

An Analysis of Organizational and Funding Alternatives for the Armed Force Institute of Pathology

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Summary

The Armed Forces Institute of Pathology (AFIP) provides consulting, research, and education services to a wide range of military and some civilian medical facilities. The fees paid by the Institute's customers fall far short of the cost to provide them, and, as a result, the Defense Health Program must subsidize AFIP's activities with an annual budget of roughly \$55 million.

As part of its Revolution in Business Affairs, the Department of Defense (DoD) is striving to increase efficiency by making its various activities as self-sufficient as possible. With this aim in mind, the Office of the Secretary of Defense (Policy Analysis and Evaluation) asked us to evaluate whether AFIP has the potential to become a self-sufficient organization that relies on reimbursements from customers as its major source of funding. We were also asked to look at a range of alternative organizational structures that might be used to run AFIP and offer some insight into the effectiveness those structures.

Conclusions

Although its products and services are well respected by the medical community, AFIP is not self-sufficient. Most of its services are provided at no cost to its military and civilian customers. For example, about 24 percent of AFIP consultations are provided to civilian customers. AFIP expends between \$9.6 million and \$10.7 million on civilian consultation. In FY 2000, the American Registry of Pathologists (ARP), a nonprofit corporation that gives the civilian medical community access to AFIP services, generated reimbursements from these cases in that totaled roughly \$2.4 million. This suggests that DoD is heavily subsidizing civilian facilities. AFIP is generating revenue from civilian hospitals at roughly \$90 to \$105 per case while its actual cost is more than \$400 per case.

Similarly, 91 percent of the customers who buy AFIP's education services are non-DoD. The ARP receives about \$2.1 million in reimbursements for education and training, but these courses apparently cost between \$5 million and \$13 million.

AFIP does not have an accounting system that provides it with a clear understanding of the total costs of running the organization and the costs of providing each product or service. Because AFIP could not supply these data, we could not identify which services were cost-effective and which could be altered or curtailed. An accurate cost accounting system is essential if AFIP is to become self-sufficient.

We believe that AFIP could exist as a fee-for-service activity. Charging customers for services provided will lead to a more efficient allocation of resources. However, if AFIP is to support itself on a fee-for-service basis, it would need a significant organizational restructuring.

Competition between alternative providers, public and private, must be an essential ingredient in any change in organizational structure. It is the critical incentive needed if AFIP is to become more efficient. A large body of literature exists on the benefits of competition between government and private service providers. That research finds that government providers typically reduce costs by 20 percent or more in response to competition. In addition, any organizational restructuring should be based on the key organizational principles identified in the "Revolution in Business Affairs"—cost visibility, self-sufficiency, competition, and performance goals.

Adopting any alternative structure that meets these principles would require AFIP to support itself on a fee-for-service basis and would have a significant effect on the organization. However, it would affect different activities in different ways. For example, consultation, which is one of AFIP's main activities, is highly subsidized to civilian facilities. A decision to charge for these services would probably reduce demand, at least in the short run. Education is another of AFIP's activities that is highly subsidized. Charging full cost for these services would almost certainly change the nature of the education and training that AFIP provides. On the other hand, research and direct analysis, yet another of AFIP's major activities, would be affected to a

lesser extent because much of this effort is already operating on what is, in effect, a reimbursable basis.

Some elements of the AFIP organization may not lend themselves to a fee-for-service structure. For example, the museum and the National Tissue Repository provide great value to the medical community. However, their contribution to the day-to-day work of the rest of the organization might not justify their overhead costs. If DoD wants to maintain these functions, it will probably need to fund them separately rather than through charges to AFIP's customers.

The facilities issue is a factor that DoD should take into account when deciding whether to put AFIP on a fee-for-service basis. AFIP plans to renovate its existing main building at a cost of \$100 million and construct a new building that will cost \$250 million. If this construction is privately financed, the cost will substantially raise the rates AFIP must charge its customers. Also, a new building would substantially increase the space occupied by AFIP and would imply a long-term commitment to an organization that is at least as large as AFIP is now.

Alternative organizations

We have identified six alternative organizational structures that could be adopted by AFIP to make it self-sufficient. The alternatives include a working capital fund, a British-style executive agency, a government corporation, a public-private partnership, an employee stock ownership plan (ESOP), and an asset sale. These six alternatives represent a spectrum from a traditional government organization with improved financial management to full privatization.

The first two options—a defense working capital fund (DWCF) and a British-style executive agency—are reimbursable government organizations. To achieve the maximum efficiencies that these types of organizations can provide, customers must be able to choose whether or not to use this new organization. A DWCF activity that is granted a monopoly position is unlikely to be an improvement over direct funding. The other four alternatives—federal corporation, public private partnership, ESOP, and asset sales—in varying degrees, resemble a fully privatized solution.

We found that all six options would substantially meet the requirements of cost visibility, self-sufficiency, competition, and performance goals and metrics. In every case, there is a requirement for a solid accounting system that identifies costs associated with specific products. All would put AFIP in a more competitive environment and lead to more efficient use of governmental resources. However, all would raise some implementation issues, particularly in regard to easing the transition for employees.

We assessed the advantages and disadvantages associated with each of the options. There are also several key policy considerations that must be addressed before the best alternative can be selected from among the viable structures that we present. The policy considerations include such questions as:

- Are there any aspects of AFIP that are so governmental in nature as to preclude private sector involvement?
- Can the new organization be allowed to fail?
- Is it critical for the government to have managerial control?
- Is it critical that military personnel be assigned to the new organization?
- Can functions that may not be able to recover their full costs, such as the museum, be treated as separate entities or directly funded as overhead items?
- What remedial steps are needed before any alternative organization can be reasonably considered?
- How quickly must the Department act?

These considerations can only be addressed by DoD's decision-makers. The results of our evaluation will make it easier for DoD's decision-makers to make the right choice based on their own priorities.

The focus of this analysis is on evaluating alternative funding approaches for AFIP. In addition, the sponsor asked us to investigate whether any of AFIP's functions were inherently governmental or

could be discontinued. Though this was not the focus of this study, we can provide some insights from the analyses we conducted.

Are AFIP functions inherently governmental or commercial? Simply put, this asks whether the function under consideration is so intrinsically part of the act of governing that only government employees can be allowed to perform it. Even if a private sector counterpart existed to perform the function, the function should not be converted to contract. In general, AFIP's functions do not meet this criterion. AFIP's functions have commercial counterparts; ARP contract personnel are spread through virtually all of the AFIP organization, including senior management positions; and AFIP's DoD customers are allowed to choose between many needed services from either AFIP or private providers. Military hospitals routinely choose where to obtain consultations and continuing medical education, and AFIP's civilian customers may obtain pathology services wherever they wish.

Could some AFIP functions be discontinued? Possibly. However, AFIP does not have an accounting system that can provide it with a clear understanding of the total costs of running the organization or of how much it costs to provide each function, product, or service. Based on our analysis of the cost of AFIP services, which of necessity was approximate, we found that the services are heavily subsidized. However, as uneconomic as the provision of these services appears to be, that does not necessarily mean that they should be discontinued. Rather, they may have true or unique value to the medical community, but need to be provided in a more cost-effective manner.

Approach

In preparing this paper, we reviewed literature on AFIP, ARP, and other relevant subjects to learn more about the workings of the Institute and its use of funds. We also reviewed literature on the DWCF and other types of fee-for-service arrangements used by governmental institutions. We examined the organizational structure and financing mechanisms of other organizations whose mission was similar to that of AFIP. Specifically, we examined the British Forensic Science Service to determine whether the recent changes to its

organizational and financial structure offer approaches that could be applied to AFIP. In our analysis of alternative organizational structure, we made extensive use of the structures described in recent documents published by RAND¹ and the General Accounting Office (GAO).² Our analysis of AFIP is based on the literature; staffing, budget, and performance data provided by AFIP; and a recent evaluation of AFIP by the Department of Defense Office of Health Affairs.

Unfortunately, the available data on AFIP staffing, budget, and performance were often incomplete, and this prevented us from making as detailed an analysis as we would have liked. For example, we were not able to identify which services could be scaled back or curtailed, or which were essential to support AFIP's military mission. As a result, the alternatives we considered are designed to improve cost visibility and use market forces to identify which products and services would be viable in a competitive environment.

Organization of the paper

We begin with an overview of AFIP—its history, its organizational structure, its products and services, and its funding arrangements. Next, we discuss a series of good organizational principles that guided our analysis of the current and alternative organizational structures. In the sections that follow, we analyze a range of organizational structures and describe their pros and cons as they apply to AFIP. Finally, we present a set of criteria that should be helpful to DoD decision-makers as they assess which organization would be the most appropriate for AFIP.³

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1. Document No. MR-1103-OSD, *A Casebook of Alternative Governance Structures and Organizational Forms*, 2000.
 2. GAO/GGD-97-121, *Terms Related to Privatization Activities and Processes*, July, 1997.
 3. A review of potential reforms that could help improve the efficiency of DoD is included in *Creating a "Revolution in Business Affairs" in DoD*, CNA Research Memorandum 97-126, February 1998.

Background

History

The Armed Forces Institute of Pathology (AFIP) is a tri-service agency subject to the authority of the Assistant Secretary of Defense for Health Affairs.⁴ It traces its history to the year 1862 and the founding of the Army Medical Museum. The museum's purpose was to collect pathology specimens and tissues from soldiers with diseases, wounds, and injuries sustained during the Civil War. The collection was initially used by the military medical community to improve military medicine.

Civilian involvement with the museum started in 1866, when the civilian medical community was first allowed to use the museum's educational facilities. This involvement continued to grow. In 1921, Major G. R. Callender, Curator of the Army Medical Museum, established a set of bureaus intended as depositories of the products of research in the different pathology specialties. The American Registry of Pathology (ARP) was established that same year to manage the depositories, referred to as registries, and to facilitate the cooperation between military and civilian health personnel.

As demand for pathology consultation increased, the museum became more of a provider of pathology expertise, and because of this evolving role, it was decided to rename the organization. In 1946, the Army Medical Museum became the Army Institute of Pathology. In 1949, it became the Armed Forces Institute of Pathology in recognition of its importance to all branches of DoD, with the museum providing civilian and public interface.

4. DoDD 5154.24, October 28, 1996.

The relationship between AFIP and ARP was codified in 1976. The legislation enacted by Congress established ARP as a nonprofit foundation to serve as a primary focus for the exchange between the civilian and military health systems. This allows AFIP to generate revenues by charging for consultation, education, and publications.

Finally, in 1989, the museum assumed the name National Museum of Health and Medicine of the Armed Forces Institute of Pathology.

Today, AFIP provides diagnostic consultation, education, and research in medicine, dentistry, and veterinary medicine to the Armed Services and the general public. AFIP is the pathology reference center for DoD and the Department of Veterans Affairs. AFIP carries out its mission through a worldwide program of medical consultation, education, and research in partnership with government, academic, and private sector organizations.

AFIP is located in five geographic locations in nine buildings distributed over the District of Columbia and Montgomery County, Maryland. Since 1955, its headquarters has been located on the grounds of the Walter Reed Medical Center. AFIP now occupies about 450,000 to 500,000 square feet of office and laboratory space.

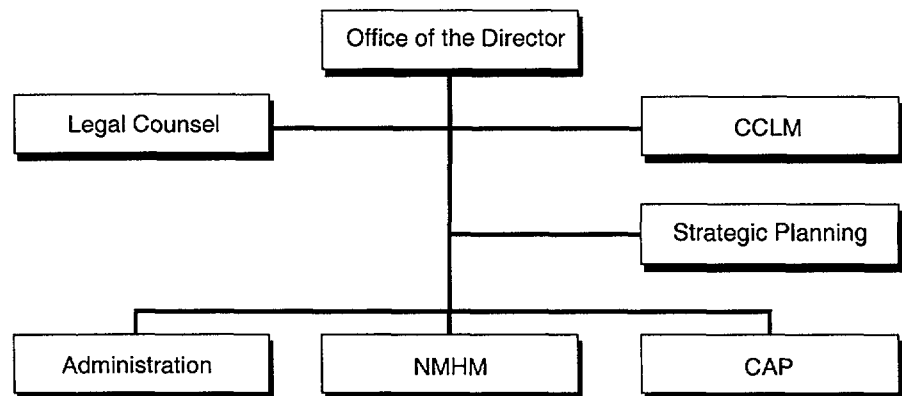
Organization and affiliations

AFIP is the largest Field Operating Agency (FOA) of the Army's Office of the Surgeon General. It is headed by a Director who is rotated every 4 years between the Army, Navy, and Air Force. The institute receives broad administrative and professional policy and guidance from a Board of Governors, and scientific and technical advice from a Scientific Advisory Board.

AFIP is organized into three principal offices—the Center for Advanced Pathology (CAP), the National Museum of Health and Medicine (NMHM), and the Chief of Staff for Administration. There are also three staff offices—the Office of Legal Counsel, the Office of Strategic Planning, and the Center for Clinical Laboratory Medicine (CCLM).

CAP, the largest of the offices, consists of 27 departments organized into 6 groups. CAP is the backbone of AFIP because it provides the Armed Forces and the general public with AFIP's major product—secondary consultation expertise. NMHM seeks to be a bridge between biomedicine and the general public, and focuses on public and military health issues through its collection and preservation of military medical specimens. Figure 1 shows how AFIP is organized.

Figure 1. AFIP organization



AFIP has a continuing partnership with the ARP, as specified by Congress in 1976,⁵ which gives the civilian medical community access to AFIP services. AFIP is authorized to:

- Contract with ARP for cooperative enterprises in medical consultation, education, and research between AFIP and the civilian medical profession.
- Make available, at no cost to ARP, space and facilities, equipment, and support services.
- Contract with ARP for the services of professional, technical, or clerical personnel needed to carry out their cooperative enterprises.

5. 10 USC 177.

ARP is authorized to:

- Provide support to AFIP in advancing its civilian and military pathology pursuits.
- Work with professional societies to establish and maintain registries of pathology. A registry is a collection of rare and unique cases of disease to include cardiovascular disease, oral and maxillofacial disease, neuropathy, AIDs, and emerging infectious disease. As of November, 2000, there were 42 registries.
- Accept gifts and grants from, and enter into contracts with, individuals, private foundations, professional societies, institutions, and governmental agencies.
- Act as a fiscal intermediary.
- Charge fees for professional services.

AFIP's affiliation with ARP is comparable to the affiliation between the Uniformed Services Health University and the Jackson Foundation, a private, nonprofit service organization dedicated to improving military medicine and public health. AFIP has affiliations with a wide range of medical and educational institutions and associations, as well as government agencies for research and education purposes.

Products and services

AFIP provides a range of consulting, research, and education services to DoD and civilian health organizations. In 1999, AFIP accomplished the following:

- Provided more than 500,000 hours of education services, including more than 50 pathology courses. For example, AFIP's Continuing Medical Education Program, carried out in conjunction with ARP, provides continuing education to DoD and non-DoD federal agencies. Civilian health care providers also participate but must pay tuition. The instruction may be classroom, correspondence, or internet based. In 1999, the AFIP and ARP offered 74 education programs to 9,118 attendees.

Attendees include U.S. military, federal, and civilian medical professionals as well as professionals from Canada and the rest of the world. Based on FY 2000 estimates, customers for AFIP courses break out as depicted in figure 2.

- Did almost 110,000 consultations. Of these, 50,000 were secondary consultations for civilian, military, and federal customers; 42,000 were primary cytology examinations for the Air Force; and the rest were interdepartmental. For 49 percent of the second opinion consults, the initial diagnosis was changed or modified, and the course of treatment was changed as a result. Most of these consultations are provided free of charge to military customers; civilian customers are charged a fee. AFIP professionals also deployed to 6 airplane crash sites to assess the deaths of 47 victims. Figures 3 and 4 depict the 1999 breakout, by type of customer, for consultations and secondary consultations, respectively.
- Engaged in research projects that examined new technologies such as magnetic resonance microscopy or determined new ways to deliver the best possible consultations. These efforts resulted in 21 new immunostains, 17 new DNA/RNA tests, 9 new toxicological assays, one research protocol, and one patent application.

Figure 2. FY 2000 course attendees by type of customer

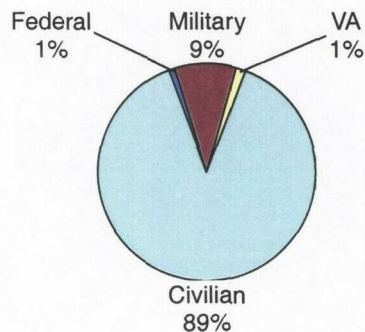


Figure 3. 1999 consultations by customer

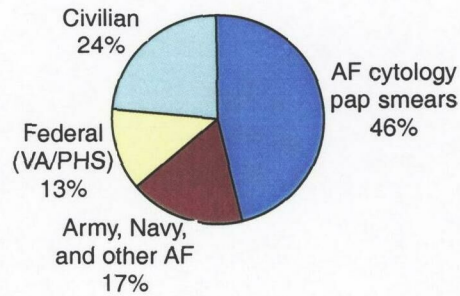
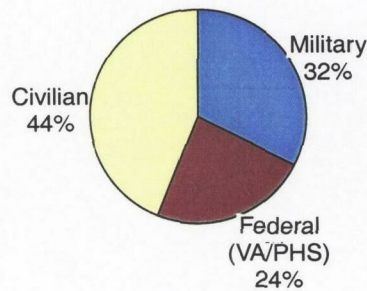


Figure 4. 1999—number of secondary consultations by type of customer



In addition to its consulting, research, and education services, AFIP maintains a number of repositories or databases that are valuable resources in the pursuit of knowledge concerning the etiology and pathogenesis of disease. There are five key repositories:

- The National Tissue Repository maintains specimen samples for the identification of remains. Over the years, it has archived 3 million samples. The repository is housing an additional 3 million samples that were sent to it from hospitals that were closed under the Base Realignment and Closure Act (BRAC).
- The DoD DNA Registry has the Armed Forces DNA Identification Laboratory which is known for its analysis of ancient and degraded specimens. This laboratory may take work from non-DoD federal

agencies and non-federal entities on a reimbursable basis. The fee, however, may be waived by the Armed Forces Medical Examiner.

- Veterinary Pathology has an archive of more than 80,000 accessioned cases and serves as the reference pathology center for DoD and the Department of Veteran Affairs.
- The Department of Legal Medicine reviews recently closed medical malpractice claims in DoD and performs trend analysis to help the services in quality assurance improvement and risk management. In 1999, they reviewed about 1,000 of these cases. They also publish a medicolegal journal which provides Continuing Medical Education credits.⁶
- Environmental Medicine covers environmental, drug induced, and radiation pathology for analysis in determining the cause of injury to both humans and animals.

AFIP also operates the National Museum of Health and Medicine which collects and preserves medical artifacts, pathological and skeletal specimens for, among other reasons, research, instruction, and medical surveillance. The collections and archives are used in support of current military readiness research by DoD and others. The museum attracts more than 100,000 visitors yearly and provides researchers and investigators with access to a number of unique collections and archives.

Staffing and budget

Staffing

As of February 2001, AFIP's staffing consisted of 769 people⁷ of which approximately 146 were pathologists (10 of them in training). Of the 769 people, 283 were Department of the Army civilians (DAC); 230 were provided by ARP through a memorandum of understanding

6. AFIP Letter, Vol 158, No. 4, August 2000.

7. Staff and budget numbers are approximate due to lack of consistent and reliable data.

(MOU); and 165 were military personnel. The remaining 91 people include 14 Department of Veterans Affairs civilians and a number of other contractors. Table 1 provides a breakdown of AFIP staffing by type and by organizational component. Figure 5 provides a graphic picture of AFIP's current staffing by type of employee. The total figure of 769 does not include about 54 other contract employees working directly for ARP.

Table 1. AFIP personnel distribution by organization and type

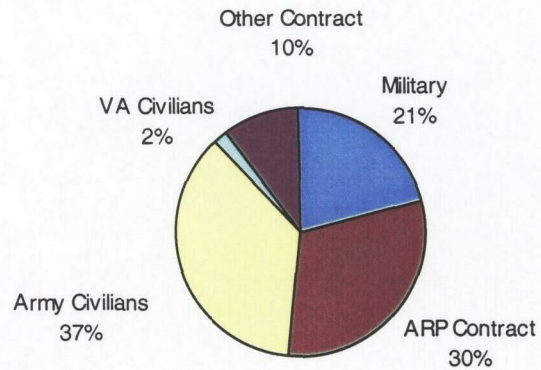
	Army		ARP		Totals
	Military	Civilians	Contract	Other*	
Office of the Director	11	2	0	2	15
Chief of Staff for Administration	27	74	0	41	142
Museum	0	12	15	0	27
Center for Advanced Pathology					
--Chief for Advanced Pathology					
Operations	1	7	0	10	18
--OAFME	27	18	66	0	111
--Legal Medicine	2	6	10	1	19
--Tissue Repository	2	63	0	13	78
--Training	3	0	1	10	14
--Musculoskeletal and					
Reproductive Diseases	19	18	18	3	58
--Heart, Lung & Aerodigestive					
Diseases	8	11	23	3	45
--Special Laboratory Medicine	29	47	42	3	121
--Environmental Medicine	35	25	52	5	117
--Dept. of Telemedicine	1	0	3	0	4
Totals	165	283	230	91	769

*Includes GS contractors, Electronic Data Systems contractors, VA civilians, others.

Note: ARP has about 54 other personnel not working for AFIP.

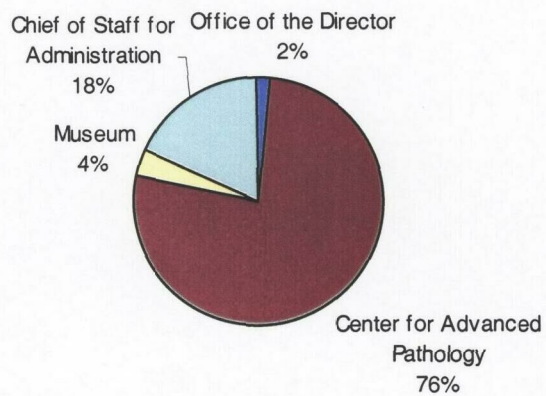
From the organizational perspective, CAP accounts for 76 percent of total AFIP staffing (585 people); the Office of the Chief of Staff for Administration accounts for 18 percent (142 people); the museum account for 4 percent (27 people); and the Office of the Director

Figure 5. Current AFIP staffing by type of employee



accounts for the remaining 2 percent (15 people). This breakdown is shown in figure 6.

Figure 6. Current AFIP staffing by organizational component



Within CAP, there are some important pieces of AFIP. The Office of the Armed Forces Medical Examiner, (OAFME), which accounts for 111 personnel, includes the Quality Assurance for DoD Drug

Program, and the DNA Registry/Armed Forces Identification Laboratory. Also, within CAP there is the Department of Epidemiology, Repository and Research Services. This is the tissue repository, and it accounts for 78 of the 585 people in CAP. The rest of the personnel are spread across the different pathology groups.

Budget

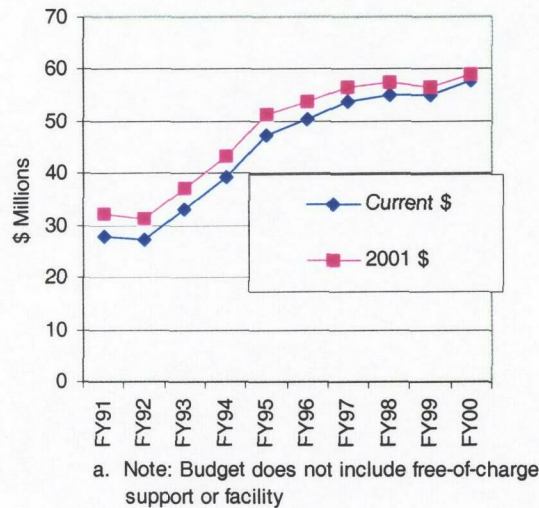
In FY 2000, the AFIP had a budget of \$67.6 million. That figure includes a one-time investment of \$10 million for facility renovations. Excluding that cost, the AFIP budget is \$57.6 million. That number has remained fairly steady during the last half of the 1990s, after a period of growth in the first half of the decade. That total is made up of \$49 million from the Defense Health Program, \$4.9 million from the Army, and \$3.7 million provided from ARP revenue. The ARP retains about \$2 million for its expenses that aren't included here.

Figure 7 shows AFIP's budget for the last 10 years. Over that period, it has doubled from just under \$30 million in FY 1991 to \$58.2 million in FY 2001, excluding funds for facility renovation. The budget does not include the cost of military personnel, which is roughly \$18.3 million per year. Thus, the total cost to operate AFIP is about \$76 million per year.⁸

One further issue concerning the budget is the request by AFIP for a new building. AFIP now occupies about 450,00 to 500,00 square feet of office and laboratory space, but it says that it needs 620,000 square feet of space. To meet this need, AFIP has proposed to construct a new 420,000 square foot facility on the Walter Reed grounds, and renovate the headquarters building. To that end, AFIP has requested \$250 million in new construction funds and has proposed a 10-year \$100 million renovation plan for its main building.

8. This operating cost includes costs for leased space but not the cost of major renovations or depreciation on government-owned facilities. As a result, it substantially understates the full cost to the government. Also, AFIP reimburses its host facility, Walter Reed, for some facility costs, but that reimbursement is less than the full costs of operating its sites on the Walter Reed campus. In addition, some facility costs at other sites are paid for by the General Services Administration.

Figure 7. AFIP historical budget



Private sector counterparts

AFIP is not the only provider of pathology consultations, research, or education services. The private sector, principally medical institutions and universities, provides similar services. For example, the Mayo Clinic has about 2,000 medical research personnel. The Mayo Clinic has a group of pathologists and related scientists in 58 specialty laboratories. AFIP and the Mayo Clinic recently collaborated on a 4-year project that resulted in a 450-page atlas on gastrointestinal endoscopy.

Other examples of private providers include the University of Washington Medical Center, the University of Pennsylvania, Johns Hopkins, and the University of California Davis. The pathology expertise in each institution may be different in either the level or the mix. The same is true for education and research.

The other services that AFIP provides—for example, the Armed Forces DNA Identification Lab, the Office of the Armed Forces

Medical Examiner, Legal Medicine, and quality assurance for the DoD Drug Program—may not be as readily available elsewhere.

There is one important difference between AFIP and the rest of the civilian institutions. For the civilian institutions, secondary consultations account for only a small part of their revenues. Their main sources of funds are patient care, education (in the sense of medical schools), and research grants.

Currently, military medical organizations may choose between the services of private suppliers and AFIP for many of the services that AFIP provides. Examples include consultations and continuing medical education (CME) credits.

Guiding principles

DoD is striving to achieve a “Revolution in Business Affairs” to increase the efficiency of the department. As part of this revolution, DoD wants to make its various activities as self-sufficient as possible. The revolution adopts several basic principles that are essential to achieving good management of government organizations as well as self-sufficiency and increased efficiency.⁹ Two of these principles are cost visibility and the introduction of competition.

We used the principles embedded in the “Revolution in Business Affairs” to identify and evaluate alternative organizational structures that AFIP can embrace to promote efficiency and increase the quality of the work that they perform. We also identified key policy considerations that DoD decision-makers must address before they can select from among the viable structures that we present. This section summarizes these organizational principles and policy considerations.

Finally, in this section, we also address the key components for a successful transition from the current organization to a new, more self-sufficient and efficient one.

Best organizational principles

Cost visibility

One of the first principles is cost visibility. Both the buyer and the seller need to have a clear understanding of what things cost. Sellers need to know, not only total costs of running an organization, but

9. Reforms that could help improve the efficiency of DoD are reviewed in *Creating a “Revolution in Business Affairs” in DoD*, CNA Research Memorandum 97-126, February 1998.

how much it costs to provide each product or service. Buyers, on the other hand, must be able to identify and evaluate the cost of a final good or service. Good cost visibility, once established, promotes accountability from the seller and responsibility from the buyer.

An excellent way to promote cost visibility is through charge-back rates. Through a charge-back, or fee-for-service system, goods and services are sold to customers rather than given away. Under such a system, the government organization no longer receives funds through direct appropriation, but instead bills its customers for goods and services provided. This type of system promotes the cost-effective consumption of goods and services because customers are now required to pay for what was previously provided free. (Note: If the customers also work for the government, it is assumed that the service provider's move to a charge-back structure will be coupled with a change in the amount of funds allocated to the customer.)

Once customers are required to pay for goods and services, they will start to evaluate the prices being charged and the services being provided, both in absolute terms and as compared to the private sector. This type of scrutiny will motivate service providers to ensure that they are providing goods and services in a cost-effective manner and at a level that meets the customers' expectations. The impact on cost will be particularly strong if customers are permitted to use the private sector when it is cost-effective to do so.

Effective charge-back rates that foster responsibility from customers and accountability from service providers incorporate the following principles:

- *Rates should be tied to the costs of providing final goods and services to customers.* By creating rates in this fashion, customers can understand and evaluate the price of a product. For example, when buying a car you are charged for the final product, the vehicle. You are not charged separate prices for the steel, the glass, the labor, the overhead, etc., which you would find difficult, if not impossible, to evaluate. Charge-back rates in a government agency, whether it is providing goods or services, should be tied to the final product received by the customer.

- *To the extent possible, charge-back rates—or pricing structures—should mirror the structures used by the private sector.* When a government agency sets out to design charge-back rates, it should start by determining what pricing structures are being used by similar organizations in the private sector. This will ensure that the rate structures are logical to customers. Through this type of rate structure, customers understand what they are paying for on a unit basis and how their total cost will be affected if they increase or decrease their demand for services.
- *Rates should recover only the direct and indirect cost of a specific type of service.* Cross-subsidization between products makes it hard to recognize and control costs because it obscures the link between customers' behavior and the charges they incur.
- *Rates should recover fully burdened costs.* Rates should be designed to recover the total costs that the organization incurs to provide the product. Excluding some of the costs reduces the ability of managers to fully understand and be accountable for their costs (and fosters increased reliance on subsidies from the governing body). It can also artificially increase customer demand for the product because prices are unnaturally low.
- *Rates should be designed to provide for the timely replacement of assets.* Charge-back systems are also valuable in that, through cost recovery, a government agency can provide for asset replacement without direct appropriation. When coupled with a working capital fund, an agency can build capital reserves for replacement of assets.

Self-sufficiency

A major principle in the development of charge-back structures is the full recovery of costs. When revenues received cover the full costs of operations (labor, supplies and materials, overhead, depreciation, and subcontracts) and provide enough money to ensure replacement of assets, an organization is considered to be self-sufficient. Self-sufficiency—meaning the organization receives no direct appropriations—ensures efficiency because management must rely on revenues to cover operating costs and long-term planning.

Public goods

Public goods are an example of services that should not be recovered through charge-back systems. A public good is a product or service that, once produced, can benefit everyone (including those who choose not to pay for it) and that does not increase in cost as additional people benefit from it. The notion that not everyone has to pay for a public good implies that it may not be profitable for a private enterprise to produce such a good. However, it may be in the public interest to have that good (for example, clean air, national defense, or pure research in the public interest). Because public goods provide a benefit to society that is far greater than their cost or market value, it often becomes the government agencies' role to provide such goods.

In many cases, a government agency is providing a set of products that include some public goods and some products with a true market value. Bundling the costs of public goods into the price of other products artificially drives up prices and decreases demand for goods with a true market value. Further, it unfairly requires the customers to pay for public goods that are enjoyed by all. Public goods should be funded through direct appropriation and excluded from charge-back regimes for other products.

Performance metrics and goals

Just as awareness of costs promotes efficiency from both providers and customers, awareness of performance enables providers to get a full picture of the quality of goods and services they provide and the extent to which their customers are satisfied. Performance goals should be incorporated into all business plans with, if possible, incentive packages to empower employees to meet performance objectives.

Before it sets performance goals, management must first understand the current level of performance and set realistic targets for improvement. These goals can best be met by developing performance measures that provide a full picture of the organization. Performance measures should focus on four areas: quality, customer satisfaction, and utilization cost:

- Quality measures look at issues of how well services and products are being provided. These performance measures evaluate error rates, downtime, re-calls, or re-dos. Quality measures can provide management with information on how to increase cost-effectiveness by changing the mix of processes, training, and personnel. For example, by looking at the areas in an organization with the highest error or re-do rates, management can easily identify areas where money spent on increased training will have the greatest impact.
- Customer satisfaction measures correspond closely with quality measures but focus more on the perceptions of customers than of management. Such measures include the number of complaints received or the number of products returned for re-dos in a given time period.
- Utilization measures look at how efficiently an organization is using its assets. In the past, such measures have focused on equipment and real property. Examples include vacancy rates for office space, churn rate, usage of equipment as a percentage of capacity, personnel per square foot, etc. By understanding utilization, management can identify excess capacity and salable assets, or, conversely, areas where additional equipment or space would lead to increased productivity and lower costs.
- Cost measures. Once these measures are developed, management can set realistic quality targets and goals.

Competition

Competition is another best organizational principle that is critical to effective management. Competition can mean (1) competitions between the public and private sector for the sole right to provide the product or service or (2) the ability for customers to buy products or services from either the government provider or a private sector firm. In either case, the inclusion of competition ensures that initiatives promoting cost reduction and quality improvement are not conducted only “at the margin.” Through competition, the most efficient organization ultimately provides the product. There is a large body of

literature on the benefits of competition between government and private service provider. These studies indicate that government providers typically reduce costs by 20 percent or more in response to competition.

Policy considerations for selecting the best alternative structure

There are also several key policy considerations that must be addressed before the best alternative can be selected from among the viable structures that we present. We identify these policy considerations in question form because they can only be answered by DoD decision-makers. In the final section of this paper, we do, however, evaluate the alternative structures in terms of these questions to make their consideration easier. The questions are:

- Are there any aspects of AFIP that are so governmental in nature as to preclude private sector involvement?
- Can the new organization be allowed to fail?
- Is it critical for the government to have managerial control?
- Is it critical that military personnel be assigned to the new organization?
- Can functions that may not be able to recover their full costs, such as the museum, be treated as separate entities or directly funded as overhead items?
- What remedial steps are needed before any alternative organization can be reasonably considered?
- How quickly must the Department act?
- Is the Department willing to seek legislation?
- How important is it to address the potential replacement and/or renovation of facilities?
- Must AFIP's desire for new and renovated facilities be explicitly addressed in the selected alternative?

Transition

Instituting the best organizational principles defined above will require a major shift in the culture, structure, and operation of most government agencies. Organizational transition takes time and effort, and major roadblocks can arise along the way. If transition problems are expected, however, action plans and procedures can be put in place to address problems as they occur. Any move from a direct-funded organization to one in which there is competition, an awareness of full costs, and a strategy to measure performance will probably encounter challenges in the following areas:

- *Accounting systems*—Because most organizations that are funded through direct appropriation do not generate revenue, they do not have accounting systems that provide the type of cost visibility that is needed for a charge-back system. Further, current systems may not provide all the information managers need to determine what the rates should be to ensure accurate and adequate cost recovery. Management should plan for a 3-year transition to new stand-alone systems, with the old and new systems running concurrently for one of the years. This will require additional labor effort.
- *Employees*—The move from a direct-funded entity to one where employees are responsible for costs and customer satisfaction may, at first, be very difficult for employees. Such changes require a major shift in the culture of an organization. Keeping the employees informed as the process moves forward and empowering them to be part of the process will help employees embrace the change rather than fear it. Incentives designed to retain key employees should also be put in place.
- *Mix of staff*—management should be prepared to change the size and mix of the staff as best organizational principles are implemented. Increases in efficiency and quality can cause increases in demand for products and services, with a corresponding need to increase the staff. Conversely, if an agency becomes more efficient but demand for its products and services remain fixed, it should be able to decrease the size of its staff.

- *Customers*—If an organization transitions from direct appropriation to a system where customers must “buy” products and services, the customer organization will have its own transition problems. Customers will be required to budget for the products and services they were previously receiving for “free,” and they will not know how to determine their true demand. Managers should work with their customers throughout the implementation process to address their concerns and help them to identify their product needs.
- *Lag time*—Transition plans should afford some protection for managers that will allow them to work out any problems that they encounter. The service provider will probably have some protection from cost overruns and funding shortfalls for at least the first 2 years of implementation. This will give managers time to hone their charge-back rate structure and gain a better understanding of how the introduction of competition will change customers’ demand for their products.

Analysis of the current AFIP organization

After comparing the current AFIP organization with the best organizational principles described in the previous section, we conclude that the organizational structure needs to be changed if it is to be truly self-sufficient. Although it does charge for some of its services, and there is limited competition between AFIP and private providers for some services, AFIP does not meet many of the key principles embedded in the "Revolution in Business Affairs." Specifically, it doesn't have cost visibility, doesn't fully recover its cost of services, and does not have clearly articulated performance goals and metrics. Our findings are reinforced by those of the Department of Defense Office of Health Affairs' recent evaluation of AFIP.

Although AFIP does not meet many of the best organization principles that we used to identify and evaluate alternative organizational structures, our limited review of customer demand indicates that AFIP's work is respected and highly regarded. As a result our focus was on identifying alternative structures that would improve financial management and make the organization self-sufficient. We need to recognize, however, that even though the work may be good, customers may go elsewhere when forced to pay for the full cost of receiving the services.

Cost visibility

AFIP does not have an accounting system that will provide it with a clear understanding of, not only the total costs of running the organization, but also how much it costs to provide each product or service. The Health Affairs Council of Colonels has concluded also that AFIP's cost accounting and billing practices are inadequate.

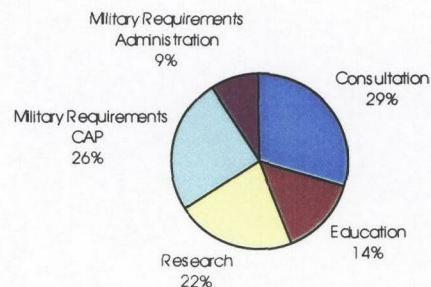
Because we lacked the necessary data, we could not identify which services were cost-effective and which could be altered or curtailed. For example, it was impossible for us to determine whether the

museum could be self-supporting or to identify the true value of the tissue repository to the medical community. As a consequence, our analysis of the cost of AFIP services is, of necessity, approximate and based on calculated assumptions.

Cost of services

AFIP offers three primary services: consultation, education, and research. In 1997, AFIP analyzed its workload to determine what proportion of its total effort was going toward consultation, education, research, and military requirements. Figure 8 depicts their findings.

Figure 8. Distribution of effort at AFIP



AFIP defines a military requirement as any function that takes an employee away from consultation, education, and research. This is especially relevant for military requirements associated with CAP. Military requirements include such things as duties of military personnel associated with their military status, assignment of AFIP personnel for temporary duty elsewhere, and the writing of evaluations for military and general schedule (GS) personnel. It also

includes time spent on what can be considered overhead. Because we cannot separate what may be overhead from the total military requirements of CAP, we leave that piece out when associating cost with the three main functions. Military Requirements Administration can all be considered overhead because it is the effort spent by the Office of the Director and the Chief of Staff for Administration. This piece we do spread evenly across consultation, education, and research.

Consultation

Although secondary consultations vary dramatically, it's useful to estimate their average cost.¹⁰ The AFIP accounting system doesn't directly provide the cost per consultation, but we can approximate that cost in some relatively simple ways. We apportion the annual operating cost of AFIP (\$76 million) by the proportion of staff effort (32 percent) and find that the total cost of secondary consultations is about \$24.3 million. AFIP estimates the number of secondary consultations conducted at somewhere between 57,000 and 60,300. Dividing the total cost of consultation—\$22.8 million—by the total number of consultations provides estimates of a unit cost of \$403 to \$427 per consultation.

In 1997, AFIP conducted an in-house analysis of the cost of second opinion cases. That analysis estimated the cost per case as \$434. Although conducted at a finer level of detail, the 1997 AFIP analysis used a method similar to the one we've used here so it shouldn't be surprising that the results are fairly comparable.

A large portion of AFIP's secondary consultations are for civilian institutions. These institutions are charged based on a fee schedule developed by ARP. The fees are set to be comparable to civilian rates. The rates vary by type of case, and no data were available on the mix of cases. We've looked at the cost of the average case.

10. The Air Force Cytocenter conducts about 40,000 primary consultations, analyzing Air Force pap smears. We did not include those consultations in this analysis.

We used data from the 1999 AFIP Annual Report to break out secondary consultations by source and identified 44 percent of second opinions as work for civilian medical facilities. In support of this study, AFIP provided numbers for FY 2000 that show civilian consultations as 39.6 percent of all cases. We use both estimates to provide a range of AFIP's expenditure of resources on civilian cases. Assuming that civilian cases are comparable in cost to the overall average, AFIP expends between \$9.6 million and \$10.7 million on civilian consultation. ARP's revenues from these cases in FY 2000 were roughly \$2.4 million, which suggests that DoD is heavily subsidizing civilian facilities. AFIP is receiving roughly \$90 to \$105 per case from civilian hospitals while its actual cost is more than \$400 per case.¹¹

Education

Education is another major function of the AFIP. ARP and AFIP run about 75 educational programs that provide roughly 50,000 man-days of education to pathology professionals. Figure 2 shows that 89 percent of the attendees are not federal employees. For example, about 97 percent of radiology residents in the United States attend the 6-week radiological pathology course.

The ARP receives about \$2.1 million in reimbursements for education and training, but this is far less than the apparent cost of these courses. In its 1997 cost study, AFIP found that the education function accounted for about 17 percent of annual staff time. This translated into about \$5.1 million for civilian and military salaries. If AFIP overhead was apportioned evenly to this function, the estimated cost of education rose to just under \$13 million. Education may not require as much overhead as consulting or research activities, so the actual costs to the government probably range between \$5 million and \$13 million. In either case, DoD is providing a substantial subsidy to the civilian medical community.

11. The ARP consultation fee schedule appears to set service costs in a range of \$100 to \$500 per consultation. In practice, some civilian consultations are provided without charge. These include some cases for foreign governments and cases where pathologists determine that a consultation had an educational purpose. In addition, consultation collection rates are apparently well below 100 percent.

Research

The third major component of AFIP cost is the research function. There are several sources of funds for this activity. The Defense Health Program (DHP) funds this activity directly through the AFIP budget. The Board of Governors and the Scientific Advisory Board oversee the research plans for AFIP to ensure that the research is consistent with military priorities.

The Office of the Armed Forces Medical Examiner (OAFME) receives a part of its funds directly from other sponsors. This portion of AFIP may serve as a model for how a self-sufficient organization would operate. The Department of Defense DNA Registry, which now contains more than 3 million specimens, is funded by DHP through the AFIP funding line at \$2.25 million annually. DHP also supplements the CAP budget in the amount of roughly \$1.95 million annually. This money is to cover the costs of the repository collection and remains identification for current deaths. Remains identification efforts for the Army Central Identification Laboratory in Hawaii are funded separately at about \$5 million annually. Other federal and non-federal OAFME casework is conducted on a reimbursable basis.

Other functions

AFIP contains several other activities that provide some support for the basic mission of the organization but exist mainly to serve the general public and the greater pathology community. The National Museum of Health and Medicine is open to the public and is a national asset. It has been integral to the AFIP since that organization's inception just after the Civil War. The museum has a direct budget of \$1.6 million annually and occupies about 10 percent of the total AFIP facility.

The National Tissue Repository contains more than 3 million specimens dating back to the Civil War. Seventy-eight personnel are employed in support of this activity with 20 of them directly assigned to the Materials Repository. Two buildings at the Forest Glen site contain the specimens.

Competition

AFIP's DoD customers are allowed to choose between many needed products and services from either AFIP or private providers. For example, military hospitals can choose where to obtain consultations and continuing medical education. But it is less clear whether they have the freedom to select private providers for drug testing, forensic services, DNA analysis, and research development. AFIP's civilian customers, both governmental and private, are, of course, free to choose where to obtain the services AFIP provides. Moreover, because AFIP does not charge for all its services and may undercharge for those it does, full competition does not exist. Demand for AFIP's services is likely to change significantly once customers are asked to pay for the full cost of the service and are free to seek the best value for money.

Customer satisfaction

AFIP lists its products as consultation, education, and research. But as its annual report states, the consult is its main product. Education plays an important part in making connections between AFIP staff and possible users of AFIP. These connections create trust and thereby motivate consult requests. Research improves the quality of AFIP's consults and, through its publications, lets the general medical community know of the expertise available at AFIP. This again creates a demand for consultation.

To get an indication of how customers view the services that they receive from AFIP, we spoke with pathology department heads at several Military Treatment Facilities (MTFs).¹² We felt that this would provide an indication of how regular military users of AFIP viewed consultation services. Although this is a subset of the range of AFIP customers and services, it represents the significant constituency from DoD's perspective and focuses on AFIP's most main product.

12. In total, we spoke with department heads at 21 MTFs from the Army (4), Navy (9), and Air Force (8). The facilities we spoke with included: 6 major teaching/tertiary care facilities, 1 Family Practice teaching hospital, 8 CONUS community hospitals, and 6 geographically isolated facilities (4 OCONUS, 2 CONUS).

For the year 2000, this subset of facilities had roughly 160,000 surgical pathology cases (ranging from fewer than 1,000 annually to more than 20,000 per MTF). Of these, less than 3 percent were sent out for consultation. The primary source for consultation was AFIP (67 percent), next was another MTF (25 percent), and third was a civilian institution (8 percent). The consultations sent to AFIP by these MTFs represent about 16 percent of all military consultations handled by AFIP in 2000.

Not surprisingly, we found that the larger the facility (in terms of surgical pathology caseload and number of pathologists) the smaller the percentage of total cases sent for consultation:

- MTFs with caseloads greater than 15,000 sent less than 1 percent out for consultation.
- MTFs with caseloads of 5,000 to 10,000 sent out approximately 1 to 2 percent.
- MTFs with caseloads less than 5,000 sent approximately 3 to 10 percent of their cases out for consultation.¹³

For most of the MTFs, regardless of size, the percentage of their total consults sent to AFIP was significant—50 to 100 percent. Larger MTFs tended to send the remainder to civilian institutions, and smaller MTFs tended to send their remainder to another MTF.

Because AFIP consultation services are free to the MTFs, we were especially interested in the military pathologists' motivation for using civilian institutions. The most common reasons given were:

- Access to specific expertise
- Established personal contacts

13. Most of these facilities with fewer than 5,000 surgical pathology caseloads are small community hospitals and geographically isolated CONUS and OCONUS facilities. The staff often consists of one pathologist, at most two. We were often told that typically the sole practitioner at these sites will be a pathologist just out of residency who relies heavily on AFIP consultations as a source of support/education/peer review.

- Faster turn around time
- Disagreement with AFIP consultation (fairly rare).

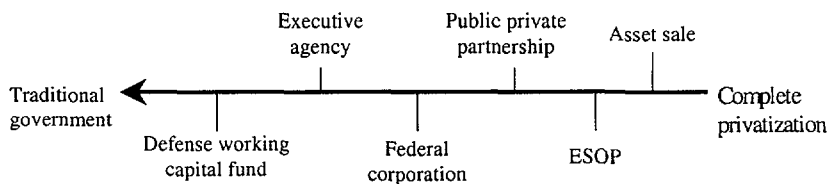
Given that MTFs are willing to purchase some of their pathology consultation requirements from the civilian sector versus free consultation from AFIP, we asked this group of pathology department heads if they would continue to use AFIP services if they were no longer free. Most agreed that AFIP has enough expertise in some pathology fields that, even if AFIP were charging, it would still get MTF consultation requests. Many of the smaller facilities said that they would have to reduce their reliance on AFIP and send a greater percentage of their consults to the larger MTFs (a free resource).

We can assume that the current demand for MTF surgical pathology consultations is inflated because access to AFIP services is free. And, if AFIP begins to charge the MTFs for its services, we would expect some of the current demand for AFIP consultations to shift to the civilian sector and/or the larger MTFs. The size of the overall change in MTF demand for AFIP consultations will depend a great deal on how much AFIP charges. From our small sample of MTF pathologists, we found that most civilian institutions tend to charge between \$100 and \$300 for a consultation although a few charge more than \$1,000. Given our rough calculations of cost, AFIP would find it hard to be competitive if it charged the true cost of what its consultations cost now.

Alternative organizational structures

We were asked to identify and evaluate alternative organizations that could make AFIP self-sufficient. We were specifically asked to examine working capital funds and the British concept of executive agency as embodied by the British Forensic Science Service. In addition to these two alternative structures, we have also identified four additional organizational forms that could make AFIP self-sufficient.¹⁴ Together, they represent a spectrum of alternatives that start with the most governmental option—a working capital fund—and range to a fully privatized option—an asset sale. In between are alternatives that gradually replace government provision and management of the organization to ones that increasingly transfer these responsibilities to the private sector. Each of these alternatives offers a chance for AFIP to use modern business practices, streamline its organization, improve quality, and become more responsive to its customers. Figure 9 depicts how the alternatives fit on the spectrum of direct appropriation agency to full privatization.

Figure 9. Spectrum of alternative organizational structures



14. For ease of discussion, we have used the definitions contained in the GAO pamphlet on privatization terms, and the RAND booklet on organizational forms, *A Casebook of Alternative Governance Structures and Organizational Forms*.

The six structures we discuss all incorporate the three organizational principles—cost visibility, performance goals, and competition—that are essential to any restructuring of AFIP. These factors work in concert to motivate efficient production and thereby lower costs.¹⁵

All options would make costs more visible by requiring AFIP to recover some or all of its costs through revenues from services provided and conform to generally accepted accounting procedures. AFIP would be required to establish some form of performance metrics and goals and to compete with its private sector counterparts.

Most of the alternatives provide for self-sufficiency—for example, if some or all of the services provided by AFIP fail to recover their costs, they will no longer be provided. This could present a problem in regard to the museum and other entities that it operates “for the public good.” These entities cannot be expected to recover their costs so if one of these structures is chosen, DOD may want to retain these entities and fund them directly.

As a rule, government employees and their unions are very resistant to change so AFIP may find that they raise objections to all six alternatives. Customers will be affected also. Those who had not been paying for AFIP’s services will be required to do so, and those who had been paying may well see higher rates. Under all six options, AFIP would need to make a concentrated effort to satisfy its customers in order to retain its reputation.

All alternatives will require time and up front money to make the transition. With the possible exception of the ESOP, all will require legislation.

15. Based on these factors, we did not evaluate such structures as performance-based organizations (PBOs), federally funded research and development corporations (FFRDCs), or government-sponsored enterprises (GSEs) because, in our view, they do not meet the minimum criteria or they are variations of the four alternatives we examine here.

With this overview in mind, we will now proceed to a description of each of the six alternatives and case studies describing successful implementations. For each alternative, we define the structure, discuss its pros and cons, and give an example of an organization that has adopted it. We also assess how the alternative would fit the needs of AFIP. A comparison of these alternatives and an assessment of how they satisfy possible policy considerations follows in subsequent sections.

Because the description of the working capital fund and the British-style executive agency are more lengthy, they are presented as two separate sections. The remaining four alternatives that represent the more privatized options are grouped together in a single section. A comparison of these alternatives and an assessment of how they satisfy possible policy considerations follows.

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Working capital funds

The first alternative that AFIP may embrace is a defense working capital fund (DWCF). Our discussion draws from previous studies on DWCF and the revolving funds that preceded it, DoD regulations and documents, and our interviews with the Naval Surface Warfare Center (Carderock Division), the Naval Air Systems Command (NAVAIR), and the Air Force Flight Test Center.

Concept

The military has long operated many of its activities under the DWCF—or revolving fund—concept. The National Security Act of 1947 provided the authority for the modern day DWCF. In October 1991, DoD established the Defense Business Operations Fund (DBOF) to consolidate many of the original revolving funds operated by the individual military services and to expand the use of better business practices. In December 1996, DBOF was disestablished, and four separate DWCFs (Army, Navy, Air Force, and Defense-wide) were created to give each individual service autonomy and responsibility for managing its own activities.

In essence, a DWCF is based on the market-type system where the buyer-seller interactions help determine the price and quantity of goods and services. Under its alternative (i.e., direct funding), the supplier (a research and development center, for example) receives funds directly from DoD or some other central authority and then provides goods and services free of charge to the operating forces or other end users. Because the customers don't pay for goods directly, they don't always make cost-conscious decisions about which goods to buy, or how much, where, or when to buy. Although the suppliers may face funding shortages, they know that they have steady customers and that they would receive funds as long as the central authority supports the mission of their customers. The lack of cost-awareness

and lack of incentive for greater efficiency are the issues that the DWCF aims to resolve.

Under DWCF, the end users receive funds from the central authority and then use that money to pay the supplier for the goods they want to buy. The suppliers set prices¹⁶ for their goods to generate sufficient revenue to cover their expenses. If they incur losses (or gains) in one year, they recoup (or refund) the amount by reflecting it in the following year's prices. The DWCF acts like a joint checking account; it maintains a cash balance to cover expenses of the DWCF activities which, in turn, deposit their revenue into the account.

The prices a DWCF activity charges to its customers generally cover only operating expenses. Capital expenditures, such as building and infrastructure, commonly are financed directly through appropriated funds and thus are not included in the customer rates. An example of such a program is the construction of new buildings that are funded directly through military construction (MILCON) appropriation.

Types of DWCF organizations

There are two types of DWCF organizations: one has guaranteed work (and thus does not have to compete for work), and the other must compete for all or part of its work. The former has less incentive to improve efficiency or satisfy the customers' demands than do the organizations that must compete for the workload. A DWCF activity that is granted a monopoly position is unlikely to be a substantial improvement over direct funding. DWCF organizations that must compete for work must charge their customers prices that allow them to recoup expenses. Improved cost visibility would be the main benefit of this type of DWCF organization. Moving an organization to a working capital fund and requiring it to compete for work can be a

16. The prices are also called customer rates or stabilized rates. The latter term depicts a peculiar feature of DWCF: Once a supplying activity sets a rate, it must maintain that rate throughout the fiscal year (except for depot maintenance activities). This protects the customers from rate hikes that may deter them from performing their critical defense missions.

first step to eventual privatization. AFIP would probably be the latter type (nonmandatory sourcing) because there are many private sector counterparts that provide similar services.

Although they are not DWCF activities, there are organizations in which some functions are directly funded while others are reimbursed by the customers. The Air Force Material Command's test centers, for example, use this partial reimbursement system. Some have questioned whether these organizations should also become DWCF activities.

Transition

To establish a DWCF activity the Comptroller of the Department of Defense must first approve a charter. This charter, which sets forth the scope of the activity group, is prepared and signed by the Secretary or Assistant Secretary of the military service or the Director of the defense agency, as appropriate.

To be included in a DWCF, an organization must meet four evaluation criteria specified in the DoD Financial Management Regulation:

- Identification of outputs that relate to products or services provided by the business to customers
- Establishment of a cost accounting system to collect costs of producing outputs
- Identification of customers so that resources can be aligned with the requirements
- Evaluation of buyer-seller advantages and disadvantages to include assessment of the customers' ability to influence cost by changing demand.

Recognizing that the DWCF activities must have an adequate cost accounting system, the DWCF Reform Task Force recommended, in January 2000, that all DWCF activities must have a cost accounting capability by FY 2003 and that new activities should not be added to the DWCF "until adequate cost accounting is available which links

costs with outputs." Therefore, it's unclear whether or when AFIP could become a DWCF activity.

DWCF was appropriated an initial cash corpus (similar to an initial deposit to open a checking account) to pay for operating expenses before revenue could be generated and deposited into the fund. A new business area would receive its initial working capital through an appropriation or a transfer of resources from existing appropriations of funds to finance the initial cost of operations.

Pros and cons

Pros

The DWCF structure offers several significant advantages, which include:

- *Self-sufficiency.* The basic concept of DWCF is to operate DoD activities more like private businesses—accordingly, the organization will grow or shrink based on its ability to be competitive and generate sufficient revenue to cover its expenses. However, as mentioned earlier, some capital programs are direct funded and are not included in the customer rates. In this sense, DWCF activities are not fully self-sufficient.
- *Competition.* This is the basic tenet of the market-like system that fosters efficiency. WCF activities that do not have fully guaranteed work face competition from other entities (public or private); however, the mandatory sourcing WCF activities don't have to compete for work.
- *Cost visibility.* A DWCF activity must have a cost accounting system that allows it to collect costs and link them to products and services. Such a system allows the organization, its parent department, and the customers to know exactly what it costs to provide the needed service.
- *Improved efficiency.* The required understanding of its own costs and the need to attract customers in a business-like environment should contribute to improved efficiency.

- *Performance goals.* The principal performance goal for many DWCF activities is the unit cost or cost per direct labor hour, but other goals or indicators may include timeliness, quality, and customer satisfaction.
- *Impact on employees.* Because DWCF activities are government agencies, there is less disruption to the workforce than there would be if they were to be contracted out or privatized. This structure allows for the continued use of military personnel for operations. However, there may be some disruption to employees during the transition, and overall staffing will increase or decrease as a direct result of how successful the new organization is at attracting business. (There would be little impact on the mandatory sourcing WCF activities as long as the work is guaranteed.)
- *Role of the parent department.* Again, because the organization remains a governmental one, the parent department retains overall control of the organization. The parent department can reserve the ability to revert the organization to its initial status. (An example is the Pearl Harbor Naval Shipyard which ceased operation as a Navy WCF activity and began operation as a mission-funded activity beginning in FY 1999 on a test basis).
- *Reputation.* If the organization has a reputation for providing quality service, that reputation will be retained because the organization and its staff will remain the same.
- *Other organizational structures are not precluded.* The decision to become a DWCF activity can be the first step to eventual privatization if, at a future date, the circumstances warrant. For example, the Naval Air Warfare Center Aircraft Division (NAWC AD), Indianapolis, a former NWCF activity was privatized in 1997 with a relatively smooth transition.

Cons

The major drawbacks to this organizational form include:

- *Entrance into DWCF.* The DWCF Reform Task Force recommended not adding new activities to DWCF until adequate cost

accounting that links costs with outputs is available. If adopted, this recommendation may make it harder to add new activities to DWCF.

- *Impact on customers.* The DWCF activities must charge prices that are high enough to recoup all their operating expenses. The customers of direct-funded organizations would no longer receive the services free of charge or at subsidized prices, and, as a result, some may look for equivalent services elsewhere. (This wouldn't apply to the mandatory sourcing WCF activities.)
- *Impact on workforce.* A flexible workforce may be needed. To be competitive, organizations must be able to charge market prices for the services that are demanded. To do this, expenses must be kept in line with revenue. Because the labor costs are often the largest component of the expenses, organizations may need a more flexible workforce that will allow them to respond quickly to fluctuations in the workload.
- *Impact on employees.* Employees and/or unions may object to the change. Even though they would remain government employees, the employees and the unions that represent them may object to any change.
- *Need for precise projection of revenue and expenses.* Setting the break-even prices requires precise projection of revenue and expenses. Although this would be a difficult task for any organization, it is especially difficult for the DWCF activities because they must set their rates more than a year ahead of time so that customers can plan their next year's budget. Organizations in transition to DWCF would find this task very difficult.
- *Changes in accounting system.* The organization must have a cost accounting system that can collect and identify costs to its products. This fundamental requirement for business operations is often lacking in government activities.
- *Impact of governmental policies.* Although DWCF aims to operate like a business, its activities must follow government management, personnel, and procurement policies and regulations

that may limit their flexibility. In addition, government policy-makers often make decisions that are not based solely on economics.

Case study: NSWC, Carderock Division

The Naval Surface Warfare Center (NSWC) is one of the Navy's five WCF research and development activities. NSWC was established in 1992¹⁷ to provide research, development, test, evaluation, engineering, and fleet support for systems associated with surface warfare. NSWC has six operating divisions, one of which is Carderock. Each division performs different missions and maintains a separate accounting system.

The Carderock Division has major operating sites at Carderock, Maryland, and Philadelphia, Pennsylvania, and several smaller sites scattered across the United States. The Carderock site is largely geared toward research and development (R&D), whereas the Philadelphia site is oriented more to engineering support.

The Carderock Division's revenue was about \$600 million in FY 2000, and all but about \$20 million was from government work.

The Carderock Division has a relatively stable customer base and workload. Its major customers are the Naval Sea Systems Command, the Navy Fleet, and the Office of Naval Research. Although Carderock is an R&D subactivity, the funding from the budget categories 6.1 (Basic Research) and 6.2 (Applied Research) were only about \$6 million and \$30 million, respectively. Carderock also receives funding (through its customers) from the other Science and Technology (S&T) budget categories¹⁸ and other appropriations, such as Operations and Maintenance and Shipbuilding and Conversion.

17. Many of its components had been operational long before that time.

18. The other S&T budget categories are: Advanced Technology Development, Demonstration and Validation; Engineering and Manufacturing Development; and Operational Systems Development. However, these are considered less "pure" research.

Carderock's overall composite hourly rate for FY 2000 was \$76: \$45 for direct labor, \$9 for indirect overhead, \$22 for general and administrative (G&A) overhead, and a small amount to adjust for the prior year gain. The actual rate a customer pays is dependent on the specific job. Each job is tracked by a job order number. Some jobs are charged a unit cost rather than the labor composite rate. The unit cost is based on the usage of the Service Cost Center that includes test facilities, calibration, and computers; however, these jobs represent a very small portion (less than 5 percent) of the total work. Jobs that are small, but recurring, are bundled in a contracting package in order to reduce the administrative costs.

Assessment

A defense working capital fund structure would be a significant improvement over the existing AFIP structure, particularly for the consultation and education product areas. Because the full costs of consultation and education provided to the civilian pathology community *outside of DoD* are not recovered, each DoD dollar spent on these activities is considered a subsidy to the outside community—because they receive the services at no charge. A working capital fund—with appropriate charge-back rates—would correct this cross-subsidy between DoD and the civilian pathology community by ensuring that customers were charged for the full costs of the products received. Further, by eliminating the subsidy and increasing prices to their appropriate levels, artificial demand for services would be eliminated. Through the implementation of correct charge-back rates, the civilian community will control demand for secondary consultations, and incur the true costs of training and educating the non-DoD pathology workforce.

Within the DoD community, a working capital fund would provide AFIP with an accurate understanding of their true costs of providing education and secondary consultation services and would give AFIP management an incentive to control costs and promote innovation. With unsubsidized rates in place, AFIP would be fully competing with other institutes, thereby promoting further efficiencies in the delivery of products.

The OAFME work and the research conducted by AFIP can also be provided under a working capital fund regime. These functions will need greater oversight because as the sole provider of these functions, AFIP would act as a monopoly and thus would have less incentive to improve efficiency or satisfy its customers.

Some of the other functions provided by AFIP that do not have identifiable customers include the museum and the National Tissue Repository. Because these activities are provided in support of the general public and the greater pathology community, it is difficult to identify a specific organization or entity that should incur the full costs of these services. Therefore, under a working capital structure, these activities would continue to be funded through direct appropriation.

A defense working capital fund, however, is limited in that large capital improvements must continue to be funded through direct appropriation, and financial planning horizons are fixed at 12 months. Therefore, efficiency gains that could be realized through out-year planning are limited, and the DWCF agency is subject to direct funding constraints for capital improvements regardless of the gains that could be achieved from the expenditure.

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Executive agency

In this section, we describe the use of an executive agency to provide commercial goods and services within government departments. This concept, which was pioneered by the British and later adopted by Australia and other countries, requires certain government organizations to operate as though they were private businesses. The executive agency, like working capital funds, is more governmental in its approach and offers the opportunity to make a phased transition to eventual privatization.

Our examination of the executive agency alternative draws on interviews with officials from the British Forensic Science Service (FSS), the Cabinet Office, and the National Audit Office. We also reviewed studies, reports, and other documents on the operation of FSS.

Concept

Starting in the mid 1980s, government officials in the United Kingdom (UK) identified service-providing or commercial functions within its government departments and reorganized them into “executive agencies.” These agencies, although they remained government organizations and were staffed by government employees, were required to operate as if they were the private sector.

The executive agencies became self-funding by charging fees for the services that they performed. Each agency adopted an accrual-based accounting system, and each had a charter that established the framework in which it was expected to operate. The framework included a performance contract between the agency and its parent department that defined the agency’s performance goals and gave the agency greater discretion over spending and human resources management. The heads of these agencies, or chief executive officers (CEOs), also had performance contracts with the parent department. The agencies were expected to compete with private markets when providing

their services to other government departments or organizations. In many cases, the agencies also competed for private sector business. They relinquished whatever monopoly they had on the services they provided to the government. In Australia, a similar initiative was labeled commercialization.

Frequently, establishing a government organization as an executive agency was the first step to eventual privatization. A typical path includes giving the agency "trading fund status" and then privatization. Conferring trading fund status means that the agency can borrow funds from its parent department on a long-term basis in order to make needed capital expenditures. The agency can also carry over funds from year to year. In the UK, independent reviews are conducted every 5 years to assess the success of the agency and to determine whether it is ready for trading fund status and/or privatization. The Australian government conducts similar reviews, but not necessarily at 5-year intervals.

Transition

In general, the transition to executive agency does not take place until an accrual accounting system, charging algorithms, and performance goals are in place. Typically, once the decision is made to establish an executive agency, a team composed of the representatives from the parent department, the old service organization, and other experts is assembled to implement the decision. The completion date can be tailored to each individual case. In the United States, the decision to establish an executive agency or its equivalent may require legislation, especially if the organization is to have trading fund status.

Pros and cons

Pros

The executive agency has the following advantages:

- *Self-sufficiency.* The organization will grow or shrink based on its ability to be competitive and generate sufficient revenue to cover its expenses.
- *Cost visibility.* The organization and its parent department will know what it costs to provide the needed service and its relative value to their customers.
- *Performance goals.* The organization will be able to identify, perhaps for the first time, what specific services or products it provides; how much of the service it provides; and the quality of what it provides. It can also identify who its customers are and their relative importance to the organization.
- *Impact on employees.* This alternative offers low risk to the employees. Because they remain government employees, there is less disruption to the workforce than there would be if the work was contracted out or privatized. However, there may be some disruption to employees during the transition to the new organizational structure, and overall staffing will increase or decrease as a direct result of how successful the new organization is at attracting business.
- *Impact on the parent department.* There is low risk to the parent department. Again, because the organization remains a governmental one, the parent department retains overall control of the organization. The parent department can reserve the ability to revert the new organization to its initial status if the new structure doesn't work out.
- *Other organizational structures are not precluded.* The decision to establish an executive agency can be the first step to eventual privatization if future circumstances warrant.
- *Reputation.* If the organization has a reputation for providing quality service, it will retain that reputation because the name of the organization and the people on its staff will remain the same.

Cons

Drawbacks to the executive agency include the following:

- *Legislation.* If the parent department lacks the authority to use accrual accounting or remove any monopoly status, legislation may be needed to provide it. Legislation may also be necessary if the parent department wants to provide increased flexibility in personnel and procurement or wishes to confer the equivalent of trading fund status.
- *Time required.* The transition to a successfully operating executive agency may take several years.
- *Impact on employees.* Even though they would remain government employees, the employees and their unions may object to the change.
- *Cost recovery.* The organization may be performing some functions that are considered to be a “public good” or inherently governmental, and it may not be possible to recover the full cost of performing these functions. If this is the case, it may be best to strip these functions from the executive agency or fund them through direct appropriations.

Case study: the British Forensic Science Service

The British Forensic Science Service provides an interesting case study on the evolution of government agencies toward privatization. For many years, forensic science in England and Wales was managed and funded by local police forces. Over the past 15 years, the forensic science organization has been transformed from locally funded laboratories to a centralized Forensic Science Service (FSS), an executive agency with “trading fund” status.

The transition of FSS to an executive agency took over 10 years to complete and was done in stages. Because each stage was distinct, an inspection of the results at each milestone provides insight on the pros and cons of each initiative as FSS moved toward trading fund status. In the following section, we provide a history of FSS and discuss the impact of each initiative and the lessons learned along the way.

Understanding FSS

The original mission of forensic scientists in the United Kingdom (UK) was to support the government and police through the collection and analysis of forensic evidence. Their customers include the 43 police forces in England and Wales, and a few private and international customers. Their mission is to help the police solve crimes by analyzing evidence collected at crime scenes and providing expert testimony in court. With the advent of DNA analysis in crime solving and the creation of a national DNA database in the UK, the demand for forensic scientists who can collect forensic evidence has increased dramatically. In the past 10 years, FSS has grown from a \$23-million agency to a \$117-million agency with about 2,000 employees. Increases in demand for services are expected to continue with 20-percent annual growth expected for the next 2 years. Currently, FSS has an 80-percent market share and has two major competitors.

Because it has grown so fast, FSS has had problems that include huge backlogs, high costs, the inability to replace assets in a timely manner, and low customer satisfaction. To address these issues, senior management at FSS and within the British government have instituted best business practices. They have also injected competition in order to shape the agency to meet the needs of the police in a cost-effective and efficient manner. Last year, as a result of these efforts, the Forensic Science Service obtained trading fund status.

Work of FSS

FSS provides forensic science work that includes DNA profiling, fiber comparison, fingerprint enhancement, and drug identification. Figure 7 shows their 1999–2000 sales figures.

By business area, the largest percentage of FSS's work supports the solving of violent crime, followed by volume crime (nonviolent property crime such as burglary and car theft) and specialist services that include the management of the national DNA database. Figure 8 shows sales by business area for 1999–2000.

Today, 1,900 people work for FSS—200 to 300 are in the area of technical expertise and support, 700 are involved with DNA testing and

Figure 10. 1999–2000 FSS sales by type of work

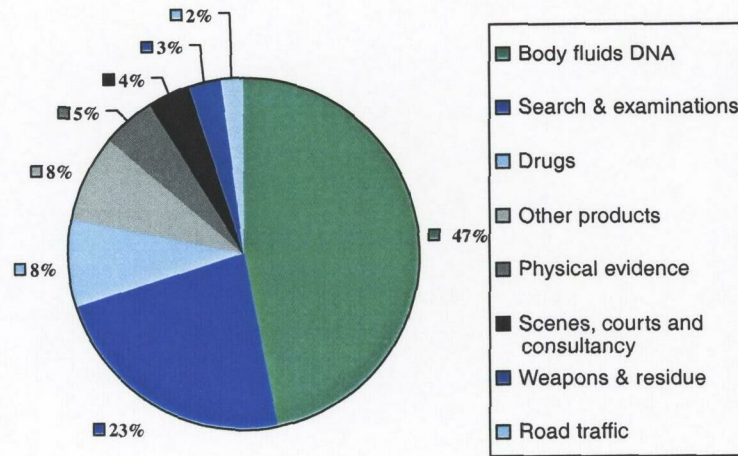
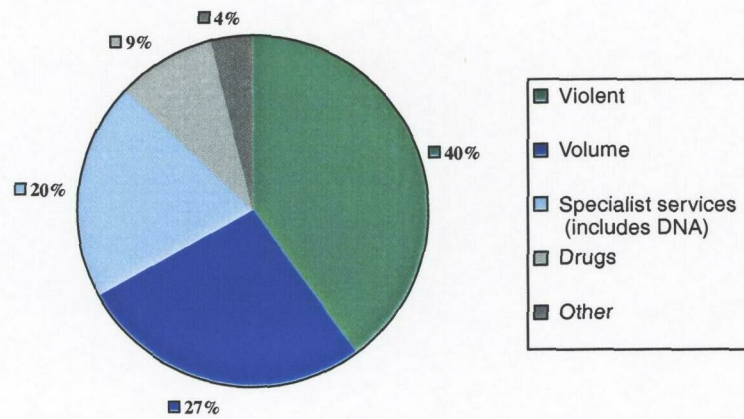


Figure 11. 1999–2000 FSS sales by type of crime or business area



the DNA database, 200 are in overhead activities, and the remainder are involved with reporting.

History of FSS

The 1970s—Forensic labs as part of the local police force

As forensic science became an integral part of crime solving, each police force in the UK developed and funded its own forensic lab. By the late 1970s, each police force had a forensic lab that was funded as part of the budget of each local force.

Pro

- Local labs allowed each police force to have total control over the size and staffing of its own forensic science workforce.

Con

- Having forensic science labs as part of the police force was fraught with problems. From a financial perspective, as long as forensic labs were part of a local budget, there was no incentive to share excess capacity with other forces when the need arose. From an organizational perspective, the fact that forensic scientists worked for the police sometimes led to accusations that their work was not totally objective.

The early 1980s—Regional forensic labs

In the early 1980s, the regional forensic labs were created, each with its own “budget center.” This meant that the labs were no longer dependent on funding from each local police force. However, they were still funded as part of the aggregate police appropriation.

Pros

- Regionalization helped smooth variations in demand for services across local police forces. Because forensic scientists were no longer “owned” by a local police force, they could help meet demand for forensic services, regardless of location.
- The labs were viewed as providing more objective analysis because they were removed from the direction of a local police force.

Cons

- Under regionalization, FSS had its own budget, separate from each of the 43 police forces. However, as long as FSS continued to be funded by the police, charges of bias regarding analysis of forensic evidence would not be assuaged.
- Under regionalization, the police had no incentive to use FSS in a cost-effective manner. Because the total costs of providing services no longer came out of the local budgets, regionalization created a model in which services were provided free of charge to local police forces. As a result, budgets were drained, and many regional labs were forced to “close shop” at the end of the fiscal year because they had run out of money.
- Just as regionalization promoted the inefficient use of resources from FSS customers—the local police—it also fostered inefficiency within FSS. Under the regionalization model, FSS received a fixed budget at the start of the fiscal year and was no longer accountable to the local police for ensuring that services were provided in a timely and cost-effective manner. The result was a huge backlog.

The mid 1980s—Consolidation of FSS under the Home Office

In the mid 1980s, there were a number of court cases in which FSS was accused of presenting biased forensic evidence. In each of these cases, the perception was that the police had pressured the forensic scientist to bias the results of his analysis.

As the number of these cases increased, the relationship between FSS and the police came under intense public scrutiny. The public and the government saw FSS as unable to provide unbiased analysis as long as it remained “under the thumb” of the police. To give FSS more autonomy over its analysis, the FSS regional offices were consolidated under the Home Office. (This was similar to the creation of an executive agency in the United States.) Consolidation under the Home Office gave the FSS independence from the police force. It became a separate entity with the police as its largest client.

Pros

- Consolidation allowed FSS to conduct unbiased research and analysis in the public interest.

Cons

- Although FSS was now funded through the Home Office, it still received a direct appropriation and thus had little incentive to be cost-effective. The FSS was now the monopoly provider of forensic services in the UK. Without competition, the FSS had little incentive to control costs, and the problems with backlog and funding continued.

1991—Agency status

In the mid 1980s, the British government put forward the idea that agencies that provide services (rather than policy) are autonomous in nature and should thus be given more autonomous management responsibility. To test this theory, in 1991, FSS was granted agency status, which meant that it could charge for its services, would adopt an accrual accounting system, and would no longer be funded through direct appropriation. FSS was expected to act as though it was a private company, albeit as part of a government department.

The shift to agency status had little effect on FSS from an organizational perspective; FSS remained part of the Home Office and continued to be autonomous from the police. Financially, however, the movement to agency status had a significant effect on how FSS delivered products and services to its customers. Under agency status, FSS would no longer receive direct appropriations from the Home Office. Instead, it would fully recover its costs by charging the police for the products and services they received.

The movement to agency status included the following provisions:

- The development of charge-back rates or fees-for-services for products and services provided by FSS
- The transition and redesign of current accounting systems
- A one-time direct appropriation from the Home Office to FSS to provide working capital

- A transfer to the police of the funds previously allocated to FSS so that the police could afford to buy services.

Under a charge-back regime, the FSS must function as a business, recovering its total costs through revenue generation rather than direct appropriation. This shift thus held significant risk for FSS. By requiring the police to pay for services, a market for forensic services was created. This meant that the police could buy forensic services from the private sector or FSS, and if they chose the private sector, FSS might not be able to recover its costs.¹⁹

Charge-back systems, however, promote efficiency and accountability of costs from both customers and service providers. The agency status gave the police an incentive to evaluate their demand for forensic services and temper their requests for frivolous analyses. From the FSS perspective, agency status gave it more control over how to best meet the needs of the police force and gave it an incentive to control costs and provide quality products.

As often happens in a major transition, there were some problems:

- The executive-level staff at the FSS were scientists with little or no experience in implementing charge-back systems. They needed a management team that understood how the private sector worked and how to compete. Therefore, FSS brought in people from the private sector to join the management team and guide the process.
- Many of the key senior scientists left to start up their own companies to compete with FSS.
- The original rate structure was not designed to promote cost recognition and control. It was a simple calculation of the total annual costs of FSS, divided by the annual number of items submitted for analysis. This pricing structure had no direct tie

19. As part of the transition, the Home Office required the police to “buy” forensic services from only the FSS for a predetermined time period (one to two years). This gave FSS some transition time to implement cost savings initiatives and work out any problems with its rate structure before having to compete with the private sector.

to level of effort. However, it was a first step in establishing a process for accounting and invoicing, and it did force customers to pay for services and evaluate costs.

- Although the police force was required to use only FSS for the first one to two years, there was no requirement as to how much forensic work the police had to purchase. Therefore, in the first year after FSS moved to agency status, demand for services dropped as the police went through their own transition to “paying customers” and learned to budget and identify their demand for forensic services.
- The FSS had a difficult time managing cash flows over the first few years. Given its large backlog of work, the FSS could increase workload at the end of the fiscal year if revenue shortfalls became apparent. This caused serious problems for the police because they were not expecting a sharp increase in their bills at the end of the fiscal year.

After the transition, FSS began to identify a number of problems with the current rate structure. Although the structure was designed to recover the full costs of operations (labor, overhead, subcontracts, materials, and depreciation of assets), its design was too simple. Customers were charged a flat rate per item submitted for analysis. Although this does provide a meaningful price to the customer (and is tied to a final product), the structure was too general and created cross-subsidization between products. What began to happen was that the police would submit items to FSS requiring more complicated—and therefore more expensive—analysis and would conduct simple analysis either in-house or through the private sector. It became more and more difficult for FSS to recover its full costs.

Pro

- The move to agency status gave FSS the incentive to become accountable for its costs and to ensure good quality and customer satisfaction. The move also gave the police an incentive to be good stewards of government resources. Having the police pay for the products and services they receive establishes a model that makes them responsible for the full cost of their

own operations, including what they pay for forensic evidence analysis.

Con

- The rate structure was poorly designed, and this led to less visibility over costs and an inaccurate forecast of the demand for resources.

1995—Product-based pricing and performance measurement

In 1995, FSS redesigned its pricing structure using a product-based service approach. Management at the FSS began to look at the activities conducted within FSS and how these activities are developed into final products. Management also evaluated its overhead and developed four or five categories for allocating overhead in a meaningful way to each product area. Using this activity-based costing (ABC) approach, final products were identified and priced according to the total costs that went into the production of that specific good or service.

The new rate structure was significantly more detailed than the 1991 cost-per-item-submitted model and included a capital charge of 6 percent to help FSS meet the costs of asset replacement. To ease the problems of implementation, however, the FSS set up a liaison group between the Home Office, FSS management, and the police. This helped move the implementation process forward with few transition problems.

The new product-based pricing strategy had a major impact on the forensic scientists within the FSS. With full cost visibility, scientists were required to charge their time to projects and to meet performance targets. Senior management had performance-based contracts that required them to meet certain annual goals. The agency as a whole had performance goals that the Home Office monitored. Although this was a significant cultural shift for the personnel, performance targets and measures provided incentives to increase personnel productivity, thereby decreasing unit costs. Performance measures and standards allowed FSS management to pinpoint problem areas by comparing measures at different forensic labs, and

by tracking costs, quality, and customer satisfaction within the organization.

Pro

- The product-based pricing structure gave both FSS and the police force visibility regarding the value of the products and services provided by FSS. Because the police were now charged appropriately for the level of effort associated with each type of product, demand began to shift for certain products. For example, the demand for forensic scientists at crime scenes began to steadily increase as the police realized the importance and cost-effectiveness of having forensic expertise when evidence was being collected.
- The new product-based rate structure gave the FSS a clear picture of the total costs required to deliver each specific product. The accurate pricing corrected the cross-subsidization between products and eliminated the artificial demand for complicated analysis from the police. The new pricing structure also allowed the FSS some flexibility in pricing so it could effectively compete with the private sector.
- The performance measures and targets increased the cost-effectiveness of FSS personnel.

Con

- The main problem with agency status was that FSS was required to recover its costs and plan for asset replacement one year at a time. It could not retain earnings past the end of the fiscal year, which meant it could not effectively plan for the replacement of assets. Also, the current rate structure had to be modified annually, depending on whether there had been revenue shortfalls or over-recovery of costs in the previous year. As rates were changed, the organization did not accurately forecast the impact on demand. Therefore, a cycle of profits and losses ensued throughout the 1990s.
- The other problem with the rate structure was how to recover the costs of pure research (unrelated to a specific crime or case) that advances the field of forensic science. Ten percent of

the FSS's budget supports forensic research. Forensic research costs are recovered through overhead rates that are incorporated into the FSS's prices. Although pure research furthers the field of forensic science, it does not directly support the specific products or services provided to FSS customers.

Forensic research should be viewed as a public good because it benefits the police, the forensic industry, and the entire population of the UK, whether or not anyone or everyone is willing or required to pay for it. Requiring the police to pay for this public good (through higher overhead rates passed on to higher product prices) places an undue burden on the police and artificially inflates prices for FSS's forensic products. To keep FSS competitive with the private sector, forensic research should be funded separately through direct appropriation.

1999—Trading fund status

In 1999, FSS was granted trading fund status, which released it from the Home Office cash-funding regime. Although the FSS will continue to generate funding in the same way—through charge-backs to the police and a few other customers—trading fund status will allow it to operate as a working capital fund and more efficiently manage their operations. Under trading fund status, the FSS can retain earnings, plan for out-year asset replacement, and secure long-term debt for capital expenditures. Trading fund status allows FSS to operate as a quasi-business with control over long-term planning and gives it the flexibility to make management decisions that are cost-effective in the long run.

From the customer and employee perspective, the movement to trading fund status was seamless, and there was little impact on the day-to-day operations of the organization or on pricing and revenue-collection activities.

Trading fund status began with the \$40-million long-term loan from the Home Office for new construction to be repaid over a 25-year period. As part of the trading fund status, the FSS is required to pay a dividend on share capital; the government expects an 8-percent return. The dividend has not yet been paid because the transfer to

trading fund status has not been finalized. The transition to trading fund status may warrant a re-evaluation of current charge-back rates because FSS must now secure insurance (trading funds are not covered by “Crown Immunity”) and recover the costs of debt financing.

Pro

- Trading fund status gives FSS more control over the economic health of its organization by allowing it more freedom to manage its own operations. Under trading fund status, FSS has the ability to better compete with the private sector, plan for changes in market conditions, and ensure timely asset replacement. Further, because trading fund status does not affect the current charge-back system, all the new incentives for customers and service providers to make wise use of government assets will continue.

Con

- With trading fund status, FSS operates as a quasi-business, with all the benefits—and all the risks—of failure. If FSS does not recover full costs, it cannot depend on the Home Office to bail it out. There are two major obstacles that may keep FSS from successfully competing with the private sector:
 - FSS is required to follow Home Office procurement and personnel requirements. This gives the private sector an advantage because it has more flexibility in hiring and firing to meet demand and can more efficiently procure goods and services. Also, private companies are luring forensic scientists away from the government with offers of higher pay.
 - FSS is still required to fund forensic research through charge-back rates to customers. This artificially inflates rates and gives the private sector a competitive advantage.

Assessment

An executive agency with trading fund status incorporates all of the positive elements of a defense working capital fund while eliminating the dependence on appropriated funds for capital expenditures. Further, it promotes efficiencies than cannot be realized under a working capital fund because financial planning can be conducted beyond a one-year time horizon. This type of structure would give AFIP tremendous autonomy to effectively and efficiently provide services to its customers. However, this structure is not without risk. AFIP can incur losses and lose market share if it does not provide a product at the cost and level of quality the market demands.

For AFIP, the movement to an executive agency/trading fund would incorporate competition into AFIP's core businesses (consultation and education) thereby promoting efficiency and quality in these areas. Through the development of accurate and appropriate charge-back rates and performance measures, AFIP would gain a greater understanding of the *true* market demand for these services.

If it adopted the executive agency/trading fund structure, AFIP would no longer have to depend on DoD for MILCON or other direct capital improvement funding. Under this structure, AFIP could replace capital assets and recover capital costs and the cost of debt servicing through its charge-back rates to customers if it were cost-effective to do so. However, because the move to an executive agency/trading fund structure could provide insight into other methods for costs savings and decrease artificial demand for services, it could change the infrastructure requirements of AFIP.

Four additional alternative organizational structures

In addition to DWCF and an executive agency, we looked at four other options for reorganizing AFIP.²⁰ These four come closer to full privatization and offer a chance for AFIP to use modern business practices, streamline its organization, improve quality, and become more responsive to its customers. They are:

- Federal government corporation
- Public-private partnership
- Employee stock ownership
- Asset sale.

Federal government corporation

According to the RAND paper on alternative organizations, there is no clear legal definition of a government corporation, and the many government corporations in existence today vary considerably with respect to their structure and control. In general, however, to be established as a government corporation, an organization must:

- Have a predominantly business nature
- Produce revenue and be potentially self-sustaining
- Engage in many business-type transactions with the public

20. For ease of discussion, we have used the definitions contained in the GAO pamphlet on privatization terms, and the RAND booklet on organizational forms, *A Casebook of Alternative Governance Structures and Organizational Forms*.

- Require greater flexibility than is permitted under governmental rules
- Provide goods of a national importance that are not adequately provided by the private sector.

A government corporation is established as a self-sustaining commercial operation to provide goods and services to the government and public. It can be established either as a profit or a nonprofit company. The company is established by the government but may be considered as either a government or a private. For example, the U.S. Postal Service is considered to be a government entity, whereas the U.S. Enrichment Corporation is considered to be private. Similarly, the staffing may either be governmental or private. The organization is usually funded by the sale of its services; however, as in the case of AMTRAK, the government may need to provide a subsidy in the form of direct appropriations.

Transition issues

Legislation is required to create a government corporation, and this may take several years to accomplish. Congress and the Office of Management and Budget (OMB) have indicated that they do not want to increase the number of government corporations because of the potential lack of accountability and because government corporations are off budget and represent a potential unfunded liability. Moreover, there is a feeling that if the organization is a suitable candidate to become a corporation, it should be privatized rather than remain as part of government.

Private financial advisers and law firms are frequently hired to develop the corporation's structure, value assets, and draft enabling legislation. The up-front costs for these services can be substantial.

The impact on employees is often minimized if they are retained as government employees or if the legislation provides employment, salary, and benefit guarantees. Customers are generally free to choose between the new corporation and other governmental and private providers. If this is the case, the transition to a government corporation would have minimal impact on customers. If, on the other hand,

the government corporation is a monopoly provider, the impact on customers depends on the ease and speed of the transition, whether the corporation raises the rates it charges its customers, and whether it meets its customers' needs.

Assessment

Although it incorporates most of the best business practices described earlier, a government corporation takes a long time to set up and is expensive. The other alternatives described in this report offer the same advantages and may be easier to implement.

This structure does have one distinct advantage, however, in that it does not preclude other organizational structures. As we see in the case study below, the decision to establish a government corporation can be the first step to eventual privatization if future circumstances warrant.

Case study: U.S. Enrichment Corporation

In 1992, Congress passed the Energy Policy Act designed to restructure the uranium enrichment program at the Department of Energy (DoE). The act created the United States Enrichment Corporation (USEC), a wholly owned government corporation, as a first step to the eventual privatization of DoE's enrichment program. The program operated two uranium enrichment plants that had been providing enrichment services to the commercial reactor industry worldwide since in 1960s. By the 1980s, several overseas competitors had sprung up, and the need for weapons grade uranium had declined.

Under the act, DoE leased the two plants to USEC and granted the corporation the exclusive right to develop the new Atomic Vapor Laser Isotope Separation (AVILIS) technology. All intellectual and property rights were also transferred to USEC. In 1994, after the first full year of operation, USEC reported \$1.4 billion in gross revenues with a net income of about \$377 million. At that time, USEC had about 88 percent of the U.S. market and 40 percent of the overseas market. In 1995, a full privatization plan was submitted to the President. The plan provided two options—a merger or acquisition

arrangement and an initial public offering (IPO) that would allow USEC stock to be sold directly to the public. In both cases, the U.S. government retained responsibility for most of the liabilities associated with operations and for environmental issues arising from the leases for the facilities. It also helped the corporation secure favorable electricity rates, and resolved difficulties relating to the transfer of highly enriched uranium from Russian warheads to the international market as low enriched uranium.

In June 1998, the IPO option was selected, and the USEC stock went on sale on the New York Stock Exchange. In July 1998, \$1.9 billion was transferred to the Treasury for the redemption of government ownership of USEC. If there had been windfall profits from the new private corporation, the final IPO contained a provision that allowed the government and taxpayers to be beneficiaries.

In this case, privatization made sense because of three factors:

- The plants were already engaged in commercial work and had established a market presence.
- The government was willing to structure the deal in such a way that outside investors could see an opportunity for growth with limited liability.
- Senior administrators were committed to commercializing the operation in the best way to extract maximum value for the government and taxpayers.

The corporation's revenues have fallen because of a decreased demand for enriched uranium. To adjust, the corporation is revamping its cost structure by closing plants.

Public-private partnerships

State and local governments have long used public private partnerships (PPPs) to secure funding for infrastructure projects, community facilities, and related services. According to the *Public Private Partnerships: A Guide for Local Governments*,²¹ partnerships are characterized by the sharing of investment, risk, responsibility, and reward between the partners. The reasons for establishing such partnerships

vary, but they generally involve the financing, design, construction, operation, and maintenance of public infrastructure and services.

The most effective types of PPPs do not prescribe the actual method for securing financing for a project. Instead of submitting a request for proposals (RFP) that would prescribe the eventual financing alternative (for example, a lease-back, lease-develop-operate, or build-transfer-operate), the government submits a request for qualifications (RFQ). An RFQ allows the government to identify the partner with the best record for creating value and the greatest chance of determining how best to meet the government's needs. The final partnership contract, however, is not an award to begin construction or renovation; it is an agreement that the contractor and the government will work together to identify the best way to meet the desired outcome (e.g., an alternative financing arrangement to fund infrastructure). Only if the ideas put forward by the contractor are acceptable will the government award the contract for construction. Under this model, the contractor is not constrained by a prescriptive contract that outlines how to meet the government's goals; instead, incentives are created to find the most efficient and effective alternatives.

The underlying logic for establishing PPPs is that both the public and the private sectors have unique characteristics and expertise that provide them with advantages in specific aspects of service or project delivery. Private partnering gives the government manager access to expertise and knowledge of the market place and the ability to implement a decision once it is made. The most successful partnership arrangements draw on the strengths of both the public and private sectors.

The roles and responsibilities of the public and private sector partners may differ with each contract, but those of the government do not change. Public private partnership is one of several ways of delivering public infrastructure and related services. It is not a substitute for strong and effective governance and decision-making by govern-

21. Published by the British Columbia Ministry of Foreign Affairs, May 1999.

ment. It is up to the government manager to ensure that the delivery of services and projects is conducted in a manner that protects and furthers the public interest.

Transition issues

The transition to a PPP has little impact on staff or customers until alternatives are implemented. Transition problems will vary depending on the alternative that is adopted. For example, if new construction is provided under a lease-operate-purchase arrangement, there is little impact on current operations because the private partner designs, finances, and builds a new facility which is then leased to the local government for a specified period. After that time, ownership vests with the government. It is only after the transfer back to the government that transition issues related to operations will ensue.

Although the original PPP contract does not require legislation, legislation may be required for the alternatives brought forward by the private sector partner, particularly in the area of commercialization of government assets or purchases. Legislation may take several years to accomplish.

Assessment

A PPP is a unique alternative for AFIP because it can directly address AFIP's desire to obtain real estate. A PPP should be an attractive model for AFIP because it provides AFIP with a method of identifying "outside-the-box" financing alternatives for its construction projects. The case study below gives an example of how that might be done.

Case study: National Institutes of Health, clinical center

In the early 1990s, the National Institutes of Health (NIH) began to study alternatives for financing a clinical center that would have 250 beds for inpatient and outpatient care, outpatient facilities, and research laboratories, and would allow physicians and patients to participate in cutting-edge research and scientific advances. The new center would connect to the current facility, which opened its doors to patients in 1953.

NIH had a number of design considerations. It wanted laboratory and patient-care wings that would easily accommodate day-to-day changes in use, and it asked that building systems be housed in areas that could accommodate growth and change. The facility was to be a focal point on the NIH campus that would offer a healing environment for patients and opportunities for interaction among scientists. The estimated cost of the clinical center was roughly \$370 million, and the goal was to complete it by 2002.

The NIH first tried to get direct appropriations to fund the construction of the clinical center but was turned down. It then turned to the private sector to determine whether alternative financing arrangements could be made. The NIH issued an RFQ in the hope of securing a private sector partner with the best record for creating value for similar projects. Eventually, the NIH contracted with Boston Property, a preeminent development company.

Boston Property brought in architectural/engineering firms, consultants, and lawyers to determine the best way for the NIH to finance the construction. Under the contract, Boston Property was not paid to do this research, rather if it came up with ideas that were acceptable to NIH, it could exercise its right to negotiate with the government to develop the clinical center.

Boston Property determined that by commercializing some of its assets, NIH could create enough cash flow to fund construction of the clinical center without incurring debt. Boston Property identified many ways of raising revenue. Three ideas that held particular promise involved parking, the metro, and restaurants:

- Parking—There are about 25,000 people who work for the NIH plus thousands of patients and guests who visit the NIH campus in Bethesda on a daily basis. Parking for that many people has always been a huge problem. Boston Property recommended that NIH charge for parking. This would provide the NIH with about \$4 million in annual revenue and would mitigate some of the overcrowding.
- Metro—The NIH metro stop is located on the edge of the NIH campus. A large part of the NIH work force travels to work on

the metro and then walks to their offices or labs. Boston property determined that NIH could create a funding stream by allowing commercial development in the metro area.

- **Restaurants**—Boston Property analyzed the traffic flow across the NIH campus and realized that the lack of restaurants on the campus (there is just one cafeteria) was causing noon-time traffic jams in and out of the campus and was affecting worker productivity. Boston Property recommended renting space to restaurants, which would provide cash flow to NIH and increase workforce productivity.

Overall, the PPP between the NIH and Boston Property created a relationship that offered incentives to both the government and the private sector. The private sector evaluated the government assets from a market-driven perspective and determined how best to arrange assets and enterprises to meet the government's needs. In this case, Boston Property worked with the government to tailor a solution to optimize cash flow.

Although direct funding was eventually secured to fund the clinical center, NIH implemented many of the initiatives developed by Boston Property. Boston Property remains as the developer of the clinical center today.

Employee Stock Ownership Plans (ESOPs)

An ESOP is a way to fully privatize a government function by allowing the government employees who are performing the function to form a private company and take over the function as private contractors. The government employees become employees of the newly formed firm and receive salaries and benefits, as well as dividends or a share of the profits. Frequently, the government awards the firm a sole-source contract for a transition period (3 to 5 years) to allow the firm to gain the skills it needs to compete in the market place. After the transition period, the firm is expected to compete with other private sector providers for the government's business.

Each ESOP is tailored to the unique characteristics of the organization or function being considered. An ESOP candidate has several

strategies from which to choose. The organization can become a stand-alone private company; enter into a joint-venture with a private company; form a strategic partnership with an ESOP company; form a strategic partnership with a public nonprofit corporation; or form a strategic partnership with a public for-profit company. Which strategy is chosen depends on the level of demand for the organization's products or services, the level of shelter the organization needs before it can be profitable, and the level of competition in the market place.

The most attractive candidates for an ESOP are large organizations that perform functions that are in high demand both by the government and the private sector. A growing market allows the firm to build its business base so that it is not totally dependent on its initial government contract. Organizations with unique products that are in high demand and have a growing market are the best candidates to become stand-alone private companies. If the market is not growing or if the organization lacks essential business skills, one of the other strategies will be more appropriate.

Transition issues

The government must decide to "get out of the business" and spin the business out to form a profit or nonprofit company. No legislation is necessary. The steps necessary to establish an ESOP, such as pre-feasibility assessment, feasibility analysis, business plan development, and contract negotiations typically take about a year. There are up-front administrative costs when establishing an ESOP. Even a mid-sized ESOP can cost \$50,000 in initial legal, accounting, actuarial, and appraisal fees. Annual administrative costs are likely to be over \$10,000 per year. ESOPs minimize the adverse impact on government employees. Employees generally receive salary and benefits comparable to those they received from the government as well as shares in the corporation. If the ESOP strategy of forming a partnership with a public nonprofit is chosen, military personnel can be detailed to the company under an Intergovernmental Personnel Agreement (IPA) type arrangement.

Assessment

AFIP has sufficient personnel to be a viable ESOP, and there are private sector counterparts that provide the same or similar services. For those AFIP employees who are near retirement age, an ESOP could be attractive because they could receive retirement benefits and also obtain jobs with the new firm. However, because only a small portion of AFIP's costs are currently recovered on a fee-for-service basis, it is unclear whether all the organization's costs could be recovered if it were to become a new ESOP company. The market demand for AFIP's services is also unclear. As a consequence, forming a new ESOP company could be risky. A safer strategy would be to either move AFIP to a working capital basis before considering an ESOP, or to form a strategic partnership with a nonprofit company that could shelter the organization until it was financially viable. The transition from direct appropriation funding to working capital fund to an ESOP or other privatization solution could take at least 5 years. The transition from direct funding to a strategic partnership with a nonprofit company would take roughly one year. An additional benefit of partnering with a public nonprofit would be that military personnel could be detailed to the nonprofit.

The following case studies provide two examples of government organizations that successfully made the transition to ESOPS.

Case study: U.S. Investigations Services, Inc.

The Office of Personnel Management (OPM) wished to downsize and focus on its core mission. As one of the many reforms undertaken, OPM decided to stop conducting investigations in-house. OPM presented its investigations unit, which conducted government background investigations, with several options, one of which was to form an ESOP that would perform the same services but in the private sector. The employees chose this option, and the U.S. Investigations Services, Inc. (USIS) was created in 1996. OPM was supportive throughout the transition and bore the costs associated with the feasibility analysis and the subsequent implementation of the plan. It also awarded the new company a 3-year contract to conduct investigations for OPM. Of the 706 employees who were offered jobs

with the new company, 681 accepted the offer. They received equivalent salaries and benefits, as well as ownership of 90 percent of the company through an ESOP. Four outside managers were brought in to head the company, and each made an investment which, together, made up the remaining 10 percent of the equity.

Today, USIS has about 2,000 employees and a stock value of \$250 million. Fifty of the employees who transferred to the company at its start up in 1996 received promotions within 6 months, and everyone received two cash bonuses. Last year, the Carlyle Group purchased 20 percent of the company for \$50 million.

Case study: U.S. Naval Superintendant of Shipyards Portsmouth (SSPORTS) Environmental Detachments (Charleston SC and Vallejo CA)

In 1996, as a result of BRAC 1994, the Naval Sea Systems Command (NAVSEA) established two teams, or detachments, of Navy employees to assist in the environmental cleanup of the closed shipyards at Charleston and Mare Island. One team was located in Charleston, South Carolina, and had 125 employees; the other was located in Vallejo, California, and had 225 employees. The detachments have executed work valued at more than \$150 million for more than 75 customers in more than 22 states. They have completed more than 218 projects, including cradle-to-grave management of over 9,500 tons of hazardous waste, and have performed BRAC inspections at more than 6,600 facilities.

These employees were hired on a term basis. The term was to expire in September 1999 when the remediation work was expected to be completed. However, the teams' reputation had grown beyond the Navy, and the demand for their services had increased. Those who wished to hire them included the Army Corps of Engineers, the General Services Administration, and the Coast Guard. As a consequence, NAVSEA used BRAC outplacement funds to hire an ESOP advisor to conduct a feasibility study to determine whether the teams could form an ESOP.

The advisor determined that, in order to expand, the teams would need private as well as government customers, and because there was a declining need for remediation services in the private sector, it would be risky for the teams to form a new private sector company. Instead, teams were advised to partner with an established successful firm(s) to mitigate the risk of a contracting market.

Two companies were selected to be strategic partners—Roy F. Weston Inc., a NASDAQ traded company, and the South Carolina Research Authority (SCRA), a public nonprofit company doing research and business development, and emergency response work for the state of South Carolina. SCRA partnered with the Charleston team, and Roy F. Weston Inc. partnered with the Vallejo team. The transition to the private sector took place in September 1999.

The Vallejo team, along with Roy F. Weston Inc. and several other contractors, was awarded a contract with the Navy to perform environmental remediation work. The Charleston team and SCRA lost their bid for the Navy contract. However, the team is working on the firm's other remedial work. For example, two of the Charleston team members are teaching at Clemson University under the agreement SCRA has with the University. Under the terms of the agreement with SCRA, the Charleston team will transition to the for-profit arm of the company once it has met certain performance criteria. The team will eventually be spun off as a separate employee-owned company, but it will stay within the relatively protected environment of the nonprofit company until it is ready to stand alone. This transition should take roughly two years.

Asset sale

An asset sale is the transfer of ownership of government assets, commercial-type enterprises, or functions to the private sector or to the public. In general, the government "gets out of the business." It has no role in the financial support, management, or oversight of the asset once it has been sold. However, if the asset is sold to a company in an industry with monopolistic characteristics, the government may regulate certain aspects of the business, such as utility rates.

In an asset sale, government employees who transfer with the sale become private sector employees. The corporation purchasing the assets may have both government and private customers.

Transition issues

Legislation is required for an asset sale, and this may take several years to accomplish. The legislation specifies the terms of the sale. The impact on employees can be minimized if the legislation provides employment, salary, and benefit guarantees. Customers are generally free to choose between the new corporation and other governmental and private providers. If this is the case, the sale of assets would have minimal impact on customers.

Private financial advisers and law firms are frequently hired to develop the corporation's structure, assess the value assets, and draft enabling legislation. The up-front costs for these services can be substantial.

Assessment

Ordinarily, an asset sale is a long complicated process, but because AFIP already has a partnership with ARP, a public nonprofit company, the process might be shortened. If DoD decides to pursue an asset sale of AFIP, it could sell or transfer its assets to ARP. Although a non-competitive sale is usually less desirable than a competitive one, it may be the better choice here because of the existing partnership. Other advantages are that military personnel could be assigned to ARP, and the sale could be structured as an ESOP, thereby protecting employee interests.

The following case study is an example of a successful asset sale.

Case study: Privatization of NAWC AD, Indianapolis

This example is not typical of most asset sales because DoD first transferred the organization to the city of Indianapolis at no cost. The city, in turn, sold the organization to Raytheon. We include it as a case study because it still illustrates an asset sale, albeit by a local government.

NAWC AD, Indianapolis was privatized in 1997 as an alternative to the 1995 BRAC decision to close it. Hughes Technical Services Company (which was later sold to Raytheon) took over the organization in January 1997. The privatization effort was completed in one year because it was felt that a lengthy transition period would result in the loss of customers or employees.

To avoid losing customers or employees during the transition period, the Navy guaranteed work over 5 years. The original contract guaranteed 912,000 labor hours in the first year of the contract. The number of guaranteed hours gradually decreased to 746,000 per year by the time the contract ended.

Raytheon has been increasing the share of non-Navy work. In FY 1993, about 95 percent of the NAWC AD, Indianapolis workload was from the Navy. By 1999, the Navy's share had decreased to 70 percent. Raytheon projects that by 2002 more than 40 percent of its workload will be from non-Navy sources.

The number of employees at NAWC AD had been decreasing after reaching about 3,500 in the late 1980s. The number was about 2,700 at the time of the 1995 BRAC announcement, and it was about 2,200 in December 1996 (just before the privatization). After the privatization in January 1997, Raytheon hired about 2,000 of the former NAWC AD employees. Most of the employees that Raytheon did not hire were performing overhead functions. In the summer of 1997, Raytheon laid off about 350 employees in an effort to match the workforce to the workload. Current staffing is roughly 1,500. The mix of personnel has stayed about the same as before the privatization—about 50 percent technical, 25 percent manufacturing, and 25 percent administrative.

The NAVAIR contract with Raytheon provided fixed composite labor rates that were 10 to 15 percent lower than the average NAWC AD rates prior to privatization. However, a contracting officer at NAVAIR suspected that most customers would not realize significant savings because some of the former overhead positions were converted to direct-billing positions, which meant that Raytheon was charging more hours at lower rates. Raytheon changed the cost accounting system used by NAWC AD in order to comply with the Cost Accounting Standards (CAS) required by the Federal Acquisition Regulation (FAR).

Comparison of alternative structures

We've examined a series of alternative organizations. Some are reimbursable government organizations that include defense working capital fund (DWCF) options or something equivalent to the British executive agency. Other options are closer to a fully privatized solution. These range from a federal corporation to an asset sale.

Any one of these options would involve substantial change from the existing structure of AFIP, and each would involve transition issues. In every case, there's a requirement for a solid cost accounting system that identifies costs associated with specific products. The organizations that we've examined all involve an increased level of competition for AFIP. It may be necessary to guarantee a certain level of work to ease the transition. For alternatives that don't use military or government civilian employees, there may be concerns about how to make that transition as easy as possible for those employees.

Most of these options could be better in the long run than the status quo, but the specific choices depend on the priorities of DoD decision-makers and how they answer the policy questions posited in the summary section of this paper.

In this section, we synthesize our analysis of the alternative structures and compare their relative strengths and weakness within the context of these questions. We will also provide some lessons learned from our research that should make implementation of the selected alternative more successful.

Summary of alternatives

Table 2 summarizes the key characteristics of each alternative structure that we examined in the previous sections. In this section, we will summarize how the alternatives rank when these characteristics are considered.

Cost visibility, performance goals, and competition

Three organizational principles—cost visibility, performance goals, and competition—are essential to any successful restructuring of AFIP. They act in concert to motivate efficient production and thereby lower costs. They also work to highlight quality issues that must be addressed to keep customers satisfied and to remain competitive.

Table 2. Summary comparison of alternatives

Principal	Status quo	WCF (mandatory sourcing)	WCF (non-mandatory sourcing)	Executive agency	Federal corporation	Public private partnership	ESOP	Asset sales
Cost visibility	no	yes	yes	yes	yes	yes	yes	yes
Performance goals	no	yes	yes	yes	Depends on how structured	yes	yes	yes
Competition		little	yes	yes	Depends on how structured	yes	Yes. May be sole source during transition	yes
Self-sufficiency	no	partial	partial	yes	yes	yes	yes	yes
Ease of transition	N/A							
Impact on civilian employees		Remain government employees. Little short-run change in number and mix	Remain government employees. Number and mix may change as become more businesslike	Remain government employees. Number and mix may change as become more businesslike	May become private employees, but salary and benefit levels depend on how structured	Depends on how structured	Become private employees but with shares in corporation; some employment guarantees	Become private employees, but salary and benefit levels depend on how structured
Impact on military assigned to AFIP	N/A	None. Could still be assigned to AFIP	None. Could still be assigned to AFIP	None. Could still be assigned to AFIP	Could still be assigned to AFIP if it is a governmental entity.	Depends on how structured	Military could be assigned to a public non-profit or profit or assigned to ARP	Military could be assigned to ARP as a public non-profit.
Impact on customers		Non-paying customers must pay for services; rates may change for paying customers	Non-paying customers must pay for services; rates may change for paying customers	Non-paying customers must pay for services; rates may change for paying customers	Non-paying customers must pay for services; rates may change for paying customers	Non-paying customers must pay for services; rates may change for paying customers	Non-paying customers must pay for services; rates may change for paying customers	Non-paying customers must pay for services; rates may change for paying customers

Table 2. Summary comparison of alternatives (continued)

Principal	Status quo	WCF (mandatory sourcing)	WCF (non-mandatory sourcing)	Executive agency	Federal corporation	Public private partnership	ESOP	Asset sales
Up-front costs legislation		Maybe none	Maybe none	May be required	yes required	yes May be required	yes none	yes yes
Transition time		Several years if cost accounting implemented first	Several years if cost accounting implemented first	1 year + depending on how fast organization can move through steps	Several years to enact legislation	6 months to develop business plan. May take several years to implement business plan	1 year	Several years
Other factors	N/A							
Ability to evolve to another structure		yes	yes	yes	no	Yes until accept final business plan	No unless necessary to reverse in a wartime situation	No. Government gets out of the business
Organization maintains reputation		yes	yes	yes	Depends on satisfying customers	Depends on satisfying customers	Depends on satisfying customers	Depends on satisfying customers
Government maintains managerial control		yes	yes	yes	no	no	no	no

As the table indicates, all alternatives will increase cost visibility of AFIP by requiring it to recover its costs through revenues from services provided; all will establish some form of performance metrics and goals; and all except a noncompetitive WCF and a monopolistic federal corporation will require AFIP to compete with its private sector counterparts. The more privatized alternatives—a federal corporation, public-private partnership, ESOP, and asset sale—will demand more rigorous cost visibility and performance goals because the private sector must conform to generally accepted accounting practices (GAAP) and face extinction if they fail to successfully identify costs and meet performance standards.

Because competition is such a powerful force in making an organization efficient and responsive, we recommend against adopting a noncompetitive WCF arrangement or a monopolistic federal corporation. A noncompetitive situation should be temporary and only permitted during the transition to full competition. Any noncompetitive transition should be as short as possible.

Self-sufficiency

All alternatives except the working capital fund options provide for self-sufficiency—for example, if some or all of the services provided by the organization fail to recover their costs, they will no longer be provided. The working capital fund alternatives allow for direct appropriations to fund construction and renovation needs. If an alternative other than a working capital fund is selected and DoD wants to retain functions that cannot fully recover their costs, such as the museum, these functions should be spun off and/or directly funded.

Transition issues

Up-front costs

All alternatives will involve substantial changes, and there will be transition issues with each. All will require up-front costs although the amount of costs will depend on the time it takes to implement key transition steps such as establishing a cost accounting system and the degree to which DoD seeks outside experts to assist in the transition.

Successful implementation of alternatives such as public-private partnerships, ESOPs, and asset sales generally require specialists that are only available in the private sector. These specialists act as financial advisors, assess the value of assets, and develop the necessary legal structures.

Legislation

Most of the alternatives we examined require legislation. Only the working capital fund and ESOPs do not. Public-private partnerships may require legislation to successfully implement the business plan for the new structure. Some alternatives, such as the creation of a federal corporation, will meet with resistance from Congress and OMB, thus making the passage of legislation doubtful.

Impact on employees

All alternatives, with the possible exception of the working capital fund, will have some impact on employees. Eventually, the number and mix of employees will change as the new organization adjusts to its new environment and the demands of competition.

Government employees and the unions that represent them are very resistant to change. Therefore, even the most benign change, such as moving to a working capital fund, may be resisted. Of the alternatives we discussed, working capital funds, executive agency, public-private partnership, and government corporation offer the least amount of change—in that order. ESOPs too can be structured to minimize the real adverse effects of converting from government to private employment. However, like asset sales, ESOPs bring with them a greater fear of the unknown that is frightening to most employees.

Military employees can still be assigned to working capital funds, executive agencies, public government corporations, public nonprofits, and the public portion of a public-private partnership. Even with asset sales, military personnel can be assigned to the privatized structure if it is a public nonprofit corporation such as ARP.

Impact on customers

Customers will be affected no matter which alternative is selected. To the extent that they have not been paying for the services they

received, they will begin to do so. Customers who have been paying for AFIP services are also likely to see a change in the rates that are being charged for the services. As AFIP moves toward full cost recovery and better identification of the cost of specific services, the rates for those services will be adjusted. These changes may cause a decrease in demand for AFIP services, while some customers seek out other service providers that give them better value for their money. To maintain its good reputation, AFIP must find ways to keep these customers satisfied.

Transition time

All the alternatives will require significant implementation time, especially if legislation is required. Of the alternatives we examined, perhaps ESOPs can be fully implemented in the shortest time period. The entire process can typically be accomplished within a year. Significant steps for other alternatives, such as public-private partnerships and executive agency, can be accomplished quickly, but the entire process may take several years. For example, with a public-private partnership, a private partner can be selected and a business plan developed within 6 months. However, implementation of the plan, including any necessary legislation, will take longer.

Analysis of policy issues

Are there any aspects of AFIP that are so governmental in nature as to preclude private sector involvement?

If the answer to this question is yes and if the governmental and commercial aspects of the organization cannot be separated, then only the working capital fund, the executive agency, and possibly the federal corporation should be considered. These are the only alternatives that allow for the new organization to be fully staffed with government employees. Public-private partnerships will have some mix of public and private employment. ESOPs and assets sales will have a mostly private workforce.

Can the new organization be allowed to fail?

Under most of the alternatives we examined, an underlying premise is that some or all of the new organization will fail if it cannot fully recover its expenses. DoD would then obtain these services directly from private sector providers. If the new organization cannot be allowed to fail and if it cannot recover sufficient revenues to cover expenses, then only those alternatives that don't require the organization to compete—mandatory source WCF or a federal corporation—are suitable.

Is it critical for the government to have managerial control?

Here, if the answer is yes, alternatives such as ESOPs and asset sales must be eliminated. Under the working capital fund, executive agency, federal corporation, and public-private partnerships, the government would still have some level of control, and DoD would be able to move gradually toward fuller privatization as the need for control diminishes.

Is it critical that military personnel be assigned to the new organization?

With each alternative, there are some ways to assign military personnel to the new organization. Some, however—working capital fund, executive agency, and public-private partnerships—require little or no change in current practices. With federal corporations, ESOPs, and asset sales, the alternatives would have to be structured so that the corporation is a public nonprofit corporation.

Can functions that may not be able to recover their full costs, such as the museum, be treated as separate entities or directly funded as overhead items?

Without market testing, it is unclear whether some of AFIP's activities, such as the museum or the tissue repository, would be able to recover their costs. If these activities must continue even if they can't recover their costs, they must be subsidized in some fashion, and the most straightforward way to do it is to spin them off as separate entities or

fund them directly with appropriations. What remedial steps are needed before any alternative organization can be reasonably considered?

How quickly must the Department act?

If DoD must transform AFIP quickly, then the ESOP alternative probably offers the fastest solution. The other alternatives will all take several years to fully implement although important steps can be begun immediately. Such steps as establishing a good cost accounting system or developing a business plan can be accomplished fairly quickly and, once completed, will pay immediate dividends.

How important is it to address the potential replacement and/or renovation of facilities?

The public-private partnership alternative is the only alternative we considered that specifically addresses AFIP's request for the replacement and renovation of its facilities. All the other alternatives address this issue implicitly. They assume that the facilities issue will be addressed once the need has been assessed in light of the organization's changed product mix, staffing, and ability to fund the costs.

Is the Department willing to seek legislation?

Only two alternatives—ESOPs and working capital funds—can be implemented without new or amended legislation. DoD may also be able to go a long way toward establishing an executive agency before legislation is necessary. However, legislation will be necessary when the executive agency requires the equivalent of trading fund status in order to operate competitively. With the public-private partnership alternative, legislation may be needed to fully implement the business plan. If this is the case, the business case will be fully documented, and legislation may be easier to enact. The other alternatives will require legislation.

The focus of this analysis is on evaluating alternative funding approaches for AFIP. In addition, the sponsor asked us to investigate whether any of AFIP's functions were inherently governmental or

could be discontinued. Though not the focus of this study, we can provide some insights from the analyses we conducted.

Are AFIP functions inherently governmental or commercial?

The Office of Management and Budget Circular A-76, "Performance of Commercial Functions," and the Office of Federal Procurement Policy Letter 92-1 define an inherently governmental function as one that is so intimately related to the public interest as to mandate performance by government employees. These are functions which require either the exercise of discretion in applying government authority, or the use of value judgement in making decisions for the government. Inherently governmental functions normally fall into one of two categories:

- *The act of governing.* Examples include criminal investigations, prosecutions, and other judicial functions; activities performed exclusively by military personnel who are subject to deployment in combat; conduct of foreign relations; deployment of armed forces; or direction of intelligence or counter-intelligence operations
- *Monetary transactions and entitlements.* Examples include tax collection; control of Treasury accounts; or administration of public trusts.

Simply put, this means that the function under consideration is so intrinsically part of the act of governing that only government employees should be allowed to perform it. Even if a private sector counterpart existed to perform the function, the function could not be converted to contract. In general, AFIP's functions do not meet these criteria. Furthermore, there is additional evidence that argues that they are essentially commercial functions. Specifically:

- *AFIP functions have commercial counterparts.* Secondary consulting, research, and education are all functions that are performed by the private sector. In discussions with AFIP and other DoD personnel, the Armed Forces medical examiner and the museum were often raised as functions that are governmental in nature. However, even medical examiners and museums

exist outside of the government. DoD may want to keep managerial control on some other the activities or processes within these functions, such as remains identification or the DNA registry. It may also want to assign military to one or more of these functions. The desire for governmental control may limit the possible range of private sector alternatives to contracting out or public-private partnerships, but the work is still commercial in nature. There are also a variety of alternatives that would continue to allow military to be assigned to a private organization.

- *ARP contract personnel are spread through virtually all of the AFIP organization, including senior management positions.* AFIP has tended to use ARP contract personnel interchangeably with government personnel. Their presence is evidence that the functions are not inherently governmental.
- *AFIP's DoD customers are allowed to choose between many needed services from either AFIP or private providers.* Military hospitals routinely choose where to obtain consultations and continuing medical education. AFIP's civilian customers are of course completely free to choose where they obtain the pathology services they need.

Within AFIP's functions there may be specific jobs that are inherently governmental, such as funds control or certain supervisory duties. However, jobs or duties are inherently governmental because the function is currently being performed by the government. If it were contracted out or privatized, the need for these governmental duties would disappear.

The potential for privatization is also reflected in Services' submissions to the Department of Defense 1999 inventory of Commercial and Inherently Governmental Functions. Most civilians aren't classified as inherently governmental. Of the 295 Army civilian personnel, 205 are listed as competent. Another 88 are recorded as competent but exempt, and only 2 are counted as inherently governmental.

Virtually all of the 205 military personnel at AFIP are listed as either inherently governmental or commercial but exempt from private

sector performance due to combat augmentation needs. All 67 Navy personnel and all 71 Air Force personnel are classified as inherently governmental for military-unique knowledge and skills. Of the 66 Army personnel, 64 are categorized as commercial but exempt from competition (60 for military combat augmentation and 4 for career progression). The two remaining billets are categorized as inherently governmental and competent, respectively.

Are there AFIP functions that can be discontinued?

There may be AFIP functions that can be discontinued. However, AFIP does not have an accounting system that can provide it with a clear understanding of the total costs of running the organization or of how much it costs to provide each function, product, or service. Nor does AFIP keep workload data in a manner that allows us to determine whether its functions are cost-effective or efficient. As a consequence, we cannot say with economic certainty which are cost-effective and should be continued and which were not and should be discontinued.

Based on our analysis of the cost of AFIP services, which was of necessity approximate, we found that the services are heavily subsidized. However, as uneconomic as the provision of these services appears to be, that does not necessarily mean that they should be discontinued. Rather, they may have true or unique value to the medical community, but need to be provided in a more cost-effective manner.

Policy considerations

Ultimately, whether or not DoD retains some AFIP functions in-house in order to exercise management control, or discontinues specific functions or services without market-testing, may rest more on policy considerations than on economic ones. For that reason, we identified a range of alternative organizational structures that would all allow AFIP to operate in a more cost-effective manner, while still giving DoD the flexibility it needs to address policy issues.

We cannot recommend a specific organizational structure without knowing how DoD decision-makers will address these policy issues.

We can, however, identify some of the more significant issues and evaluate the alternatives from those perspectives.

With the exception of the first alternative, a working capital fund, these alternatives rely on competition to provide a market incentive to become more efficient. They provide DoD with varying degrees of management control and private sector involvement. However, in the end, if AFIP does not become self-sufficient and more cost-effective, it will lose its customers and fail. Each alternative will provide DoD with the cost visibility it needs to decide whether the organization should be further privatized and to identify specific functions or services that should be discontinued because they are no longer needed or can be provided elsewhere at lower cost. Further, the alternatives are presented in such a way that they are not necessarily mutually exclusive. DoD could, for example, make AFIP an executive agency like the British Forensic Science Service, and at a later time decide to pursue a public-private partnership, an ESOP, or full privatization as more accurate cost and performance data minimized its management risk.

Lessons learned for successful implementation

Representatives of the British Forensic Science Service and other experts such as ESOP advisers, outlined several steps that DoD can take to increase the likelihood of successfully implementing its chosen alternative:

- *Assign a team headed by senior DoD managers and drive the transition to the new organization to a timely and successful completion.* The team should be composed of representatives from DoD, AFIP, and ARP, as well as customers. The team should also include all the experts needed to ensure that the essential infrastructure is in place before the conversion takes place. For example, before the British Forensic Science Service became an executive agency, a team put an accrual accounting system in place, developed the framework charter, and established performance metrics. The team was actively directed by a senior Home Office official and worked to an aggressive implementation schedule.

- *Hire outside experts.* Successfully implementing many of the alternatives examined in this paper requires the talents of sophisticated and highly specialized people. These people are familiar with such things as developing ESOPs, providing financial advice and valuing assets, assessing the organization in relation to the market place, and drafting corporation documents. This level of expertise is not generally available within the government, but it is needed if the new organization is to be tailored to the unique requirements of AFIP. These experts will help ensure that the new organization can compete effectively with private sector counterparts, minimize any problems associated with the transition, and maximize the chances for success.
- *Develop a thorough implementation plan.* The plan should be developed by the team with the help of the outside advisers. The plan should address all transition issues in detail and should include a methodology or criteria for evaluating alternatives proposed by the experts.
- *Evaluate the implementation and subsequent operation of the new organization on a regular basis.* These evaluations will increase the potential for success by allowing for mid-course corrections and fine-tuning. For example, the British evaluate their executive agencies every 5 years. At that time, they make recommendations on needed improvements and decide whether it is appropriate to make the next step toward privatization.

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