops appropriate benchmark measures and assess the meaning of the cost data.

A further objective of PBC modeling is to create cost information that supports the development of PBB models. The Army uses these PBB models to assess the impacts of proposed program and budget priorities workloads and priorities upon their resource and funding needs in alternative scenarios. Army FMS managers are able to evaluate competing priorities that identify program and budget approaches based on performance and results. Thus, the development of

FMS programs and budgets is associated with workload and strategy. Other uses for PBC within the Army are as follows:

- Determine how well we budget and execute against Army priorities.
- Ensure that activities are properly funded.
- Ensure that resource allocation is fair and equitable.
- Measure workload and performance.
- Project out year resource requirements.
- Focus process improvement efforts in areas where we get the best return on investment.

Initial Results from Performance Base Costing

The overall findings of the analysis of the fiscal year 2003 PBC data include the following.

- Execution of FMS Administrative funds gradually increased each quarter in fiscal year 2003, from approximately \$18 million in the first quarter to \$23 million in the last quarter.
- Case execution costs totaled approximately \$64 million in fiscal year 2003 with an average of \$15.5 million per quarter.
- Business sustaining costs are a significant portion of the overall Army costs, comprising 32 percent of the total Army FMS Administrative costs
- A significant amount of FMS cases are being developed each quarter, the majority of which are less than \$1 million in value and do not generate sufficient fees to cover costs.
- All MILDEPs are showing similar trends. For example, cases are taking at least five years to process (implementation to closure) regardless of the size of the case. The exceptions are cases valued at more than \$500 million, which represent a small fraction of overall cases written.
- Cases are staying open well beyond their estimated scheduled delivery time.

How Performance-Base Costing Supports Other Initiatives

By creating several reports that provide different sets of data, PBC has the capability of supporting other methods of performance management. The following reports provide different views of financial, labor hour, and workload data that can be used to better manage and help make more informed decisions in regards to the Army's FMS business process.

- Standard Reports - Pre-made templates are available to the average user with the objective of providing frequently viewed information more readily.
- Ad-hoc Reports - These reports are constructed by users, using a web interface to a database, or by users designated as super users. Ad-hoc reports answer non-standard questions and meet unique requests.

These PBC reports also benefit Army FMS business process decisions in the following ways:

- Make cost drivers and activities that dictate resource requirements visible and measurable.
- Provide management with greater insight into the factors that consume resources.
- Identify how activities contribute to outcomes.
- Free up resources to allow the security cooperation community to focus on the activities that matter most to FMS customers.
- Improve budget forecast accuracy.
- Accurately reflect actual costs within the organization.
- Identify requirements which will result in more appropriate funding levels.

-
- Determine what level of funding should be applied to particular services.
 - Discover opportunities for process improvement.
 - Increase visibility on how effectively resources are being used and how all activities contribute to the cost of Army programs.
 - Identify activities with disproportionately large cost and little added value which could be eliminated or reduced.
 - Improve strategic and organizational decision making.
 - Assist decision-makers in making cost-conscious decisions at all organizational levels.
 - Promote proactive cost reduction rather than reactive performance problem investigation.

Lessons Learned from the Performance-Base Costing Experience

During the three-year project, Army has been able to observe the business processes of the Army security cooperation community. Several key outputs such as the Cognos[®] reporting tool and PBC models, provide additional insight and suggestions for improvements in moving forward. Based on past experiences, the following factors have been identified as the keys to future PBC success:

- Assessment of financial data sources to improve consolidation and analysis. Identification of one system as a single source of data would significantly improve accuracy, improve turn-around time, and reduce resources required in gathering and reporting the information.
- Document management system. Using a document management system, standard forms are shared electronically and automatically tracked, reducing turn-around time and improving accountability.
- Project management system. A simple, web-enabled project management system could be implemented to capitalize on the existing PBC data (cost, resource, and workload data). This system would be enhanced by a future document management system, which would provide standardized procedures and workflow. A project management system would promote standard work breakdown structures for different case types, as well as improve turn-around time and accountability.

The PBC project for the Army is currently in the sustainment period. Our support contractor provides quarterly updates to the models and reports. These quarterly updates consist of receiving financial, labor hour, and workload data from the Army, importing these figures into the PBC Models, and uploading them into formats that can be viewed by the end user through web reports. Once these updates are completed, the focus is shifted toward analyzing reported data and information. They can enable an organization to examine the following questions:

- How do the different organizations within the Army differ from one another in reference to costs?
 - What is the relationship between cost and workload effort?
 - How should resources be allocated?

Several applications are available to answer these questions. Examples are:

- Profitability Analysis;
- Target Pricing;
- Strategic Alignment; and
- Process Improvement.

Defense Integrated Financial System Analysis

The objective of the Defense Integrated Financial System (DIFS) analysis is to analyze the administrative cost of FMS cases in order to identify where costs are being incurred. This analysis is facilitated through the organization of cases by size and system. By performing cost comparisons based on supplied data, Army will be able to identify which systems are disproportionately more costly so that analysis can be focused on identifying major cost drivers. This analysis will enable us to determine the break-even points of cases, i.e., the point at which delivering additional amounts of articles or services results in greater administrative costs to the MILDEPs.

Next Steps

The next steps for PBC are to identify methods of comparing various costs across all MILDEPs and using this data to build common metrics for certain business conditions. Three main objectives for the analysis portion of PBC have been identified. They are:

- Unit costs for services/products or client groups;
- Cost, performance and productivity metrics; and
- Simple cost-volume relationships (analysis of alternatives).

Several methods of PBC workload analysis have already been implemented in order to develop future projections and strategic planning. The following corporate analysis items have been identified:

- Case development analysis;
- LOAs offered;
- Number and case size (dollar value) by MILDEP;
- By system (generic code) or case type;
- LOAs implemented;
- Number and case size (dollar value) by MILDEP;
- By system (generic code) or case type;
- Implemented versus Offered;
- Efficiency ratio by MILDEP or country, and;
- Country versus system and case size.

According to initial Case Development Analysis:

- A large number of cases are being developed every quarter;
- The majority of new cases are less than \$1 million in value; and
- The volume does not make up for smaller-sized cases.

Case Execution Analysis Items

- Active cases;
- By MILDEP, case size and system;
- Case status;
- Percent services delivered (service delivery status);
- Age of case;
- Service delivery status versus case age;
- Case activity level;
- Time since last transaction;

-
- Service delivered last quarter;
 - Work backlog level;
 - Services remaining to be delivered;
 - New work vs. service delivered (net balance for quarter);
 - Unit cost versus service delivery;
 - Unit cost calculation by case, and;
 - Service delivery by case.

According to initial Case Execution Analysis:

- All MILDEPs are showing similar trends;
- Cases are taking five years to process regardless of size (except for extra large cases), and;
- Cases are staying in the system beyond their estimated closure date.

The implementation of PBC, the Army hopes to provide overall visibility of the cost of work or service for the Army's FMS process. Further analysis suggests several steps that may allow managers to make informed decisions faster and get results sooner. PBC analysis will enable them to use cost data to generate and justify budgets, create customized user reports that can be tailored to the unique needs of managers and decision makers at all levels, and model and analyze alternative scenarios for developing courses of action that will enhance the quality of Army security assistance services while increasing organizational effectiveness.

Department of Navy and U.S. Coast Guard

Introduction

Fixed budgets and increased requirements are commonplace performance challenges in the Department of the Navy (DoN) and the United States Coast Guard (USCG) security assistance community. To answer the challenge across the DoN, the Undersecretary of the Navy in 1999 encouraged Navy Commands to undertake ABC projects to gain better insight into business processes and costs. Meanwhile, the Navy began several Enterprise Resource Program (ERP) pilot projects that included an Activity-Based Costing capability at the major Systems Commands:

- Naval Air Systems Commands (NAVAIR);
- Naval Sea Systems Command (NAVSEA);
- Space and Naval Warfare Systems Command (SPAWAR); and,
- Naval Supply Systems Command (NAVSUP).

The Naval Inventory Control Point International Programs office (NAVICP-OF) began the first security assistance-specific project in 2000 to determine the usefulness of ABC in a FMS business environment.

The DoN and the United States Coast Guard (USCG) Security Assistance Organization PBC effort is three-phased. The first phase expanded the NAVICP effort to Navy IPO HQ and the United States Marine Corps (USMC) Security Assistance Organizations (Headquarters USMC, MARCORSYSCOM, and Security Cooperation and Education Training Command). After successful starts in these organizations, the second phase implemented PBC into the remaining security assistance offices Naval Education and Training Security Assistance Field Activity (NETSAFA), SPAWAR, NAVSEA, NAVAIR, USCG, and the Navy Operational Logistics Support Center (NOLSC). By April 2003, all DoN and USCG FMS organizations had operational PBC systems. Each implementation accommodated the different business processes at each command. Although each organization is at a different level of maturity in PBC, the system is

providing crucial insights into key activity and process costs. Each command is now in the third phase of sustaining and exploiting the PBC data. Initial results in PBC have helped DoN improve budget justifications, allocate resources better, and identify opportunities for process improvement.

Scope and Organization

About 1,000 DoN and USCG personnel provide activity data into the PBC system on a regular basis. A PBC coordinator at each of the participating organizations administers the PBC system and tries to integrate PBC with internal business processes and databases. Coordinators help educate employees and management on how to use the costing data. Across the DoN and USCG FMS enterprise, individual efforts are coordinated by a PBC Working Group, which shares best practices across the DoN and ensures consistency in implementation and data collection. The Security Assistance Council (SAC), comprised of the leaders from each of the DoN and USCG Security Assistance organizations, provides high-level review and monitoring.

How Performance-Based Costing Works

Figure 9 shows how the PBC system works. There are three key steps in producing useful Performance-Based costing data. The first step involves obtaining activity information from each employee. All personnel enter their time via an activity survey or time and attendance system, which includes all activities defined in the organization's activity dictionary. Most commands use a web-based collection tool called the Periodic Activity Survey System (PASS). The second step uses a proprietary software program as a cost model of the organization. This model also calculates and "crunches" the activity information resource data (salary, contracts etc.) from each person, at each command, to provide activity costs for designated cost centers or cost objects (countries, processes, etc.). The third step is to convey the information in an accessible format via the web. This step provides real-time web-based reporting and is the basis for DSCA-wide reporting on overall PBC results. Middle and senior level management view the password-protected cost data for resource management decisions.

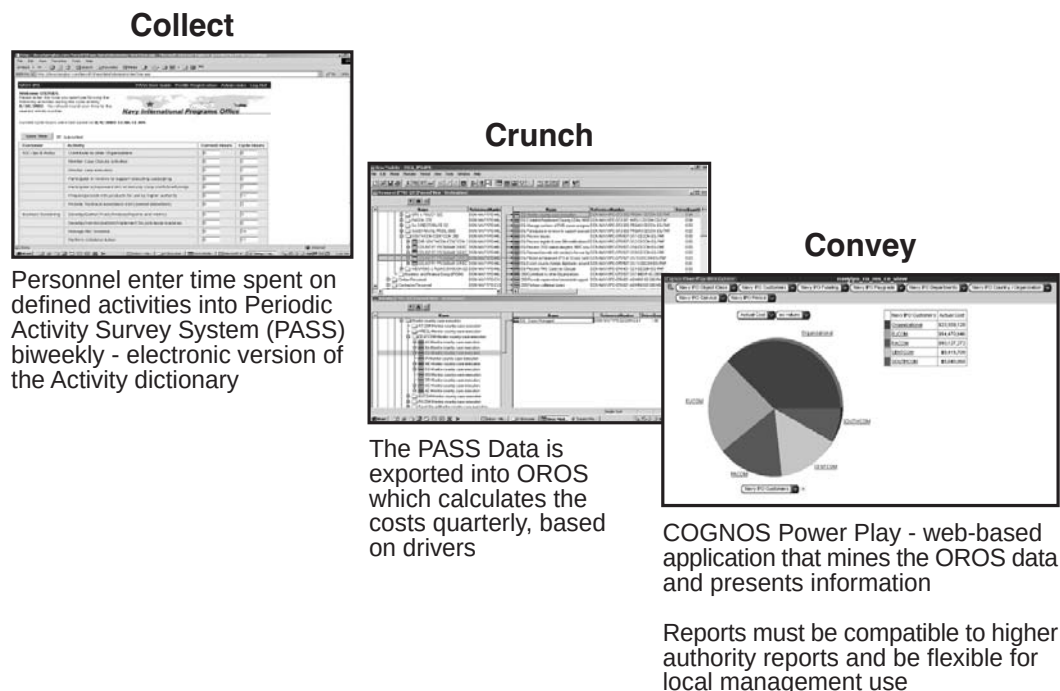


Figure 9

How Performance-Base Costing is Used

While the overall PBC project is still maturing, sufficient data is available for analysis. At this stage in PBC implementation, DoN and USCG security assistance commands have gained greater insight into activity costs. They have been able to more appropriately define command activities. Organizations are beginning to use the PBC data to support budget and program submissions and for internal resource management decisions. For example, in 2004, Navy IPO used PBC data to justify increased funding for managing a new DoD initiative to provide human immunodeficiency virus and acquired immune deficiency syndrome (HIV/AIDS) material via FMS cases. Navy IPO also made extensive use of PBC data to highlight funding versus requirements gaps and to compare budgets to requirements across the DoN and USCG FMS organizations. Figure 10 shows the actual PBC costs incurred against requirements, compared with the anticipated funding levels for various programs. Where the gray line is above the solid black line, our total costs exceed resources designated to meet those requirements. Other resources must be used to ensure requirements are met. The ability to analyze and present data in this way allows the DoN and USCG to provide further justification for its funding requests, as well as to determine possible areas of cost savings. It is also the only current way to display how budget and program guidance is executed since traditional object class data (labor, travel, other services ADP, etc.) provides little visibility into what activities funds are spent on.

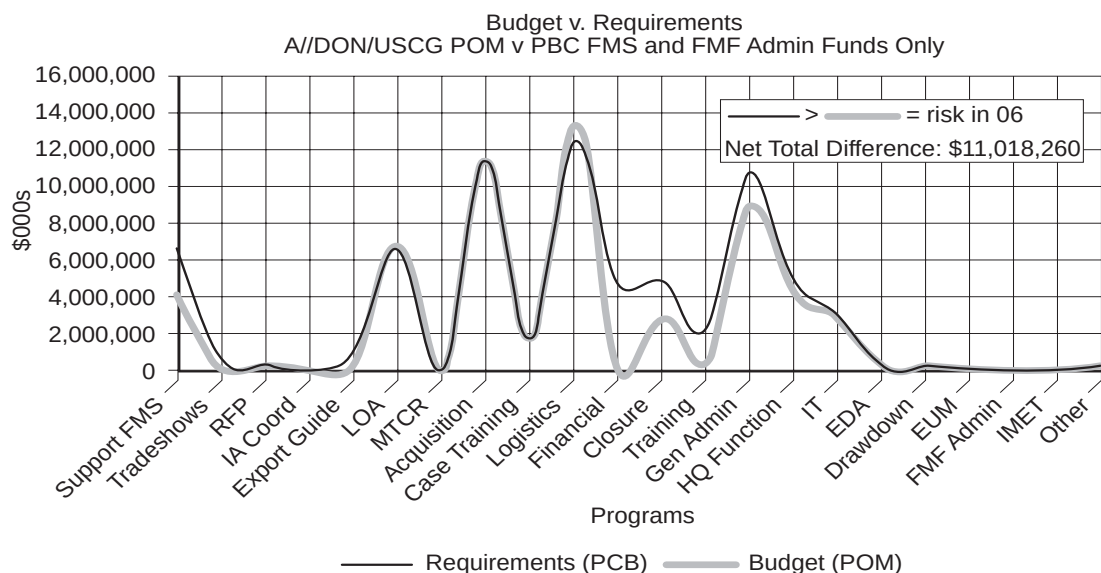


Figure 10 Actual Performance-Base Costing Costs Incurred Against Requirements

Additionally, when combined with non-PBC information on key outputs like number of FMS cases in execution or number of FMS cases closed, Navy IPO can determine which countries consumed the greatest resources in relation to the key outputs. Table 6 shows an example of the reporting possibilities when PBC data is combined with output measures. In this case, an example of an output measure is the number of LOAs implemented in the case development core function. Cost data is compared to output measures specific to the various FMS core functions. This allows the command to identify countries with the greatest and least efficiencies (greatest cost with least output) in processing LOAs. Note in Table 6 that Country 11 had the greatest costs but no LOAs were signed. Managers are able to examine variances between countries that consume resources. For example, countries 2, 3 and 6 all closed 21-23 cases, but costs ranged from \$2,335 to \$11,234.

Table 6 Planning Budgeting Costing Data Measures

Fiscal Year 2003 Navy IPO Actual	Pre-LOR	LORs	Case		Open Cases	Cost		Other Security	Business Sustainment	Grand Total
			Development	Execution		To Close	Closed			
Region 1										
Country 1	\$53,337.00	9	\$24,018.00	5	26	\$1,465.00	0	\$80,966.00	\$132,165.00	\$326,842.00
Country 2	\$38,107.00	14	\$16,313.00	13	182	\$2,335.00	23	76,576.00	\$132,165.00	\$312,615.00
Country 3	\$18,283.00	23	\$25,920.00	42	310	\$4,605.00	23	\$70,610.00	\$132,165.00	\$304,880.00
Country 4	\$33,896.00	12	\$20,254.00	14	119	\$1,465.00	16	\$57,442.00	\$132,165.00	\$293,346.00
Country 5	\$24,299.00	44	\$17,491.00	46	220	\$4,274.00	31	\$66,323.00	\$132,165.00	\$289,187.00
Region 2										
Country 6	\$119,091.00	16	\$44,284.00	23	222	\$11,234.00	21	\$190,284.00	\$158,429.00	\$736,626.00
Country 7	\$50,268.00	162	\$65,60.00	88	707	\$5,458.00	137	\$87,733.00	\$158,429.00	\$430,526.00
Country 8	\$65,793.00	24	\$18,033.00	34	218	\$1,474.00	17	\$67,223.00	\$158,429.00	\$376,047.00
Country 9	\$51,261.00	28	\$25,906.00	27	370	\$1,474.00	37	\$72,460.00	\$158,429.00	\$351,290.00
Country 10	\$44,849.00	10	\$14,962.00	3	43	\$1,794.00	1	\$44,039.00	\$158,429.00	\$295,215.00
Region 3										
Country 11	\$54,376.00	4	\$12,321.00	0	80	\$1,725.00	1	\$273,931.00	\$584,404.00	\$1,035,808.00
Country 12	\$45,226.00	16	\$22,419.00	11	40	\$3,694.00	4	\$115,151.00	\$265,932.00	\$490,256.00
Country 13	\$40,599.00	21	\$18,230.00	14	175	\$3,361.00	12	\$106,176.00	\$132,966.00	\$460,691.00
Country 14	\$92,766.00	2	\$12,439.00	3	48	\$7,064.00	5	\$83,216.00	\$132,966.00	\$378,088.00
Country 15	\$33,637.00	40	\$18,630.00	34	343	\$1,970.00	93	\$35,221.00	\$132,165.00	\$270,666.00

Other FMS organizations use PBC data aggressively to help improve FMS business processes. For instance:

- NAVICP (NAVICP-OF), in biweekly meetings, looks at outputs instead of simple cost data. NAVICP began a methodical review of its activities and costs focusing on areas of high cost across the command and by department. NAVICP is using PBC data to support a NAVSUP enterprise initiative involving the accumulation of cost data to ensure a common understanding of the process and equal treatment of conditions across the enterprise. The NAVICP International Programs Directorate was able to respond to the call for the NAVSUP Products and Services initiative costing data using its PBC data and alternate drill-downs in their web-based reporting tool to identify a separate roll-up of FMS identified products and services/processes costs. Having an array of cost information by products and services, managers can explore costs more deeply and begin to ask the right questions.

- NAVAIR (AIR 1.4) incorporates PBC data into normal business processes and using data to measure its business plan execution. Areas under review are return on investment, operational improvement success, and deviations between budget planning and budget execution. For example, as geopolitical climate shifts, the focus of international programs may shift amongst the foreign customers in the security assistance arena. PBC data provides a means for gaining an understanding of where there is a return on investment and in whom the community is investing the majority of its time and money. In addition, NAVAIR is planning to use specific activity costs as an indicator of whether or not the various operational improvement efforts it undertakes are successful. For example, if the goal is to reduce the amount of time and money spent on putting together price and availability (P&A) packages, implementing a standardized P&A package throughout Naval Aviation International Programs might facilitate the accomplishment of that goal. If over time, the total cost of developing P&A packages decreases and the value of new FMS cases signed remains constant or increases, this may indicate that the initiative was successful.

- NAVSEA (SEA-63) formed an internal PBC Project Team Working Group and is working towards PBC integration with ongoing Enterprise Resource Planning (ERP) efforts. The purpose of the PBC Project Working group is to evaluate, create and review current business processes and procedures that can benefit in the use of PBC while establishing best practices efforts as a result of PBC resource outputs. NAVSEA's Systems Integrations Branch acts as the Lead for PBC Project Team Working Group and has established an *FMS Management Information Systems Conference* that includes PBC overview presentations and PBC workshops to inform and educate the NAVSEA FMS community on PBC efforts and developments. The first conference was held in July 2004 and subsequent conferences will be held bi-annually to assist in maintaining an informed PBC community. NAVSEA also adopted PBC as a tool used at various levels in the budgeting process. PBC data is reviewed for budget planning, budget reviews and budget execution throughout the planning and budgeting cycle. The NAVSEA FMS budget community uses the PBC system to provide feedback on specific activities to project or case managers to help them improve business processes and incorporate best business practices. Also just as other communities use PBC data to help understand where there is a return on investment and in which customers the community is investing the majority of its time, NAVSEA tracks and analyzes selected activity data elements to determine the cost and time involved in current FMS processes such as gathering of P&A data and the LOA implementation process. Additionally, PBC data is monitored to ensure proper resource allocation across the enterprise resource process. Finally, NAVSEA is examining an initiative for a virtual web based training package that would serve as a "one stop shop" for PBC and PBC training and make continuous training available to the FMS community.

-
- SPAWAR (SPAWAR 07) uses PBC to make decisions concerning resource allocations by country and to forecast future acquisition costs.
 - NETSAFA, USCG and USMC sees better activity alignment and are gaining insight into actual mission costs.
 - Navy IPO uses PBC data to analyze FMS resource allocations across its claimants. Using a resource allocation-modeling (RAM) tool, Navy IPO is able to alter assumptions, e.g., the combination of workload (amount of service delivery), budget, PBC cost data, demand elasticity and projections, and capacity information) to project and assess resource shifts. PBC data will assist Navy IPO in its future FMS administrative budget allocations and other resource-related decisions.

Top Floor to Shop Floor Buy-In

Leadership support is crucial to all three phases of the PBC project. In the implementation phases 1 and 2 government employees were understandably skeptical that PBC was just another short-term management idea. Union members were skeptical that management was trying to get more insight into employee activities to justify reductions in force. Contractors supporting the government were hesitant to share labor hour data for fear competitors would have access to their proprietary information. Leadership's steady support and advocacy of the PBC project has helped lead the workforce away from skepticism to understanding and support. Widespread use and reporting of PBC has shown that the data is useful and beneficial to all levels in the organization.

Change Must be Sold

PBC is no longer a fad, and is now a chapter in accounting textbooks. But its application remains very limited across the DoD. The Department of the Navy (DoN) and the United States Coast Guard (USCG) security assistance activities have in many cases spearheaded this new tool within their larger organizations. Being on the cutting edge of new techniques is challenging enough. But, simultaneously changing the business while managing it is especially difficult and required a comprehensive approach to managing the changes required to implement an effective PBC program. Numerous all-hands meetings were held, with several training sessions and continued follow-up sessions. Activity dictionaries listing the key functions and activities performed at each organization are periodically reviewed. Navy IPO has developed a website that lists training opportunities, education on PBC and other DoN PBC resources.

Garbage in = Garbage Out - Accurate Data Entry is Crucial

Without accurate data; there can be no confidence in the analysis or results. Any data system is only as good as the accuracy of the input. Accurate employee activity data and resource data is essential to getting understandable and sensible reports that can assist decision-making. Keeping activity dictionaries refreshed to reflect new requirements and tasks is important. Most errors occur due to a lack of training and supervisory review of data entries.

Actual Use of the Data Increases Buy-In

One of the most effective PBC education tools is the actual use of the data. Demonstrating the why of the process instead of just the how significantly increased buy-in within the organization. The project also received a jump-start when existing data or structure could be used, rather than starting from a blank slate.

Category Changes Make Comparison Difficult

The DoN and USCG have learned that as the PBC models are changed or revised, the more difficult it is to compare results year over year. It is important to do a thorough initial job of developing the activity dictionary to limit the need for changes. If existing data is available, the organization should consider using it first. Knowledgeable administrators are also important in

maintaining the configuration process; to ensure that quarterly updates and analysis are meaningful.

Communication

Meaningful communication both within a PBC implementing organization and with other DoN and USCG organizations is vital to the project. This included both horizontal and vertical two-way communication, between managers and employees, as well as across organizations. Between organizations, it was helpful to share implementation practices, as well as discuss activity dictionary language and functions.

Next Steps

The DoN and USCG security assistance organizations have invested over three years in PBC and are squarely in the sustainment phase of the project. Remarkable progress has been made considering that many PBC (or ABC) projects wither or fail. During the sustainment phase, the focus of effort will be to continue automating the time and resource data collection process and increase analysis of the collected data. Especially challenging will be ensuring the PBC system interoperate with emerging enterprise resource programs and new financial and time-keeping systems, especially at the Navy Systems Commands. Specific next steps are listed below.

- Automating the PBC Models Update Process

Currently, changes to activity dictionaries must be manually checked and updated in the time reporting and model software. Automating this process will make quarterly reports faster to generate, and allow DoN organizations more time to review and analyze the data.

- Standardize Activity Dictionaries

As changes to the program elements are reduced and stability in the program and budget process is achieved activity dictionary standardization across all DoN and USCG security assistance organizations will improve data analysis and enable better consolidated reporting.

- Periodic Activity Survey System (PASS) Updates

PASS version 2.5 final testing has begun. This new version will allow more flexibility to administrators, and greater ease of use for end users.

- Continued Training

Training in the web-based time collection systems (PASS) and the online web-reporting tool Cognos[®] Power Play will continue to build a larger pool of expert users at participating organizations. A better understanding of how the data is displayed will result in better analysis and use of the collected data.

- Data Analysis

The availability of two years of collected data will allow for increased analysis of performance and costs. This should lead to better-informed budget requests, as well as an opportunity to identify areas for improvement and savings.

Summary

The first two phases of the PBC project are complete and successful. But, PBC by itself solves no problems. The success of the 3rd phase sustainment and exploitation is entirely in the hands of the security assistance community. Costing information visibility and fidelity is quickly improving throughout the DoN and USCG security assistance organizations. But, without a cost-wise approach to activities and an attitude that strives to improve processes, the PBC data will gather dust. In an era of increasing requirements but flat budgets greater efficiency and effectiveness is often the only way to get the job done. Our leadership recognizes that performance-based costing methodologies offer considerable insight into accurate, enterprise-wide costing information. And, our customers recognize that we are more conscious of our costs.

Air Force Introduction

The performance-based costing/management (PBC/M) effort within the Department of the Air Force is beginning to make significant strides in charting process cost for its security cooperation program. The Defense Security Cooperation Agency's PBC project was embraced by the Air Force because its senior leadership believed that PBC would allow the Air Force to respond more proactively to FMS demands.

The base methodology for the DSCA PBC project is ABC. ABC seeks to eliminate the guesswork and estimating of the costs of doing business by carefully assigning resources utilized to activities performed and then assigning those aggregated activity costs to the products or services produced. This approach provides a clear picture of how resources are consumed in an organization, allowing for improved analysis including strategic planning and identification of Business Process Improvement (BPI) opportunities.

Implementation of Performance-Base Costing in the Air Force

The AF PBC effort captures the entire AF security cooperation community in four major models: the Deputy Undersecretary of the Air Force for International Affairs (SAF/IA) model, the Air Force Security Assistance Training Center (AFSAT) model, the Air Force Materiel Command (AFMC) model, and the Air Force Security Assistance Center (AFSAC) model, which are summarized in the AF corporate model, as shown in Figure 11.

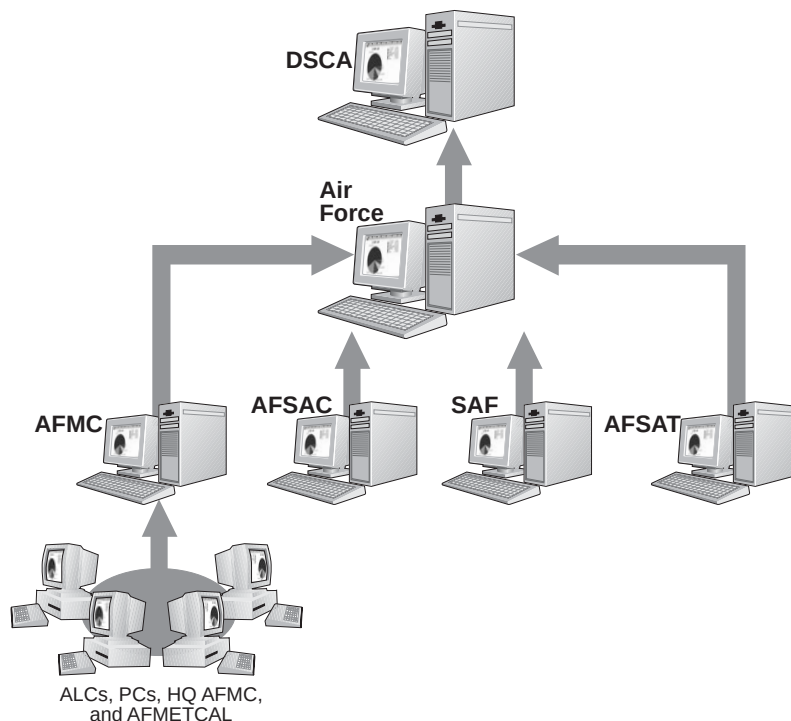


**Figure 11 Air Force
Performance-Base Costing
Architecture**

The AF took a staged approach to implementation, first completing static SAF/IA models before beginning the model for AFSAC followed by AFSAT and AFMC. This approach established a working prototype allowing the modeling methods to be refined.

In order to ensure a cohesive PBC effort, the AF chartered an internal steering committee with representatives from each effected organization. The committee was designed to provide program oversight and direction throughout the design, implementation, and sustainment phases of the AF PBC effort.

Expectations

The Air Force expected PBC to make all the costs drivers and activities that dictate resource requirements visible and measurable in order to improve strategic and organizational decision-making while improving budget forecast accuracy. As with the other MILDEPs, the AF needed PBC to support the budgeting cycle and, more recently, the programming cycle.

Additionally, the AF anticipated ancillary benefits of utilizing PBC data in Activity Based Management (ABM) and BPI initiatives internal to the AF. The AF intends to perform detailed analysis of the PBC data to meet these objectives including what-if, output, and capacity analysis. As a result of this analysis, the AF anticipates the following benefits:

- Improved visibility into the effectiveness of resource utilization;
- Insight into the contribution of individual activities to the cost of a process or program; and
- Identification of activities with disproportionately large cost and little added value that could be eliminated or reduced.

Methodology

The Air Force followed a strict adherence to the principles of ABC in the development of the PBC models. The team modeled all aspects of the business of FMS, capturing fully burdened labor costs for civilian, military, and contractor personnel as well as all non-labor costs such as supplies & materials and printing & reproduction (e.g., object classification level).

In order to accurately reflect business processes, the focus was on the activity dictionary because they are the foundation and primary strength of ABC. The creation of the activity dictionary entailed developing an accurate list of activities performed by the organization and their descriptions. In order to allocate labor costs to activities, individual labor resources completed surveys, which established the initial assignment structure in the models. The assignment structure for non-labor resources was determined by interviewing subject matter experts (SMEs). SMEs were also instrumental in assigning activities to cost objects, which are the products or services of the organization. Senior Air Force leadership elaborated on the base requirements of the PBC effort by introducing the following specifications:

- Data was expanded to include all security cooperation funding sources such as FMS Case, and Engineering Services not just FMS and FMF administration.
- Budget cost figures are included in the models to allow further analysis.
- Although the primary cost objects were determined to be the corporate activities at the executive level, the AF added an additional set of cost objects, countries, which was later adopted across the MILDEPs.

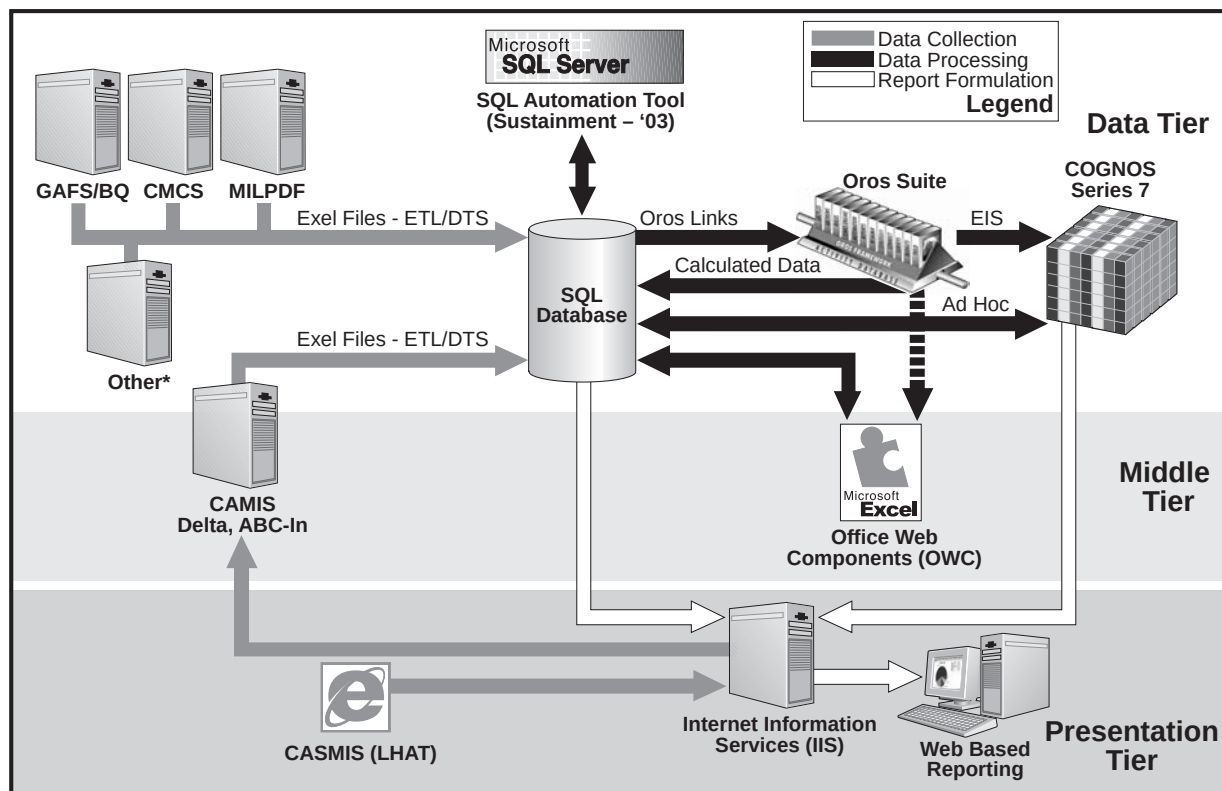
The system was designed with a constant focus on producing data that would support the PBB cycle and that would be useful to operations personnel.

The Air Force Performance-Base Costing Infrastructure

The Air Force created a unique activity dictionary for each of the four organizational models. Each activity within the dictionary relates to one of the standard core functions via one of the corporate activities. DSCA replaced the corporate activities with the program elements in 2003. These program elements and core functions allow for a common language for data comparison across the Air Force and between the MILDEPs.

The Air Force models are detailed to the level of individual resources internal to each organization. This structure allows the relevant organization insight into cost consumption by each security cooperation position and by thirteen non-labor categories. Both resources and activities are modeled into an organizational hierarchy allowing detailed analysis by directorate.

Performance-Base Costing was taken from development to production upon completion of the static models. The production phase encompassed the transformation of the static models to live models, which are currently updated on a quarterly basis. A labor hour accounting tool (LHAT) replaced surveys at the security cooperation dedicated organizations to capture workforce efforts. A web-based reporting structure was implemented to complete the PBCIS. The complete PBCIS begins with the models that are refreshed in the SAS[®] Oros[®] ABC software suite, as shown in Figure 12. The data is then exported to the SQL database where it is consolidated before it is fed into the Cognos[®] Business Intelligence software and published to the PBCIS portal.



OTHER* refers to data which doesn't come from discrete system, typically provided/updated via Microsoft Excel formats.

Figure 12 Air Force High-Level Performance-Base Costing Architecture

How Performance-Base Costing is Being Used in the Air Force

Beginning in fiscal year 2004, the AF constructed its program submission with supporting data from the PBCIS. The AF is currently elaborating on this usage in support of efforts to prepare the FMS administration budget submission to DSCA. SAF/IA is increasing its ability to identify, measure and improve business processes by associating activities with processes, outputs, and eventually unit costs of production.

Within AFMC, the Air Armaments Center (AAC) at Eglin Air Force Base, Florida, utilized PBC data to re-allocate resources across funding streams in an effort to obtain the optimal resource mix. The Air Force Security Assistance Center (AFSAC) has commissioned a series of reports studying data from the PBCIS to support their Six Sigma[™] efforts. These reports focus on various FMS processes such as Supply Discrepancy Reporting (SDRs) or Case Closure. The completed reports provide the process owner with greater cost insight into their process.

AFSAC has also used PBCIS reports to support its annual AF manpower study by providing insight into how the workforce expends time.

Lessons Learned and Next Steps

Engaged leadership has been the primary contributor to the success of the PBC project within the AF. From the very first stages of implementation, senior leadership within SAF/IA was engaged and supportive. Throughout the process, as the PBCIS developed and the objectives of the effort were highlighted to the stakeholders, leadership support grew exponentially.

Now that PBC data has matured enough to be utilized for programming and budgeting, management at every level is engaged. Recent efforts on the part of the AF leadership have significantly accelerated the timeliness of quarterly data submissions, increasing date relevance. In the future, the AF will continue to leverage this support and will endeavor to further increase buy-in from the stakeholders.

The AF understands the need for timely, accurate cost and driver data in order to produce quality results. Fidelity of data is a major issue affecting the PBCIS across the MILDEPs. To this end, the AF leadership worked diligently to involve the workforce in the continual improvement of data, particularly regarding time captures. Current efforts such as the implementation of WorkBrain™ a web-based labor hour accounting tool LHAT will provide a reliable, easy-to-use, accurate means of reporting workforce time. The AF intends to have WorkBrain™ operational and available to the dedicated organizations by January 2005 with potential for expansion into AFMC.

Additionally, the AF recognizes the need to further educate and evangelize its workforce regarding the PBC project. While PBC has proven to be a tool flexible beyond its primary objectives, the AF must be careful to convey the understanding that it is not a solution to every AF challenge. For example, while PBCIS has been supportive to manpower efforts, it is not a stand-alone manpower tool and does not have a man-year aspect.

Summary

The PBCIS has proven to be a powerful resource with potential that is even yet untapped. As the AF leadership increases tasking requiring the use of PBC data, the full capabilities of the PBCIS will be realized.

In addition to helping AF leadership to understand the true costs of doing business, PBCIS data has been used to improve program and budget submissions, increase the validity of manpower exercises, and measure BPI efforts. Now is an exciting time for the AF and PBCIS as we are beginning to see real returns on the investment into PBC.

The Defense Security Cooperation Agency

DSCA's implementation of PBC includes the Headquarters, the Defense Institute of International Legal Studies (DIILS), the Defense Institute of Security Assistance Management (DISAM), and the Defense Security Assistance Design Center (DSADC). Recently, the DSCA models expanded to include our overseas components, and will again expand during fall 2004 to include the security cooperation component of the Defense Finance and Accounting Service (DFAS).

Although the implementation of PBC within various components of DSCA is similar to the MILDEPs, the focus remained on the overall project and the corporate infrastructure. However, with the integration of programming, internal budgeting and costing is becoming a prominent subject of discussion and analysis.

To eliminate the use of manual labor hour surveys, DSCA researched a variety of automated systems. Specific objectives of the implementation included the following:

- Automating time and attendance and labor hour tracking in a single application;
- Standardizing data collection across the Agency (i.e., improving PBC back-end data collection efficiency across the various components of DSCA, thus providing data standardization);
- Increasing manager visibility; and
- Increasing cost information (i.e., ability to price program elements, ability to track program vs. budget vs. execution).

The result was a fully web-based application called WorkBrain™. WorkBrain™ allows DSCA component users to quickly access the application via the internet. Once the users access the application, via user name and password, he or she can allocate activity data to their normal time and attendance. Figure 13 illustrated the weekly time sheet, provides a sample view of the WorkBrain™ data entry screen.

Figure 13 The Weekly Time Sheet

The screenshot displays the 'Weekly Timesheet' interface for user Nick Favret. The interface is divided into several sections:

- Header:** Shows the user's name 'Nick Favret' and the week 'for week of 2004/02/15 - 2004/02/21'.
- Navigation:** Includes buttons for 'Previous Employee', 'Next Employee', 'Previous Week', and 'Next Week'.
- Schedule Table:** A table with columns for days of the week (Sun 02/15 to Sat 02/21) and rows for 'Scheduled Start', 'Scheduled End', and 'Actual Start'.
- Elapsed Time Table:** A table with columns for days of the week and rows for activities. Activities listed include 'WRK' (14.00, 6.00, 8.00) and 'LA' (12.00). The 'Total' row shows 40.00 hours.
- DSCA Activity Dictionary:** A list of activities on the right side, including '501 - ADMINISTER AND SUPPORT THE EUM PF', '504 - ADMINISTER FOREIGN MILITARY FINANC', and '503 - FACILITATE PRESIDENTIAL DRAWDOWN'.
- Footer:** Includes buttons for 'Submit', 'Cancel', 'Reset', 'Copy Previous Week', 'Forward Timesheet', 'Submit to Supervisor', 'Comments', 'Print Friendly Version', and checkboxes for 'Authorized', 'Submitted', and 'Locked'.

The activities available for allocation in Figure 13 are based on the DSCA's activity Dictionary. DSCA personnel allocate their time with the goal of providing a reasonable description of the activities they performed during a two-week cycle.

The DSCA activity dictionary provides a listing and definitions of the activities to accomplish every task in the Agency. The DSCA activity dictionary represents processes that DSCA personnel perform to accomplish its mission. The level of these activities is designed to provide valuable information to assist in making informed decisions. Many activities and associated tasks are consolidated into higher-level processes. This approach acknowledges that the large activity or Program provides sufficient data for management to make informed business decisions.

The activity dictionary is a key element of any PBC model. They are the interface between the user and the resultant PBC data. In developing an activity dictionary, there is a balance between too general and too specific. If activities are too general, the resultant data provides little value or information to managers. In essence, the information provided is already known. If activities are too specific or detailed, the resultant data can become diluted, and again provide little information helpful in the decision-making process. As such, activity dictionaries need to be treated as living entities that are reviewed and modified on a regular basis.

DSCA's initial PBC results offer real-time analytical insight into the productivity and performance of the organization. The data that is generated via the WorkBrain™ application allows DSCA Directorates make better decisions and be more accountable to performance targets.

Next Steps

Embracing PBC by assimilating it into the decision-making process is the goal, essentially moving the organization from focusing solely on programming, budgeting, or costing to a more comprehensive focus on goals, objectives, and performance. Managers did not have the tools necessary to make the transition. However, programming, budgeting, costing, and performance measures now provide fact-based information to support the decision-making process. The tools allow managers to make decisions based on requirements, cost and performance data rather than strictly by intuition.

BearingPoint, Incorporated was awarded a contract by the DSCA to build a PBMS for the security assistance community. BearingPoint successfully completed this engagement in April 2003 on time and below cost and is currently hosting and enhancing that system within our information technology facilities. This article discusses the development of the PBMS, lessons learned and next steps.

Implementation Methodology

The contractor BearingPoint was awarded the contract to develop a PBC/M system for the security cooperation community in 2001. The award was based on support we were providing to the Comptroller Shop at DSCA and the PBC proof-of-concept demonstration developed for the Department of the Navy at NAVICP. We began with a static system for verification purposes and then moved to the more complex dynamic system.

The PBC methodology we implemented was accomplished in the following phases:

- Design costing infrastructure;
- Complete detailed planning;
- Create static PBC models;
- Migrate static PBC models to PBM; and
- Mature PBM to PBB.

Design Costing Infrastructure

During this high-level planning phase, we ensured that all model development teams and projects were coordinated and standardized. This ensured that the MILDEPs and DSCA corporate PBC/M models were capable of rolling up comparable data for budget projecting, costing, planning, and other operational and strategic uses. At this point in the engagement, we developed a presentation and briefed senior leadership in the DSCA and the MILDEPs involved in the project in order to obtain high-level agreement and sponsorship. The next step entailed the creation of a design/architecture plan, describing the end-state objectives and requirements of the PBM system, as well as the design of the technical architecture across all models. During this initial phase, we also reviewed commercial off-the-shelf (COTS) software options for each of the needed pieces and helped select:

- Oros® 5.5 (we began with Oros 5.1 and upgraded over the life of the project) to construct the PBC models.
- Cognos® Power Play to report the information.
- SQL Server 2000 database to create an information warehouse to store the data.

The major deliverable of this phase was a high-level project plan to ensure effective project management.

Complete Detailed Planning

During this phase of the engagement, we began to meet regularly with the DSCA and the MILDEPs to enlist organizational support and validate PBC team requirements to help ensure a rapid start for the project and consistency across organizations. Part of this process entailed an introduction to the concept of PBC, wherein we conducted PBC familiarization briefs so that team members understood the overall goals of the project and the tools required for the project. This also served as a way to gain a better understanding of each organization and its challenges. This knowledge assisted in developing a strategy for building each organizational model and establishing reporting requirements for each organization to create PBC reports that would be useful to DSCA and the individual MILDEPs.

Create Static Performance Base Costing Models

During this phase of the project, we began the development of static, or non-automated, PBC models. These models were developed based on modeling sessions held with subject matter experts (SMEs) who were familiar with the processes and activities of their particular organization. These sessions allowed us to gain an understanding of the job functions within the organization that needed to be modeled, the activities performed by that organization and the customers they supported.

As mentioned above, we used Oros[®] 5.5 to build the models. Oros[®] facilitated the project's needs in constructing the PBC models because of its modular approach to activity based costing. In addition, Oros[®] contains robust features that assisted in the development of the PBMS and its reporting capabilities, including:

- Attributes;
- Contribution reports; and
- Oros[®] Links Engine.

The attribute feature in Oros[®] acts as a data "tag" or label that allows for the logical grouping of like data, which was instrumental in the creation of robust reports within Cognos[®]. Contribution reports show the consumption of resources by activity and cost object and the consumption of activities by cost object. Oros[®] Links Engine facilitates the import and export of data from the model.

Resource Module

The resource module is the logical starting point of the model, which captures the financial resources used within the organization. For this engagement our focus was on the funding directly controlled by the DSCA and distributed to each MILDEP, including all FMS and FMF administration funding resources. Resources in this instance include both people (labor) and non-labor costs, such as equipment. The labor portion of the resource module was designed to mimic the structure of the organization, and captured all individual full time equivalents (FTEs) represented, in most cases, by an individual account. The three main labor categories captured in the model include Civilian, Military and Contractor personnel. The non-labor accounts were set up to include each of the thirteen non-labor categories used by all of the MILDEPs for budgeting purposes, including the following:

- Travel;
- Transportation;
- Rent,
- Communication and utilities;
- ADP rent payments;
- Printing and reproduction;

-
- Other services (Non-ADP);
 - Other services (ADP);
 - Base Operating Support ICPS;
 - Training;
 - Supplies and materials;
 - Non-ADP equipment;
 - ADP equipment, and
 - Supply Discrepancy Reports.

Relying upon the robust contribution feature within Oros[®], DSCA was able to track which activities or countries are consuming each resource within the model supported. This data is invaluable in Performance-Based costing data analysis, resource allocation, and identification of inefficiency.

Activity Module

The activity module allows for the capture of work performed within the organization through the consumption of resources. Our personnel conducted numerous interviews with the organizational subject matter experts to develop an activity list for each modeled organization. We stressed the importance of developing an organization-specific activity list with which users could identify and report time against. This led to the creation of an activity dictionary for each organization. In order to maintain a consistent roll-up for the community, the only initial structure that had to be included in each model was the six FMS core functions:

- Pre-LOR;
- Case Development;
- Case Execution;
- Case Closure;
- Other Security Cooperation, and
- Business Sustaining

It was the role of the subject matter experts to instruct us on the relationship between activity and core function within each organization. The activity dictionary and the activities' corresponding core functions comprised the structure of the model and allowed for the development of the static models based on initial surveys of the organizational representatives.

The original activity module structure was eventually further broken down below the core function level to allow for the more logical grouping of data and consistency among the MILDEPs in reporting. In addition, we inserted additional data structure to satisfy data requirements of another organization, the Programming Office, within DSCA. The Programming Office developed a set thirty-four data elements initially called programs, which mapped to the FMS core functions. We were able to add an attribute to gather this data. The programs were further refined in 2003 and consolidated down to twenty-three. These programs are contained in all of the models and can be used to assist in budgeting and planning purposes.

Cost Object

The final module in the models is the cost object module. This module shows the cost to produce a particular product or service or to support a particular customer. This module is the final distribution point for model data. In this instance, DSCA and the MILDEPs decided to include customers, or countries, as the cost objects in order to determine the cost of supporting a particular country. This decision enabled the MILDEPs to manage their resource allocations based on customer demands. For example, if Country X suddenly demanded more support,

management could move more resources over to support that country. The cost objects we used are countries listed in the *Security Assistance Management Manual* (SAMM), and the structure established in the models was based on the combatant commands.

All of the performance-based costing data is pushed out of the models into a database, from which the online analytical processing (OLAP) data cubes are built using Cognos® Impromptu, Cognos® Transformer and Cognos® Power Play. Initially, this was a snapshot in time that is now updated quarterly.

Migrate Static Performance Base Costing Models to Performance-Base Management

This task required us to transform the static PBC models to an active or live model state by updating all the data on a regular basis. It also included developing automated feeds/links where possible, to update the resources (personnel names and salaries) by interfacing between the appropriate legacy system and the PBC Oros® model, developing methods to update the resource drivers (percent of time spent on or against activities by resources) in the Oros® model, procedures for updating volume information, as well as developing automated reports. This is the point in many PBC projects where the engagement fails. We were very deliberate in this phase of the engagement, developing PBMS technical requirements early, performing a dry run, developing a data formatting and structuring strategy, and developing several tools to facilitate these processes, including a staging tool, time update and tracking tool, and server and reporting tools. In addition, we created rules and procedures for refreshing model data (resource salaries and names), changing the structure of the models, updating driver data (personnel time and task/output volumes), and consolidating model data (within MILDEPs and up to DSCA). For several organizations we created web-based data collection tools to maximize the web-enablement of the PBMS. We also created a development environment hosted at our Broadband Solution Center (BSC) in order to establish a technical environment in which we could establish and test the initial PBMS. This environment enabled us to create an information warehouse to stage the data, host the web-based data collection tool, and create the Cognos® Portal environment to display the data through the web.

Mature Performance Base Costing to Performance-Base Management

In this task, we began using the PBC model data to support the PBB process to assist in organizational decision-making. This phase was primarily concerned with maintaining the model and using the system for cost based scenario development to support PBB. Specific steps of this task included:

- Ensuring that affected organizations have a PBM capability and are ready to integrate into PBB.
- Developing periodic reports, timetables, and procedures for MILDEPs to receive data and send it to DSCA for processing and analysis.
- Developing formal reporting validation and reconciliation guidelines and procedures.
- Developing formal PBB system maintenance guidelines and rules for how subordinate models update and refresh data, standard periods of reporting, and standard data sources.
- Developing PBB advanced and ongoing organizational training plans for affected personnel to maximize their effectiveness.

Many of these tasks continue today. What was PBB has now formalized into a planning, programming, budgeting, and execution process. The PBMS supports these efforts today.

Sustainment of the Performance-Base Management System

The proposed initial project supported the hosting of data at each organization and a roll-up to a corporate database for reporting purposes. Early in the process however, DSCA and the

MILDEPs decided to consolidate the system at one central point, thereby cutting down on software and maintenance costs and facilitating easier administration of the system. We set up a development site which meets the needs of DSCA and the MILDEPs: there was ample storage space, a division of data on the server, secure entry based on named users, and it allowed us to gauge the system requirements in order to move into a production environment upon completion of the project. A Cognos® portal was established, wherein all of the MILDEP data was hosted and could be easily accessed by permitted system users. We also used this site to host the information warehouse, as well as the various data collection tools used to update the models on a quarterly basis.

Lessons Learned

Understanding the risks involved in an engagement such as the initial development and present sustainment of the PBMS, we sought to manage risk and ensure the applications developed met the needs of our end-user community. To facilitate risk management, we ensured the following early in the process:

- Involved leadership;
- Involved the end user;
- Managed change; and
- Briefed stakeholders on results.

Involve Leadership Early in the Process

Early in the engagement, our DSCA sponsors met with the leaders of each of the MILDEP organizations to clarify the PBMS project and explain the benefits of the system. These meetings usually resulted in an e-mail to the MILDEP community explaining the goals of the project, leadership's belief in the project and a request made to the end users to participate in the process. Enterprise wide projects such as this often fail because leadership does not support the project or understand the goals or benefits of the project. We addressed these issues in kickoff briefs where we explained the concepts of PBC, the goals, uses and benefits of the project, and requested the active participation and buy-in of leadership.

Involve the End User Early in the Process

Too often projects fail because a contractor imposes a process upon the end users without understanding the organization's work. Stress was placed on empowering the users to develop the dictionary in their language according to their organization, and on encouraging users to provide input. The list of activities was a working document that enabled the initial models to speak to the work performed within the organization. When we built the time capture systems (and trained the end users on those systems), the users were already familiar with their particular activity dictionary. In many cases we required an update to the time and attendance system the one of record and the one that was to be used to update the model. To minimize this burden on the end user, the system generally is web-based, employing the user-defined activity dictionary. This made it easier for the end user to understand and update quickly, and it ultimately provided useful analytical data.

Build It If You Must

As in other systems of this magnitude, if the data collection becomes a significant burden on the users, the project is less likely to be successful or produce meaningful data. One area of particular importance in this project was the updating of survey data in a timely fashion. For the static model, Microsoft® Excel worksheets were used to estimate activity time over the previous year. This data was crucial in building the initial PBC model, from which we were able to brief management within each of the MILDEPs as to how their personnel were spending their time. We need to update the models on a quarterly basis, to allow us to move the modeled organizations

from PBC (taking a snapshot of a period in time) to PBM (updating the model quarterly and briefing management).

In some instances, we relied on existing time capture systems to update models. For example, within some sections of the Air Force user community, we were able to extract data from the Centralized Acquisition and Sustainment Management Information System (CASMIS), a web-based data collection tool built initially to support a variety of acquisition related processes in Program Management Offices for the Aeronautical System Center. The system was adapted and rolled out to the Air Force Security Assistance Center, Air Force Security Assistance Training, and Secretary of the Air Force for International Affairs for time capture purposes. In the Navy sector, we extracted data for NAVSEA by working with a NAVSEA contractor to modify NAVSEA's time and attendance system, the Standard Labor Data Collection and Distribution Application (SLDCADA). Similarly, we worked with the SIGMA enterprise resource planning (ERP) team at NAVAIR to get an extract from their time and attendance system to update the model.

In other instances, we needed to build or purchase time and attendance systems to facilitate and automate the update process. Within the Navy sector, we developed a web-based data collection tool called the Periodic Activity Survey System (PASS). PASS relies upon an active server page (ASP) front end and a SQL Server database back end to collect user survey data. PASS allows each permitted user in a model to have his/her own user profile and password in the system. The end user logs on to PASS and selects the customers he/she supports and the activities conducted to support that customer. Each PASS user updates the survey and saves the data on a daily basis. The PASS cycle is a two-week period that coincides with the federal pay cycle. The activity data is imported quarterly into the models. We developed training manuals for the system and provided training to each user of the system.

In the Army sector, we built the Activity Tracking Online Management System (ATOMS), a web-based data collection tool similar to PASS. We trained the end users of ATOMS and are now getting quarterly data to update the Army models. We implemented a time and attendance application within DSCA, that would also support allocating time to activities, called WorkBrain™.

These automated tools CASMIS, PASS, ATOMS and WorkBrain™ have all been instrumental in the success of the project. Too often organizations that have successfully implemented a PBC model failed to make the transition to a PBMS because those organizations lack the means to update the model on a regular and timely basis. The use of and development of these tools were crucial in the successful delivery of DSCA's PBMS.

Change Management

Change management is the collective set of activities that identify and address the organizational and personnel implications of process and technology change. The objective of such activity is to ensure the realization and sustainability of identified business benefits associated with the process and technology effort. Key activities include the following:

- Assessing the organization's overall readiness for change and the magnitude of change specific to the effort;
- Developing a business case;
- Articulating the project vision; coaching project sponsors/leaders;
- Developing change agent networks;
- Developing and deploying communications and stakeholder management strategies;
- Preparing teams and individuals for change through training on new processes, technologies and behaviors;

-
- Understanding and planning for impacts to job design and organizational structure, and;
 - Establishing baseline performance measures; and monitoring results.

It is a major component of any project that results in changes within an organization. In many cases, these efforts further facilitate many aspects of a project, shortening the life of the implementation phase because users are more educated and more engaged. We used many of these techniques to implement the PBMS successfully.

Brief the Results

We acknowledge the opportunity cost of implementing the PBMS due to the time and effort of MILDEP personnel, who were taken away from their day-to-day operations, to assist in the development of a PBMS. It is therefore key to show results and quick wins as early as possible in the project to maintain buy-in and solicit early feedback on the direction of the project. This meant briefing management through each phase of the project, including when the activity dictionary was initially developed and the static models were built to produce initial results. This allowed us to identify and make changes early on, as necessary, to ensure the overall model structure was acceptable before moving into production and quarterly updates.

Next Steps

With a robust PBMS in place by September 2003 and over three years worth of data for some organizations, we shifted focus to analysis of the data to facilitate the effective use of the data in the decision-making process. Several efforts are ongoing and have been described in the individual MILDEP section. In addition to MILDEP-specific efforts, we analyze the data at a higher level for comparison across MILDEPs. One such effort is PBC+, a natural progression from PBMS.

PBC data alone can show funding requirements, how funds are spent on activities or customers and what services were provided to whom for comparison of like organizations. In combination with other metrics, PBC data can be used as a powerful decision-making tool to develop performance goals, measure results, and make changes. In September 2003, we began its PBC+ effort by downloading a quarterly download from DIFS related to DSCA and the MILDEPs. The importance of the DIFS data was twofold:

- DIFS is the financial system of record used to track, and;
- DIFS maintains records during the life cycle of an FMS case.

This data provided a way to distribute PBC costs to individual FMS cases, showing how resources were being consumed at the case level, and to compare costs across MILDEPs.

With the cooperation and input of the MILDEP and DSCA representatives, the contractor developed weighting criteria in order to redistribute the costs to the case level based on several factors that defined the workload in the quarter:

- Country: MILDEPs rated all countries supported, from 1 being easiest to 5 being most difficult or complicated.
- Blanket and Cooperation Logistics supply Support Arrangement (CLSSA): Blanket and Cooperation Logistics supply Support Arrangement (CLSSA) cases require very little direct work and therefore received a weighting of 0.1.
- System (Generic Code from DIFS): Based on the type of system, the case was given a weight from 1 being the least complicated to 3 being the most complicated.
- Size: This was later abandoned as part of the weight but included in the information for reporting and grouping purposes. Size categories include:
 - XS less than \$250 thousand

- S \$251 thousand to \$1 million
- M \$1 million to \$10 million
- L \$10 million to \$100 million
- XL over \$100 million

The first three criteria made up 35 percent of the weight. The remaining 65 percent of the weight was based on the value of services delivered during the quarter. Several additional characteristics of the cases were included in the analysis, including size of the case, region and MILDEP. The data was built into a Microsoft® Excel spreadsheet to enable the users to turn on and off the criteria, as shown in Figure 14.

		On	Off			
Country Weight		☒	☐			
Blanket or CLSSA		☒	☐			
Size Weight		☒	☐			
System Weight		☒	☐			
				\$10,308,353.32		
CNTRY_CD	IA	CASE	TypeAssist	CaseType	Total Weight	PBC Cost
	D	PFG	4	DJ	3.166666667	\$2,021.80
	D	PFH	4	DJ	6.333333333	\$4,043.61
	D	PFL	4	DJ	3.166666667	\$2,021.80
	D	QAD	4	DA	9.5	\$6,065.41
	D	QAH	6	DM	9.5	\$6,065.41
	D	QAI	4	DH	6.333333333	\$4,043.61
	D	QAK	5		12.66666667	\$8,087.22
	D	QAL	3	DD	9.5	\$6,065.41
	D	QAM	3	DR	9.5	\$6,065.41
	D	QBT	5	DH	19	\$12,130.83
	D	QBU	4	DR	3.166666667	\$2,021.80
	D	QBV	4	DB	38	\$24,261.66
	D	QBW	4	DL	3.166666667	\$2,021.80
	D	QBX	4	DM	19	\$12,130.83
	D	QBY	3	DK	3.166666667	\$2,021.80
	D	QBZ	3	DR	9.5	\$6,065.41
	D	QCA	5	DH	19	\$12,130.83
	D	QCB	4	DM	19	\$12,130.83
	B	UAA	N	BH	2	\$1,276.93
	B	LAC	6	BR	1	\$638.46
	B	LAF	6	BR	1	\$638.46

Figure 14 Sample of Data Built into a Microsoft® Excel Spreadsheet

In this notional example, there are \$10 million in Case Execution costs that are driven to existing MILDEP FMS cases. Relying upon the calculations resident in PBC+, we show that PBC+ has determined a total weight of 3.1667 for case PFG and has allocated \$2,021 dollars of the total \$10 million in this quarter. Before this analysis was developed, the program manager for case PFG might have a general idea about how much support he/she provided to this country, but with PBC+ we can develop a dollar figure for how much support was provided. In addition to this Excel sheet, the data is also being used to build PBC+ data cubes to display the data with its multidimensional aspects in Cognos© Power Play on the internet. This brings the MILDEPs one step closer to identifying accurate product and customer costs.

Conclusion

The DSCA PBMS has evolved from its early stages of static models with manually entered quarterly user data used mostly by the MILDEPs, to a much more complex system that takes advantage of automated user data updates, as well as driver data from DIFS to provide much more useful and timely information to DSCA headquarters as well. Updating the resource data using automated labor surveys PASS, ATOMS, and WorkBrain™ has reduced the need to interrupt employees' daily routines, and downloads from other systems is providing much more accurate and relevant drivers.

Incorporating the program element structure into the models has provided a very useful data point for DSCA's Programming Division. DSCA has the ability to compare PBB data that was budgeted for each program element to PBC data what was actually consumed by each program element quarterly. In the future, with the further refinement of the PBC+ tool, DSCA and the MILDEPs should be able to see not only how much was consumed by each program element, but they should be able to see what the funding actually paid for in products and services. Having this data should prove to be invaluable when making future funding decisions and budget justifications. The development of products and services will also allow MILDEPs to begin benchmarking against one another, develop useful metrics for score carding efforts and identify areas of inefficiency.

Taking these actions to seek maximum efficiency will be imperative to provide a high level of service to DSCA's customers. The foundation has been laid, data sources have become more reliable and users have become more educated about the possible uses of the information provided by DSCA's PBMS.

PBM is a tool that security cooperation organizations use to respond proactively to various fiscal and management demands. DSCA sees PBM as a group of promising and innovative initiatives to improve cost management and performance in the security cooperation community. The objective of the PBC project was to develop and deploy PBC models at each MILDEP and participating organization using a common methodology and common software to allow sharing information and identifying best practices. The information shared in this article demonstrates that we, as a community, met that objective.

These initiatives are beginning to open doors to better cost, performance, and requirements awareness. This new awareness and insight is also prompting managers to ask questions about their operations. Security cooperation organizations are beginning to see benefits from data sharing, and from comparing cost and performance data. The real value of PBM now depends on the participating organizations sustaining its various components and security cooperation managers continuing to embrace the transition to a performance-based environment. Security cooperation managers must be willing and able to use the information to improve operations. Integrating the concept of PBM into the daily business operation will require deliberate effort and continued senior leader involvement.

The article suggests that DSCA and the MILDEPs are at various stages of maturity with their PBM program. Valuable information about policy, process and resources is giving security cooperation organizations the means to prioritize funding and improve performance. One goal for DSCA is to arrive at credible costs for executing and administering security cooperation programs and associated processes, such as FMS LOA development, LOA or case management, and case closure.

Embracing a performance-based environment and assimilating it into the decision-making process is an admirable goal. The functionality and wealth of information available will radically transform the way plans, programs, and budgets are developed, improve managerial decision-making, and support improvements in overall effectiveness and efficiency. PBM represents radical changes in how we do business performance-based, customer-focused, it is a significant shift from managing by intuition to managing with information.

References

GAO Report, NSIAD-00-37, November 1999, *FMS: Efforts to improve Administration Hampered by Insufficient Information* <http://www.gao.gov/archive/2000/ns00037.pdf>.

Navy International Programs Office PBC Central: https://www.nipo.navy.mil/PBC_Main.cfm.

BetterManagement.com Activity-Based Management Module:
<http://www.bettermanagement.com/businessTopicHome.aspx?Filter=9>.

BearingPoint DSCA Case Study: <http://www.bearingpoint.com/clients/case%5Fstudies/dsca.html>.

Walters, Tome H. "Performance-Based Budgeting and Performance-Based Costing", *The DISAM Journal*, Winter 2001-2002, p. 57-64.
http://www.disam.dsca.mil/pubs/INDEXES/Journals/Journal_Index/v.25_1&2/Davis,%20Bobb,%20Dr.pdf.

Davis, Bobby, "Performance-Based Costing", *The DISAM Journal*, Fall 2002/Winter 2003, p. 118-124. http://www.disam.dsca.mil/pubs/INDEXES/Journals/Journal_Index/v.25_1&2/Davis,Bobby,Dr.pdf.

Keithly, Thomas, Planning Guidance for the Security Cooperation Community, *The DISAM Journal*, Spring 2002, p. 69-77.
http://www.disam.dsca.mil/pubs/INDEXES/Journals/Journal_Index/v.24_3/Keithly,ThomasM.pdf.

Performance-Based Costing Information System Portal: <https://dsca-pbc.net/Cognos/cgi-bin/login.exe>.

Planning, Programming, Budgeting, and Execution Application: <https://www.sc-ppbe.net/>.

About the Authors

Bobby Davis is an Associate Professor in the School of Business and Industry at Florida A&M University in Tallahassee, Florida. He is presently serving as a Summer Faculty Fellow in the Office of the Secretary of Defense's Minority Institutions Program, working in the Security Assistance Resource Management Division, Directorate of Business Operations/Comptroller, for the Defense Security Cooperation Agency.

Patrick Fox is responsible for the integration and sustainment of performance-based budgeting and costing infrastructures for FMS and FMF funding. He works in the Security Assistance Resource Management Division, Directorate of Business Operations/Comptroller, for the Defense Security Cooperation Agency. Prior to joining DSCA, Mr. Fox worked fourteen years in various International Affairs positions for the Air Force. He holds a Bachelor's Degree in International Business from The McGregor School of Antioch University.

Thomas Keithly is Chief of the Programs Division at the Defense Security Cooperation Agency, working to develop a planning and programming approach to foreign military sales and related resources. Previously he worked in security assistance at the Navy International Programs Office where he completed his naval career. His specialties were surface warfare and nuclear propulsion. He is a 1972 graduate of the U.S. Naval Academy and has a Master's of International Service from American University.

William Barr is Team Leader for FMS Business Process Improvement in the office of the Deputy Assistant Secretary of the Army for Defense Exports and Cooperation, Division of Policy for Security Cooperation, Resources and Exports. He has twenty-three years with the Department of the Army in international activities and operations research. He holds Master's Degrees in Sociology and National Security Strategy from Wichita State University and National Defense University, respectively.

Steve Bowdren is the Security Assistance Programs Officer at Navy International Programs Office, where he is implementing a new programming and budgeting process for FMS and FMF administration funds and leads the DoN/USCG PBC project. A Certified Defense Financial Manager, he has a Bachelor's degree in History from University of Connecticut and a Master's degree in National Security Studies from Georgetown University.

Dan Weiner is the Chief of the Finance and Management Group within the Secretary of the Air Force International Affairs Policy division. He is responsible for the integration and sustainment of performance-based costing and budgeting for foreign military sales and financing within the Air Force. He is also corporately responsible for the PPBE process within the organization for appropriated, FMS, and FMF requirements. Prior to his current capacity, he held numerous positions within the Air Force Security Assistance Center. He holds a Bachelor's of Science degree in Business Administration with emphasis in accounting from The Ohio State University, Ohio.

Timothy O'Brien is a Senior Manager at BearingPoint and serves as the overall Project Manager for the DSCA Performance-Based Management System. Prior to assuming that role in August 2003, he served as the BearingPoint lead for the DoN portion of the PBMS. He is also the Project Manager for the PPBE application and the FMF/IMET budget application. He has over ten years experience performing strategic business analysis, as well as foreign military sales and security assistance work. He graduated from George Mason University with a Bachelor's Degree in Government and Politics.

Tom Davis is a Senior Consultant at BearingPoint serving as the team lead of the PBC project at DSCA. He is responsible for providing updated PBC models and reports for DSCA HQ as well as corporate reports that integrate both the HQ and MILDEP information. He has worked on various performance-based management projects for federal government clients including USMC, FBI, USCG, and USPTO. He graduated from East Carolina University with a Bachelor's Degree in Economics.

Melani Schultz is a Senior Consultant with BearingPoint and is currently managing the DoN portion of the PBC/M Implementation Team. In addition, she is the BearingPoint contact for Oracle Balanced Scorecard Implementations. Prior to joining BearingPoint, she worked for the federal government for over five years. Most recently, she served as an International Trade Analyst with the U.S. International Trade Commission in Washington, D.C.. She earned her MBA in International Business Finance and a MA in International Affairs from the George Washington University, Washington, D.C. She earned her BA in Psychology from Cornell University, Ithaca, New York.

James D. Piché is Senior Manager, BearingPoint, Inc. He holds a Bachelor's of Science degree in Naval Architecture and Marine Engineering from the U. S. Coast Guard Academy. He possesses eleven years of experience in acquisition and program management, performance measurement, and process improvement and is currently responsible for a wide range of consulting assignments focusing on the management, development, and implementation of automated information system projects. He specializes in performance measurement, process improvement, strategic planning, configuration management, and program and project management and has experience in requirements and risk management.

Don Burke is a Manager in the Air Force sector of the Public Services practice of BearingPoint. While he currently serves as the Air Force lead for PBC, he has been involved in the project since inception. Prior to joining BearingPoint, he served twenty years with the United States Marine Corps where he led numerous operational and support organizations involved in all aspects of logistics and supply chain management. He holds a Master's of Business Administration degree, with Honors, from Golden Gate University and a Bachelor's of Science degree in Business from Miami University in Oxford, Ohio.