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**INCREASING COST CONSCIOUSNESS IN THE
*AIR FORCE MATERIEL COMMAND***

BY

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This is the story of AFMC's efforts to become "cost conscious." Like any good story, it begins with introductions -- to the AFMC itself and to its commander, General George T. Babbitt. The AFMC is huge. Headquartered at Wright-Patterson Air Force Base, Ohio, and operating in 22 countries, it employs 95,000 people (military and civilian) and a \$45 billion physical plant located at 13 major installations in 10 states. It provides \$30+ billion in support services each year directly to the Air Force's combat commands and indirectly to the joint commands of United States Department of Defense (DoD).

AFMC faces major challenges: services that are too expensive, non-competitive performance, a workforce and infrastructure that is too large and aging rapidly, the lack of sound performance and cost metrics, excessive concern with inputs and budgets, and increasingly restive customers. Major changes in the organization have further complicated matters. AFMC was created in 1992 by merging two distinct organizations, the Air Force Logistics Command (AFLC) and the Air Force Systems Command (AFSC), with different missions -- maintenance and supply versus acquisitions -- and cultures.

GENERAL GEORGE T. BABBITT 'S INTERVENTION

General Babbitt was given command of AFMC in 1997. He was expressly charged with improving performance and reducing costs by means of improved business management. His appointment followed successful tours of duty as head of the Defense Logistics Agency (DLA) and deputy chief of staff for Air Force logistics

The first thing General Babbitt did on his arrival was announce that, "We will run AFMC like a business." By this he meant the adoption of a multi-product, or M-form, organizational structure, in which each major operating division within AFMC served a distinct "product market," and a radically decentralized administrative control structure, in which the operating divisions would be managed entirely by the numbers from a small corporate headquarters. Implementing this scheme meant that each of the divisions would need to identify its products and their costs.

Of course, AFMC is not a business, but application of the business metaphor provided the tools for a dramatic and immediate intervention by AFMC's commander. General Babbitt reinforced this metaphor at every opportunity, directing his subordinates to:

- Focus on mission
- Know your customers and the products and services you provide and deliver them with quality, responsiveness, and on cost
- Manage the total cost of the output, not inputs
- Set annual goals to improve quality and responsiveness and drive down unit costs and measure results for both operational and financial performance

General Babbitt's guidance to his subordinates was not limited to exhortation to do better. He also made it clear that his division managers were responsible and accountable for both performance and cost. Speaking first to the executive council of the AFMC and then throughout the organization, he continuously reiterated that: "You are cost managers, not budget managers (see Figure 1) -- your job is to deliver products and services that meet performance standards and reduced unit cost targets, through continuous process improvement ... your job is not to acquire bigger budgets and spend it all." He explained that this meant that "For products and services that meet performance (quality) standards, your job is to drive down unit cost; for products and services that don't meet performance standards, your job is to improve the performance (quality), without increasing unit cost."

(Figure 1 goes about here)

AFMC'S BUSINESS MANAGEMENT APPROACH -- COMPONENTS

AFMC's new structure is focused on eight "business areas." Each business area (BA) has specific customers, products, activities, assets and competencies, performance measures and standards, and cost measures and standards, and a responsible, accountable chief operating officer (COO). Six of AFMC'S business areas are mission centers. They provide goods and services to customers outside the boundaries of AFMC. These six business areas are:

- Product (system) Support

- Science and Technology
- Test and Evaluation
- Information Services
- Depot Maintenance
- Supply Management

The two remaining business areas, Installations and Support (I&S) and Information Management, are support centers. Their customers are inside AFMC.

OVERCOMING A BUDGET/CREATING A COST-MANAGEMENT MINDSET

Of course, rewarding people for leadership in meeting operational performance and financial (including cost-reduction) targets is the essence of responsibility budgeting. It has been since General Motors' Alfred Sloan and Donaldson Brown devised this system of management control in the 1920s.

Indeed, using financial targets to motivate cost consciousness is standard practice in many organizations, in the public as well as the private sector. However, responsibility budgeting was new to AFMC; it remains untried in most other parts of the federal government of the United States.

The first step in implementing this new system was identifying work product -- the products provided and the activities performed by each of the business areas. Next, those products had to be priced to reflect activity costs. These tasks were assigned to the COOS. Then AFMC HQ had to delegate performance and cost-management decision-making authority to operating managers and set appropriate performance and financial targets. Finally, responsible managers had to do cost and performance analysis to identify opportunities for improvement. All of these tasks were problematic, although none more so than the first.

The Identification of Work Product

Several criteria were established for the identification of work product. These included:

All activities/processes were supposed to be defined in operational terms, e.g., handling or flow costs or storage and capacity costs. Coupled with output information, this

terminology was aimed at facilitating the use of modern activity accounting techniques. It was also intended to help managers orient themselves to managing costs, i.e., reducing capacity costs seems more comprehensible than trying to reduce fixed costs. A business area's resource pools were, where possible, directly assigned to operational cost pools and then to outputs/results.

The design of work packages -- the number of activity and results measures used -- was supposed to be sensitive to issues of information cost and feasibility. This meant using whatever was available at a reasonable cost, even where that was conceptually less than ideal.

Efforts and accomplishments measures should reflect quality performance as well as the financial performance of a business area.

Output/results measures were supposed to reflect external demands rather than workload/activities internal to the organization. This meant measuring actual service delivery to a business area's customers, e.g., orders completed.

Activity/process measures were supposed to reflect the set of mutually exclusive and severally exhaustive value-adding activities performed within a business area.

Rewards were supposed to be tied to financial and operating performance. This meant that work packages had to be aligned as far as possible to the responsibility structure of the AFMC

In some of the business areas, the identification of work product was both successful and highly informative. In the I&S business area, 65 distinct products/services were identified. Most of these products were produced at all 22 of the AFMC's facilities, which permitted considerable operational analysis to identify common processes and best practices.

Work product measurement was also successful in the depot maintenance and supply management business areas. Those business areas are essentially multi-site, single-product, sequential-activity operations. The main cost drivers in depot maintenance include the number of inspections, work receipts, the number of components in inventory, machine setups, and change orders. The main cost drivers in the supply management

area are orders processed, number of unique items held in inventory, type of items issued, physical volume and weight processed, distance shipped, and supporting facilities and equipment acquired, operated, and maintained (see Table 1). Other activity cost drivers include time, space, transaction, service, and commodity type, distance, and weight, as well as the old standbys, output volume, mix, and rate. Many of these measures reflect the breadth of operating systems AFMC's customers maintain in their inventories.

(Table 1 goes about here)

PRODUCT COSTING/PRICING

General Babbitt's "don't wait for perfect processes, just do it" philosophy was stretched to the limit by the problem of computing and using unit costs. Conceptually, this was a straightforward matter. All the business area had to do was identify the direct historical costs (direct labor and materials) associated with each product, and allocate its indirect costs, including general and administrative costs, to products using an apposite metric such as direct labor hours. Product totals could then be divided by output quantities to arrive at unit cost measures. Where a business area's product costs summed to its the total cost, unit cost could be used as a tool for resource allocation (pricing/budgeting) and total unit cost as a performance target. In practice, however, this was extremely difficult and, even where satisfactory work product measures were available, results were often exceedingly crude.

This was the case for a variety of reasons, some of the more important of these were:

- Outlays were not pooled by business area or even by facility, let alone product class, but reflected a bewildering array of budget codes and categories -- consequently it was often difficult to figure how much was spent, let alone by whom;
- AFMC was on a single-entry encumbrance/cash basis of accounts which made it very difficult to match some important cost categories to the delivery of work product;
- Estimates of the replacement values of AFMC's physical assets were usually conjectural and often completely missing, which rendered the measurement of depreciation and capital charges meaningless even where appropriate;

- In too many cases, direct product costs went unmeasured and, even where they were measured, what was measured was often an unsatisfactory basis for allocating indirect costs and overheads.

Despite these problems, AFMC succeeded in allocating about 80 percent of its 1996 outlays to final products. Furthermore, it is committed to raising this figure to 96 percent by 2001 and eventually shifting to an expense basis of accounts, including measurement of depreciation and capital charges, as mandated by the CFOA and the pronouncements of the Federal Accounting Standards Advisory Board. (FASAB).

To improve the quality of its unit cost estimates. AFMC also embarked on a crash project to improve direct costing. AFMC extended its legacy cost measurement system (Job Order Cost Accounting System II -- JOCAS) to business areas without one. In the two areas with the greatest experience with product costing, depot maintenance and supply management, JOCAS is being replaced by the more flexible and sophisticated Defense Industrial Financial Management System (NIFMS).

Where the business areas succeeded in estimating their current product and unit costs, the latter were used to set future-year revenue and cost targets. In the first out year, target prices were set equal to current cost. Because planned service volumes are falling, this implies decreased revenues. The performance targets set by AFMC headquarters for COOs and their business areas are expressed in terms of costs not revenues, however. In the first out year, cost targets were set equal to actual production volumes multiplied by target prices less five percent. Price targets and revenue estimates for subsequent out years will be revised to reflect actual costs in the then current year and cost targets revised accordingly. Assuming that AFMC financial performance targets are met this system will have the following effects:

- AFMC will reduce its nominal dollar budget top-line in proportion to decreases in service levels and production volumes;
- AFMC's target prices will fall dramatically in real terms;
- Even so, AFMC's earned revenues will exceed actual outlays, generating unused budget authority for Air Force Headquarters to reallocate to better uses;

- To the extent that business area managers exceed their financial performance targets, this will unfetter budget authority that AFMC can invest in increasing future productivity.

The Significance of Targets

Why assume that these targets will actually be met? The answer to this question depends in part on how one interprets the history of AFMC's two largest revolving fund operations, depot maintenance and supply management. Although these operations usually met their financial performance targets, they consistently overspent. The problem is that their managers were directed to break even. They could easily find ways to break even when earnings outstripped outlays. If necessary, they could correct the situation by an orgy of year-end spending. Unfortunately, because of unforeseen and in some cases unforeseeable circumstances, outlays now and then exceeded earnings. When this happened, managers had no recourse to overspending short of denying services to customers. Because they were obligated to provide services, they were allowed to overspend, usually on the understanding that the gap between earnings and outlays would somehow be closed in the future. This hope was rarely fulfilled. On average, AFMC's outlays exceeded its earnings. Moreover, because AFMC's prices reflected actual costs, its prices also tended to creep upward.

In contrast, under the current system COOs have been directed to meet or, better yet, exceed specified cost targets. Essentially, they have been told to maximize the difference between what their business areas earn and actual outlays. If AFMC's COOs can be motivated to take these directions seriously, most will find ways to save budget authority for their internal customers and dollars for the US Treasury. This should also have the effect of ratcheting down AFMC's unit costs. Of course, some COOs might nevertheless fail. Nevertheless, General Babbitt has sought to motivate subordinate managers to take cost targets seriously by making it clear that those who exceed targets will be recommended for promotion; those who don't will be retired.

Results

General Babbitt's initiatives have been given credit for substantial reductions in AFMC's operating costs. These are, perhaps, best reflected in the consequences of current pro-

grammatic changes carried into the future.¹ In the FY 00-05 program, AFMC reduced its operating costs \$2.7 billion:

- Paid a \$1.1 billion “bill” issued to AFMC by HQ USAF in the FY 00-05 budget guidance
- Will return an additional \$1.4 billion in savings to HQ USAF
- Will reinvest \$.3 billion to achieve future savings/performance improvements

AFMC's Chief Operating Officers are already committed to achieving additional savings (cost reductions) in the FY 01-06 and FY 02-07 programs. These savings are on top of those already programmed.

CONCLUSIONS

Implementing Babbitt's initiatives hasn't been easy. But progress has been made. Certainly, the efforts made by AFMC's managers to come to grips with these initiatives shows the compelling power of the business management metaphor in contemporary governmental settings. The success of these efforts also tends to confirm the applicability of responsibility budgeting and accounting to at least some of the US government's core functions and to demonstrate the utility of management accounting in this context.

¹ This is so because the Planning Programming Budgeting System (PPBS) installed under Robert McNamara and still in effect to this day governs financial planning and budgeting throughout DOD. PPBS' centerpiece is a six year plan, the Future Year Defense Plan (FYDP), which identifies continuing commitments (the base) and new commitments (increments or decrements) and their consequences in current dollars, arrayed by military component, object of expenditure, and function. AFMC's FY 00-05 program reflects commitments made in FY99 as a direct result of Babbitt's initiatives. In future years, those commitments will be included in AFMC's base. FY00's commitments will show up as changes to the FY 01-06 program.

Figure 1: Budget vs. Cost Management

Budget Management	Cost Management
<i>Focus on spending and on the source of Funds</i> <i>Spend everything</i> <i>Budget Authority is an Asset</i> <i>Deploying that asset is a top management function</i>	<i>Focus on accomplishments</i> <i>Cut Costs/Maximize Productivity</i> <i>Budget Authority is a Liability</i> <i>Decentralize Decisions to those best situated to Maximize Productivity</i>

Table 1

**WORK PACKAGE FOR THE SUPPLY MANAGEMENT BUSINESS AREA
(selected operations)**

SERVICE EFFORTS

SERVICE ACCOMPLISHMENTS

<i>INPUTS</i>	<i>PROCESSES</i>	<i>OUTPUTS</i>	<i>RESULTS</i>
Labor	Order processing	Material shipped or delivered	Orders met
Materials	Receipt and stow of material	Responses to inquiries	Queries answered
Equipment	Issuance of material		
Shipping and handling	Shipping or delivery of material		
Other resources	Recording & filing updates		
	Equipment & facilities utilization and maintenance		

<i>QUALITY (INPUT)</i>	<i>QUALITY (OUTPUT)</i>
<ul style="list-style-type: none"> • Timeliness of receipts • Accuracy of stowage • Accuracy of records 	<ul style="list-style-type: none"> • Delivery timeliness • Accuracy of order completion • Accuracy of billing

EFFICIENCY = INPUTS REQUIRED TO ACHIEVE OUTPUTS

EFFECTIVENESS = CUSTOMER SATISFACTION

Additional Reading

Anthony, Robert N., and David W. Young, *Management Control in Nonprofit Organizations*, fifth ed., Homewood, IL: Richard D. Irwin, 1994.

Barzelay, M., with B.J. Armajani, *Breaking through Bureaucracy: A New Vision for Managing in Government*, Berkeley: University of California Press, 1992.

Borins, Sanford F. *Innovating with Integrity: How Local Heroes Are Transforming American Government*. Washington DC: Georgetown University Press, 1998.

Harr, David J., and James T. Godfrey, *Private Sector Financial Performance Measures and Their Applicability to Government Operations*, Montvale, NJ: National Association of Accountants, 1991.

Jones, L.R., and Fred Thompson, *Public Management: Institutional Renewal for the 21st Century*. JAI Press, *Research in Public Policy Analysis and Management*, Volume 10, 1999.

OECD, *Budgeting for Results: Perspectives on Public Expenditure Management*, Paris: Organisation for Economic Co-operation and Development, 1995.

Schick, Allen, *The Spirit of Reform*, [New Zealand] State Services Commission: <http://www.ssc.govt.nz/frame.asp?Content=Spirit/Spirit.asp>, 1996.

United States General Accounting Office, *Managing for Results: Experiences Abroad Suggest Insights for Federal Management Reforms*. USGPO: Report, GAO/GGD-95-120, May 2, 1995.