IMPROVING FINANCIAL MANAGEMENT THROUGH ENTERPRISE RESOURCE PLANNING

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USAWC CLASS OF 2002

U.S. ARMY WAR COLLEGE, CARLISLE BARRACKS, PA 17013-5050

20020806 314

USAWC STRATEGY RESEARCH PROJECT

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ABSTRACT

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TITLE: Improving Financial Management through Enterprise Resource Planning

FORMAT: Strategy Research Project

DATE: 25 January 2002 PAGES: 26 CLASSIFICATION: Unclassified

Commercial companies have been implementing Enterprise Resource Planning packages since the mid-90's with varying degrees of success or failure. The military is now starting to implement ERP packages, applying commercially available software solutions that automate and integrate their business processes. Budgeters and comptrollers have a role in the ERP implementation and may greatly improve their own practices in the process.

This paper will provide an ERP overview, some ERP successes, and the status of the ERP prototypes in the Navy. Then the paper will attempt to categorize some of the problems with today's financial processes that can be improved through the use of ERP. ERP can improve the financial processes of the Navy and DOD in virtually every area. There is potential for improvement in financial execution, budgeting, programming and implementing financial measures of effectiveness.

TABLE OF CONTENTS

IMPROVING FINANCIAL MANAGEMENT THROUGH ENTERPRISE RESOURCE PLANNING

Why use Enterprise Resource Planning (ERP) in the military? Seven of the ten most profitable companies in America and nine of the ten with the highest market value use ERP.[1] According to the Secretary of the Navy, "The gap between Department of Defense and the private sector business practices is increasingly obvious. Today it is clear that by improving our business practices, we can get more military capability for the resources provided for the defense of the Nation..."[2] This paper will attempt to show the potential improvement to military financial processes including programming, budgeting and execution through the use of ERP.

ERP OVERVIEW

Enterprise Resource Planning is simply integrating all of a departments or military organizations functions into a single database. It does not "resource" or "plan" for the strategic leader but as an "enterprise", it streamlines processes, eliminates duplication, eliminates innumerable legacy systems and allows the leaders to make better decisions based on complete data. For example, take the ordering process in a commercial company. Orders normally begin in paper form and travel through the various functions (customer service, inventory, shipping, and finance) where they are keyed into different systems for each of those functions. This current process does not allow visibility of the order status to each function. ERP aligns data under a common element and puts all the processes onto one database which fulfills all the individual functional needs, improves processing time, reduces errors and provides visibility of the order to everyone. For a military example, planners define needs, develop long term programs, translate them into budgets, and then customers (maintainers, program managers, service providers) obligate funds and finally accounting activities pay the expenditures. In the military where the functions are often performed by various commands utilizing different systems and in geographically separate locations with different goals, ERP implementation does not seem so simple. But because the existing military processes are so complex and fragmented, the potential for process improvement is even more substantial.

ERP is not new to the commercial world, only to the federal government. Private-sector firms began adopting the ERP approach in the mid-1990s.[3] However, the complexity of military systems coupled with the mandate to follow various federal regulations has slowed the federal implementation process. ERP databases are normally implemented by vendors who have developed standard packages designed for certain types of business, such as production oriented companies. The vendor builds database tables, thousands of them, with decision switches that the

programmers set to lead the software down one decision path or another. In the commercial world most of the switches are standardized and the companies only have to make a few hundred program decisions to tailor the software to their functionality.[4] The uniqueness of military systems has kept vendors from attempting to enter this market. Not only is the military unique from the commercial world, there is little commonality between functions within the military. Consider the language barriers between operators, maintainers, acquisition professionals, logisticians, budgeters, and accountants and it is easy to understand the vendors' hesitance. However, the prospect of large and enduring federal contracts is finally enticing some vendors into federal friendly ERP. Major ERP vendors Oracle Corp., PeopleSoft Inc and SAP Public Services all have federal specific products.[5] According to a report issued in May 2001 by a market research firm, the federal ERP market will grow to nearly $1.8 billion per year by 2005.[6]

ERP projects are costly. A Meta Group study of the Total Cost of Ownership (TCO) of ERP, including software, hardware, professional services and internal staff costs found the average TCO of the 63 commercial companies surveyed was $15 million.[7] For military implementations the TCO is in the billions of dollars. Like many commercial and military programs, the initial investment cost is often under estimated. "One out of four ERP projects are over budget, and 20 percent are terminated before completion, according to a survey of 117 companies by The Conference Board Inc. in New York."[8]

In addition to the high investment cost, the return on investment is not fast enough to satisfy many strategic leaders. The average time to see any benefits from ERP in commercial companies is 31 months.[9] For military leaders with short tenures working within annual appropriations, the long return on investment often means reducing funding from other programs to pay for ERP. There are of course many hidden costs with ERP. Experienced ERP implementers find training to be the most elusive budget item. It is often completely overlooked and consistently underestimated. Data conversion and data analysis, a problem for commercial companies is even harder for the military. Trying to get users of the numerous legacy systems to decipher which data should be integrated and more importantly admit which data is really of no use is extremely difficult. Consultant fees are also normally higher than anticipated in commercial firms. Especially when the firms do not properly plan for disengagement and the consultants must stay to perform tasks that the untrained employees are incapable of performing. Considering the high turnover of military personnel, this cost will certainly be higher for the military than for commercial firms. ERP expertise comes with added personnel changes particularly for the military. Many of the military and civil service personnel who become experts often must stay in their new ERP role to facilitate the change and their old positions must then be filled with new personnel. Many of these new experts would

undoubtedly be lured away from public service by higher salaries offered by the same consulting firms that trained them. Finally, there is a possible increase in cost from reduced production because of ERP. "In a recent Deloitte Consulting survey of 64 Fortune 500 companies, one in four admitted that they suffered a drop in performance when their ERP systems went live."[10] The most common reason for the decrease in productivity is that everything looks and works differently than it did before. Even with a good training program, the experience curve theory dictates that production will temporarily drop until the employees gain experience with the new system.

There are three commonly used ways to implement ERP. The first is the Big Bang. This is the most ambitious and difficult approach where the companies terminate all their legacy systems at once and implement a single ERP system. This was the popular method in the '90s. But due to numerous horror stories from failed attempts, it is rarely attempted now. There is a famous case of Hershey Foods ruining its 1999 Halloween candy sales because of an ERP project gone awry. Greg Irwin, Oracle's vice president for aerospace and defense market development said "We do not pitch the entire ERP system anymore, just pieces of it."[11] Given the complexity of military systems, this method is not used as the paper will show when discussing Navy prototypes in a later chapter. The second method is the Franchising strategy which suits large and diverse companies that do not share common practices between functions. Independent ERP systems are installed in part of the organization to link common practices. This has become the most common method for implementing ERP. The final strategy is the Slam Dunk which applies to smaller companies who plan to grow into ERP. This strategy links a few key processes directed at achieving a faster payback. As the paper will show in the Navy examples of ERP that follow, the Franchise strategy is the implementation method chosen by all of the prototypes. The primary reasons are the diversity of each organization, especially compared to the private industry, and the normal military conservative approach to trying something new.

MILITARY SEALIFT COMMAND, AN ERP SUCCESS

The Military Sealift Command (MSC) offers an example of a successful ERP implementation in the Department of Defense (DOD). This section will specifically review the financial manager's role in ERP and how ERP improved the MSC financial processes. The MSC transports cargo across the oceans for all services and replenishes U. S. Navy ships at sea. MSC employs 7,000 military and civilian personnel to operate 140 of its ships and contracts with commercial firms to provide even more shipping when required. As a working capital fund agency, MSC does not get appropriations from Congress but instead charges the military for services provided. In this way, the MSC is more like a commercial shipping company, making it an easier fit for a standard ERP

3

package than other DOD organizations. However, the MSC does still have to comply with federal regulations including the 1990 Chief Financial Officers Act.

MSC realized the importance of financial processes across all of their business areas and consequently made its comptroller, Bill Savitsky, the lead for the implementation team. "The technical folks are great, but they are not accountants," said Mr. Savitsky.[12] MSC was not merely looking for a financial package. They wanted to manage the inventories on individual ships, monitor their fuel and track assets ashore. They put together a list of 1,000 requirements from all their business areas and signed a $30 million contract with Oracle in 1998.[13]

MSC utilized the Franchise strategy of implementation. Most of its key processes were covered by the initial ERP package and MSC has plans to expand the ERP into all areas. To make the implementation easier, MSC decided to implement the software as it was packaged without any changes unique to their business. There were eleven areas where their financial processes did not match the software, mainly accounting functions. Instead of changing the ERP package, they showed some flexibility in changing their accounting practices without any adverse impact on operations. This decision not only made the implementation easier, it will also ease future software upgrades which MSC purchased.

ERP improved MSC financial processes. The accounting modules MSC implemented linked its general ledger, accounts receivable and accounts payable. ERP streamlined all of the financial processes by also linking the finance accounts to inventory and property management, which were performed on different systems. The purchasing module they installed also linked their system to the Defense Department's Standard Procurement System.

The lessons learned from the MSC implementation include the role finance should play in the ERP implementation, the time required to complete an implementation and that not all organizations will match an ERP package so easily. By having the lead or at least a major role in the implementation team, the comptroller was able to ensure that all the processes would provide the correct data to the financial processes. In turn, MSC benefited not only by reducing its operating cost but by being able to project cost based on trends and make better business decisions. The key here is not to focus on lowering cost, which financial types always tend to do, but to focus on increasing productivity while ensuring everything is tied into the financial processes. Placing the Comptroller on the implementation team, even if not in charge of the team, will assist in achieving this outcome. Another lesson learned is the time to implement the system. MSC went live with their ERP system in April 2001, three years after they first started building their requirements list and working with the contractor. Finally, ERP implementations will not be as easy

4

for most DOD organizations that do not resemble commercial companies or have the ability to adjust all their processes to match the existing ERP software.

ERP AND THE U.S. NAVY

Downsizing and shrinking budgets have made "Reinventing Government" a high priority within the Department of the Navy (DON). The Navy realizes that ERP will not solve all its problems but hopes that it will offer a disciplined approach to effect business process change and implement best practices. In December 1997, then Secretary of the Navy John Dalton directed the department to begin work on a DON strategic business plan beginning the Revolution in Business Affairs for the Navy. [14] The Commercial Financial Practices working group led by VADM John Lockard (COMNAVAIR) was one of the first groups chartered. It soon realized that the scope of the study was too narrow and needed to expand into other business areas to achieve any real benefits. The group's examination of the commercial sector found that the commercial approach to an improved enterprise-wide management system included implementation of an ERP solution and believed ERP had the potential to achieve the following goals for the Navy:

-Provide quality information for decision makers at all levels.

-Improve efficiency and effectiveness through reengineered business processes.

-Manage costs for maximum reallocation of resources to recapitalization and modernization.

-Enable compliance with statutory requirements.[15]

In December 1998, the Undersecretary of the Navy approved the recommendations and authorized the four ERP prototypes discussed below to proceed. All four prototypes are using similar software and striving to identify common data fields to ease future integration. An Integration Coordination Board was formulated to ensure cross-pilot coordination on scope, configuration and deployment issues. However, many Navy organizations still resist ERP packages because the implementations they have seen were in organizations which are different than their own. The four prototypes are briefly discussed below to show that ERP can work in a variety of organizations: in regional maintenance, in a Navy working Capital Fund activity, in program management, and in the aviation supply and maintenance world.

REGIONAL MAINTENANCE PILOT

The Naval Sea Systems Command (NAVSEA) is responsible for maintenance of Navy ships at the shipboard, intermediate and depot levels. This project focuses on standardizing ship maintenance at all levels and would create an ERP solution that also includes contractors.[16] According to VADM Pete Nanos, Commander of NAVSEA, "I have something like 140 information

technology systems that are operating today to help support fleet maintenance."[17] His goal is to pull together all the information on maintenance on all ships to assess command performance, cost, quality of repairs and return on investment. The prototype is still being worked and will to go live in 2002.

NAVY WORKING CAPITAL FUND PILOT

The Navy Working Capital Fund (NWCF) pilot is project CABRILLO. CABRILLO focuses on improving the business operations, processes, and support systems at the Space and Naval Warfare Systems Center (SSC) San Diego. SSC San Diego provides the information management technology required by the fleet including research and development, test and evaluation, engineering and fleet support. As a NWCF activity, SSC achieves it's funding in the same way as MSC, by charging customers for services, not through congressionally appropriated dollars. In June 2000, PricewaterhouseCoopers was selected as the system integrator and works with four other commercial companies on the ERP implementation. CABRILLO went live in the summer of 2001 and will gradually replace 30 existing legacy systems.[18]

PROGRAM MANAGEMENT PILOT

Naval Air Systems Command (NAVAIR) has the lead for this pilot, titled Sigma. NAVAIR is responsible for, among other things, procurement and life cycle management of naval aviation. NAVAIR manages a $24 billion appropriated fund budget. It operates or interfaces with over 200 legacy systems including 45 financial systems, 11 budget systems and over 90 material and asset management systems.[19]

Sigma's goal is to demonstrate ERP functionality across four key process areas: financial management, human resource management, asset tracking/configuration management and procurement. Specifically in the financial area, the goals are to provide program managers the ability to budget, plan, track execution and measure performance across the program-maintenance-supply naval aviation team. Sigma will provide better cost visibility, the ability to track financial execution across the general fund (appropriated funds) and NWCF, and the ability to reduce late invoice and interest penalties. The following financial functions will be performed through the ERP system: prepare financial statements, match invoices and process payments, perform billing, perform cost center and profit center accounting, formulate budgets, and manage budget authority and budget execution.

NAVAIR contracted with KPMG to provide the ERP software. KPMG working with IBM, SAP and SAIC will provide the unchanged COTS software (SAP) and develop five "bolt-on" packages to

meet NAVAIR's requirements. The pilot program will use the E-2C Hawkeye program to validate the system and will go live in 2002. [20]

AVIATION SUPPLY CHAIN MANAGEMENT PILOT

The Naval Supply Systems Command (NAVSUP) is working with NAVAIR on the fourth Navy ERP pilot, Supply Maintenance Aviation Reengineering Team (SMART). SMART will put all major supply and financial functions on one ERP system which will be linked to the aviation maintenance function. The following major legacy systems cost $80 million per year to maintain and will all be replaced by SMART: Uniform Automated Data Processing System Phase II (U2) which runs all the supply and financials at the Stock points, Uniform Inventory Control Point which handles the financial, inventory, maintenance and procurement functions at the inventory control point, and the Naval Logistics Command Management Information System (NALCOMIS) which handles the aviation maintenance function on ships and at intermediate and depot level maintenance activities.[21]

SMART will utilize the SAP ERP package (same as the other three Navy prototypes). The pilot is now in Phase II of a three phase implementation. Phase I was a business case analysis. The team estimates that investment cost, beginning in 2000 will reach $1.5 billion by 2006. The savings, beginning in 2003 will also reach $1.5 billion by 2006. By 2010 the cumulative investment cost will be $2 billion and cumulative savings will be $5.5 billion.[22] Phase II is the pilot phase and will run for about 45 days where the team will test the ERP software's ability to replace national and local supply systems for the E-2C Hawkeye and the LM 2500 gas turbine engine programs. In Phase III, the team will develop additional functionality within the ERP system to include operations required to perform full supply chain management. This final phase will take about three months with the team going live in the summer of 2002.[23]

The potential benefits from the SMART pilot are impressive. The goals are: a 75 percent reduction in information technology applications and support, annual Operations and Maintenance savings of $4.8 million, real time accounting (the current process performs batch accounting with a one to three week delay), automated financial transactions with a paperless workflow and only one data entry, total asset visibility and the ability to capture business and program costs. The performance goals are a 60-70 percent reduction in the repair cycle time with significantly improved Full Mission Capable rates at the same investment level.[24]

SMART improves financial processes. SAP does not replace DOD finance and accounting systems but will instead interact with them. The Defense Finance and Accounting Service will have access to SAP to process accounts payable. The SMART team will build bolt-on packages to

perform Appropriation Procurement Account (APA) material accounting, cost of operations for supply accounting in the Standard Accounting and Reporting System and NWCF budgeting and pricing.

FINANCIAL PROCESS CHALLENGES

There are innumerable problems with the current financial processes within the Navy and DOD. This section of the paper will attempt to categorize some of those challenges which may be improved through the use of ERP systems and theory. The section begins with accounting, the execution level of finance, illustrated by a scathing report from the GAO documenting problems with inventory management, accounts payable and accounts receivable. Budgeting is then examined with a focus on the different data bases utilized causing an enormous amount of rework and the Navy's efforts to solve that problem. Finally, this section examines problems in programming with the PPBS system. Specifically, how programming has grown into a rework of the budget process with growing staffs and still no way to adequately measure performance, all of which hamper strategic planning. The final section, recommendations, will attempt to show how ERP can help with these problems.

ACCOUNTING...FAILING GRADE FROM THE GAO

> Dear Mr. Chairman
> This report responds to your request that we analyze the programmatic and budgetary implications of the financial data deficiencies...of the Department of the Navy. In its first attempt to audit the Navy's financial statements, the Naval Audit service reported that it was unable to render an opinion. This means that, despite extensive audit efforts, the Navy's financial records were in such poor condition that the auditors could not tell whether or not the statements were accurate. In essence, the Navy did not have adequate records to document what it had, what it owed, or how much money it had spent.[25]

The Chief Financial Officers Act of 1990 required DOD to improve its financial management and reporting operations, develop an integrated agency accounting and financial management system including financial reporting and internal controls, and prepare financial statements for trust and revolving funds. The first year the Navy was required to submit auditable statements was fiscal year 1996. The quote above is from a GAO report developed in response to the audit of those statements.

Specifically applicable to this paper is the GAO's conclusion that the Navy's lack of accurate inventory data undermines budget development. The report found that $7.8 billion in inventories

including those on board ships was not included in the Navy's year-end financial statements.[26] These inventory figures are used both on the financial statements and as the starting point to develop budget requests. The Navy has always been required to keep accurate inventory records and GAO reports that this finding is a consistent discrepancy from 1994 audits through 1998. Of the billions of dollars in unreported inventory, millions were in excess to allowances or needs. Item managers were ordering more of the excess material because they did not have visibility of it. In fairness to the Navy it is important to note that this report was written in 1998. The Navy Supply Corps has made great strides in improving asset visibility especially of those items purchased from the wholesale system and present on ships or in Type Commander's possession ashore.

The Navy is required to record obligations as legal liabilities are incurred and then track the payments from the applicable appropriation. The GAO also found that the Navy could not accurately account for what it had spent. DOD requires the services to balance their accounts (Fund Balance) with Treasury records. When the Defense Finance and Accounting Service reported on the Fund Balance for the Navy it used the Treasury data because it judged the Navy's accounting system to be unreliable. This finding is also consistent with prior GAO audits. Because the Navy was not accurately tracking obligations it could not ensure enough funding was available to make all the payments. In 1996, the Navy reported expenditures totaling $63 billion. GAO found that this figure was understated by over $4 billion.[27]

Linked to the obligations problem stated above, GAO also found that the Navy was not properly verifying invoices causing duplicate payments. In fact the controls were so bad that the Navy primarily relied on the contractors to identify and return duplicate payments. The auditors sampled 400 of the 1.2 million Navy payments for the year and judged $2.5 million worth of payments were duplicates. The average of returned checks from contractors totals about $1 billion per year.[28]

The GAO found that the Navy was not fully utilizing all available appropriated funding. The accounts receivable function was understated for two reasons. First, the Navy did not accurately record all monies owed to it and allowed for too many write-offs as uncollectible. The Navy wrote-off nearly 15 percent of the Military Personnel Navy accounts receivables as uncollectible. Second, The Navy had over $27 million in collections recorded as "negative receivables," which means they did not know where or why they received the money and could not spend it until the cause of the receivable was identified.[29] These problems coupled with the Navy's long standing problem of under obligating available funds severely impact its ability to pay for mission essential requirements.

The preceding findings occurred in General Fund accounting. Unfortunately the Defense Business Operating Fund (DBOF) accounts were not in any better shape than the general fund

accounts. DBOF was established in 1991 as a revolving fund where the DBOF activity charges for its services like a business designed to operate with zero profit. The GAO found that the DBOF inventory records were incorrect in 22 percent of those sampled. The depreciation of assets was incorrect with a net understatement of $5 million.[30] DBOF activities were not charging customers for all legitimate expenses giving the customer no incentive to better manage for an expense he does not have to pay. For example, a Navy DBOF activity failed to charge the Army for containers it used to transport Army cargo. As a result, the Army had available containers it may not have needed which were funded out of Navy appropriated funds. Overall, accounts receivable and accounts payable were not processed in a timely manner, not reconciled and inaccurate. The key point here for this paper is that DBOF financial problems are paid for in the end by appropriated funds.

Any improvement to Navy processes will make more funding available to satisfy legitimate Navy expenses. ERP can help improve these processes by tying together the inventory management, obligation and expenditure processes of accounting on one system.

BUDGETING

The DON has improved the way it obtains and shares budget information within its chain of command over the past few years but the process is still performed largely on separate data bases which do not provide visibility and therefore slow the process and cause rework. There are three major submissions of budget material in the DON each year. In the early summer, the various activities in the Navy submit their budgets up the chain using the POM as their basis. The DON Office of Budget (FMB) conducts a review during the summer which leads to the Budget Estimate Submit (BES) to the OSD and the Office of Management and Budget (OMB) in September. Following the OSD/OMB review, the President's Budget is submitted to Congress in February. With each of these submissions extensive amounts of budget information is collected, reviewed, consolidated and then analyzed, questioned and answered. There are 24 Budget Submitting Offices (BSO) who organize the justification material (which originates at the lowest activity comptroller level) and provide the material to FMB. Until 1996, the handling of this material (approximately 10,000 pages) was primarily via paper copies which were drafted by the BSO, marked- up and returned by FMB, then corrected and resubmitted by the BSO.[31]

In 1996, FMB began to collect the material via electronic mail and then build a CD for the budget submission. This method, originally just at the FMB to BSO level, quickly spread down to the lowest activity comptroller level. Although much improved over mailing hard copies, this method still had the problems of visibility and data management. Visibility of the budget information was

impaired by the fact that the files were sent from one individual to another. Until that person reviewed, approved and consolidated the information to send it further up the chain, no one else had visibility of the status. The problem with data management was that were a lot of spreadsheet files flowing everywhere electronically. As the Comptroller at Naval Air Station Sigonella in 2000, the author can attest to receiving marked-up budgets from higher commands with the directions "delete all previous files from your data base and make this the new master....."

In 1998, FMB started the Justification Management System (JMS) which is a web based system to improve budgeting. JMS is a database on the web that manages information (budget exhibits and files) to provide greater visibility both vertically and horizontally. The increased visibility also serves to reduce rework by allowing everyone access to data base information where they can query and sort as they desire. JMS will be further discussed in the next section of the paper on how it can be improved through the use of ERP theory.

Similar to the General Fund budgeting processes discussed above, NWCF activities are not much better off in linking and sharing budget information. A NWCF activity submits its budget up through the same chain as the appropriated fund budgets. It starts at the activity level and is consolidated by the BSO, submitted to FMB and then finally to OMB. One major difference is that it does not get as much attention at the OMB level probably because it is a break-even activity and does not have to compete as much for annually appropriated funds. For example, NAVSUP drafts the NWCF-SM budget that accounts for about $6 billion in sales and $500 million in appropriated funds. The Naval Inventory Control Point provides most of the budget information on hard copies which NAVSUP then types them into spreadsheets to build its budget.[32]

PROGRAMMING...PPBS PROBLEM OVERVIEW

The Planning Programming and Budget System (PPBS) was implemented in 1961 by Secretary of Defense McNamara and has remained largely unchanged for the last 40 years. It is the author's belief that the intent and overall decision processes of PPBS remain correct and offer much value to military decision makers, the President and the congress. However, the financial processes that DOD, the executive and legislative branches use have become flawed. This paper will not review in detail the steps from planning to programming to budgeting but instead will focus on a few areas in the process that have the potential to be improved through ERP.

The initial intent of the PPBS process was to have programming and budgeting as separate functions that were linked together to ensure the planning goals of senior leadership were turned into actual funding requests (budgets) to congress. In the 1960s when computers and databases were not available, it made sense to keep these functions separate. Programming took the

planning guidance and turned it into defense programs that could be evaluated as to their contribution to strategy and projected cost for six or more years. Budgeting then took the approved programs and resorted them into appropriations to submit to congress. Currently the Directorate of Program Analysis and Evaluation (PA&E), working for the Undersecretary of Defense for Financial Management and Comptroller (USD (C)), drafts the program instructions, the Defense Planning Guidance, analyzes the service POM inputs and makes final adjustments with Program Decision Memorandums. Once approved, the program is passed back to the services to translate into a budget. However, instead of just resorting the numbers from program to budget, the budgets are analyzed again essentially redoing what was already approved by OSD. Changes to the budgets of course then effect the programs. Beginning in 2001, Secretary of Defense Donald Rumsfeld said that the programming and budgeting functions in OSD would be overlaid.[33] With the current systems in place, combining these two functions is proving to be difficult.

The increase in staff size and more importantly the increase in the number of staffs focused on programming and budgeting decreased the effectiveness of PPBS. Robert McNamara started the Office of Systems Analysis with twenty men for planning analysis. Now the DPA&E that performs the same function as the former Office of Systems Analysis totals over 150 personnel not counting the contractor personnel hired to assist.[34] With the "democratization" of congress in the 1970s, the problem became even worse. The original concept of PPBS did not envision Congress involvement in the programming phase. But in the 1970s the ability of a few strong congressmen or Appropriation and Authorization staffs to control the defense budget was largely diminished. Individual congressmen and even the committees began to grow larger staffs as more legislators wanted to become involved in the decision process for defense dollars. Then in 1994, VADM Owens, Chairman of the Joint Resource and Oversight Council (JROC) decided to grow programming and budget staffs, duplicating the staffs already present in OSD.[35] All of these staffs analyze and question the individual service inputs to the POM and budget forcing answers, changes and rework. And consequently the individual service staffs grew to accommodate the added analysis.

PPBS has never done a good job in measuring the performance or return on investment of the dollars requested in the budget. Obviously this is much harder to do in the military than in the commercial world. But the trend in private and public sectors is to develop metrics to gage the effects of different functions and therefore determine priorities for funding. Take the Air Force bombing capability of long-range versus shorter range aircraft as an example. In Kosovo long-range bomber aircraft flew two percent of the sorties and dropped over 50 percent of the bombs.[36] The Air Force, however, consistently increased the ratio of short-range to long-range aircraft

procured from 4:1 in the 1950s to 14:1 today, one contributing factor is probably because the focus in budget is on the short term investment dollars vice the long term life-cycle cost and performance. Additionally the programs are divided into ten Major Force Program (MFP) categories in 1961 and with the exception of congress adding a Special Operations Force program in 1988, they have not been changed. The MFPs were categorized to support the 1960s National Security Strategy. Therefore, it is difficult for current day planners to measure the effectiveness of dollars aligned to an old strategy. Exacerbating the same problem, the Program Elements (PEs) under those MFPs have grown to over 5,000, many of which are misaligned or outdated.[37]

Strategic planning efforts are hampered by the current PPBS process. Strategic planners should of course be focused on the planning and programming functions of PPBS. Instead, because their programs are funded through annual appropriations, they are drawn down into the budget details at the expense of long term planning. As one CEO stated, "Excessive budgeting drives out the need for planning every time."[38] The size of the staffs the strategic planners (military, executive, and legislative) created for themselves has reduced their flexibility and often just complicate the issues they are working.

RECOMMENDATIONS

This section of the paper will attempt to take the theory of ERP and how it is being worked into the Navy at present (discussed in the first half of the paper) and show how it can help to alleviate some of the financial process challenges discussed in the last section. The author believes there are four general areas in which ERP can improve financial performance: accounting, budgeting, programming, and measures of effectiveness.

ACCOUNTING

While great improvements may have been made in the Navy's ability to offer auditable and accurate financial statements, there is still room for much improvement. As a NAS Comptroller just a few years ago, the author can attest to the extraordinary amount of time (approximately 20 percent) his accounting staff worked on Un-Matched Disbursements (UMDs) and Negative Unliquidated Obligations (NULOs) at the direction of higher headquarters. Congress and OMB still bring a lot of pressure to bear in cleaning these records up. The monthly average of UMDs and NULOs by NAVAIR in fiscal year 2000 was over $300 million.[39]

ERP offers the ability to tie all obligation and expenditure records together at the activity level. This ability will enable activity level staffs to better verify invoices and reduce duplicate payments. Additionally, allowing the DFAS paying offices access to the ERP system will enable

them to answer questions on obligations without going back to the activity level for each invoice. ERP will also improve inventory accuracy for NWCF and general fund activities and therefore reduce the overestimation of future requirements in their budgets.

BUDGETING

ERP has the obvious potential to improve budgeting at all levels and in all activities. However, according to Mr. David Burton, a contractor at FMO working on the Navy prototypes, there are currently no plans to use in ERP in general fund budgeting.[40] NAVSUP is attempting to expand their SMART ERP prototype to provide help in developing their NWCF budgets.

The Navy ERP systems should be linked to JMS. Allowing JMS users access to the ERP database would enable them to further reduce the requirement to collect and consolidate data in building their budgets. Also, the "objects" in the JMS system are information, not data. The difference is that data is the raw financial information of the actual activities, obligations, expenditures, allowances, etc. Information is the refined data in the form of budget documents, word processing files and spreadsheets. Allowing the budgeters access to the data would enable them to build, analyze and revise more of the budget exhibits themselves.

PROGRAMMING

ERP can link the budgeting and programming functions. FMB is developing a Program Budget Information System (PBIS) to link the two functions at the FMB level. PBIS, currently undergoing testing and evaluation, is a data warehouse that uses a common language and is focused on appropriation information (Activity Group and Sub-Activity Groups, AGs/SAGs) but can be sorted by MFPs and Program Elements for programmers to analyze. ERP systems throughout the Navy could feed information directly into the PBIS if its data is also identified by AGs and SAGs at some point. All of this financial data in one system will enable both budgeting and programming staffs to build and analyze their requirements without reworking the same issues at each phase of the PPBS process. The danger here is that senior leaders become too engrossed in the minor budget and execution details that are now readily available to them and lose focus on planning.

MEASURES OF PERFORMANCE

All private and public sector organizations strive to improve themselves by measuring their performance through some established "metric". As stated earlier, this is much more challenging for DOD than for the private sector. However, there are measurable benefits of monies spent which can be identified through the use of ERP. The first measurement which has potential benefit is the

identification and better use of cost data. ERP will allow decision makers to analyze operating and investment costs to calculate the return on investment of utilizing new systems compared to the cost of the systems they replace. Currently these costs are projected based largely on predicted failure rates. ERP, as shown in the MSC example, allows the decision maker to make decisions on future costs based on past trends. The second potential benefit is from changing the incentive for reducing operating cost. In the private sector reduced operating cost means greater profits. In the public sector it means reduced future budgets. Therefore, comptrollers often "design" the total operating cost to equal total funding allowed. By improving visibility over the operating cost of different functions, decision makers at higher levels will be able to reprogram funding to under-funded mission essential tasks. Finally, it is currently hard to determine how funding requested in a budget contributes to national security when it is hidden in one of thousands PEs often under the wrong MFP which is not aligned to the current National Security Strategy. The ERP system mentioned above that combines the budget and programming databases will also better allow decision makers to see how their funding request contributes to National Security Strategy by enabling them to simultaneously see how money in the POM will be spent in the budget. It also allows them to better configure the information under the MFPs and PEs and analyze its effect on national security.

FURTHER EFFORT

This paper has shown how financial processes can be improved through the use of ERP. ERP is working in the private sector. The prototypes in the Navy show great promise for it to improve the operational performance of the military. If financial planners and users of ERP tie it into their financial processes it can easily improve them also and reduce costs and rework. The paper does not go into detail on how ERP is tied into the financial processes. But the potential is there and the time is right to utilize Enterprise Resource Planning systems to cut operating cost, improve performance, and improve the way the military programs, budgets and spends the nations funding.

Word count: 6,619

ENDNOTES

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