Affordable National Security

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Solving the Nation's Security Affordability Problem

With costs going up and funds going down, the Department of Defense needs to make major changes in how it operates.

There is a clash coming in the next few years between the multiplicity and complexity of the security concerns facing the United States and the shrinking resources available to address them. Unfortunately, solving this growing mismatch between national security needs and declining budgets is being made far more difficult by cost trends within the Department of Defense (DOD). Almost across the board, including in equipment and personnel costs, the trends have been upward. At the same time, the trends for the federal budget are probably heading downward, driven by growing interest in controlling and even drastically cutting the nation's spending.

To put this problem into a larger perspective, numerous historians and economists have highlighted the strong relationship between a nation's security posture and its economic strength. Yet the escalating and huge projected costs of paying for retirement and health care for senior citizens are beginning to put enormous pressure on all other government spending, including spending for long-term investments in economic growth and national security. Every day, 10,000 more people become eligible for Social Security and Medicare. With this growth in nondiscretionary expenditures and the need for the nation to borrow in order to pay its tab, by 2017 the annual payment on the national debt will equal or exceed the defense budget. As Admiral Michael Mullen, chairman of the Joint Chiefs of Staff, stated in August 2010, “The single biggest threat to our national security is our debt.”

The only realistic answer to this security affordability problem will be to do more with less—to get more bang for the buck. Congress and the DOD must recognize this, and indeed there are some signs that this is happening. There also are a number of specific actions that the DOD and government can take to become more cost-effective while also increasing the nation's capacity to ensure its security.

Problems on the rise
The record of security price tag creep is long. The costs of a number of weapons systems, already high, are rising rapidly. The next-generation fighter plane, the F-35, was to have cost $35 million each, but now is expected to cost more than $100 million each. The costs of supporting troops and equipment, more than $270 billion in fiscal year 2009, using inefficient legacy logistics systems, are high compared with those of world-class commercial logistics operations. The costs for supplying energy to the defense establishment are high and rising; in 2009, DOD paid $20 billion for fuel.

Costs associated with supporting the military labor force
are also increasing. Among various factors, medical costs are growing at twice the rate of the national average. Costs for providing health care for retirees and their families hit more than $50 billion in 2010, up from $19 billion in 2001.

Some of these costs, such as those for providing health care for an aging workforce, are matched in the overall economy. But the costs in weapons acquisition are opposite to trends in the commercial world. For example, each generation of computers routinely provides more performance at lower costs. Suppliers typically introduce next-generation systems in 18-month cycles, a far cry from the 15- to 20-year DOD weapons development cycles.

Beyond immediate costs, another problem is of growing concern: the nation's international economic competitiveness. Fewer and fewer U.S. students are enrolling in science and engineering programs in the nation's universities. Roughly 35% of graduate degrees granted at U.S. universities in these fields are going to foreign students on temporary visas. At the same time, other countries, including China and India, are encouraging and supporting students going into these fields. The United States already is seeing the results of this loss of competitiveness in the downward trend in its high-tech trade balances.

Clearly, the United States needs to encourage more of its students to go into science and technology. And why does the nation require foreign graduate students to sign a document agreeing to leave when they get their degree? Instead, the United States, after performing necessary security checks, should essentially staple green cards to their graduate degrees and encourage these students, along with their U.S. counterparts, to seek work in fields related to national security. Realizing that Enrico Fermi was not a U.S. citizen when he worked on the Manhattan Project and that many of the founders of high-technology
Jeffrey Milstein

Jeffrey Milstein is a photographer, architect, graphic designer, and private pilot. Flying an airplane was one of his earliest dreams. Building and flying all the model planes he could afford, he became intimately familiar with aircraft design, and at the age of 17, he received his pilot's license.

*AirCraft: The Jet as Art* features large-scale images of airliners in flight, shot at the precise moment when the aircraft is overhead. This work combines passions for form, symmetry, color, and flight. As a typology of aircraft, these photographs open up conversations about the complexity and beauty of modern technology. They are an attempt to share Milstein's sense of wonder when he watches a mammoth Boeing 747 gracefully gliding overhead on the way to touch down. These images are also a symbol of how vulnerable our highly technological society has become. An exhibition of Milstein's photographs will be on display at the Smithsonian's Air and Space museum from November 2011 through December 2012.

Images courtesy of the artist and Kopeikin Gallery.

startups in Silicon Valley were immigrants, it only makes sense to put these talented newcomers to work where they can best help the United States.

These education trends are almost certain to reduce innovation across a range of commercial and military areas. What makes this critical is that for the past half-century, the United States has based its strategic security on maintaining technological superiority. History has shown that the first area to be affected in a budget decline is longer-term research. In addition to the human capital challenge, the declining budgets will, of course, also have a huge impact on university science and technology innovation and on innovation in industry. Small firms would be particularly hard hit, because of the expected shrinkage of programs such as the Small Business Innovative Research program. The impact of this loss of innovation will be felt in future U.S. international economic competitiveness and national security challenges.

Yet even as economic pressures increase, the list of critical security concerns continues to grow. Instability worldwide is increasing, brought on by global economic turmoil, dissatisfaction with corrupt and incompetent dictators, the actions of fanatical religious groups, natural disasters perhaps exacerbated by climate change, and other factors. In 2010, the former Director of National Intelligence, Dennis Blair, stated that the number one external threat to U.S. security was this growing worldwide instability, which could easily draw the nation into conflicts for moral, humanitarian, or security reasons. As witnessed in the horrific events of September 11, 2001, these instabilities can create threats that cross the ocean barriers that previously had protected the continental United States.

Today, the nation faces not only terrorists, pirates, irrational dictators, and the like, but these adversaries have greater access to increasingly lethal weapons. For example, about 100 countries now have ballistic missiles that can reach more and more distant targets. Cyber warfare is also becoming a concern, as potential adversaries develop sophisticated tools aimed at crippling military and civilian infrastructures and networks. There is also the growing threat of biological attacks by individuals, groups, or nations.

**Responding to changing times**

Clearly, today's security environment is very different. Increasingly, civilian and military leaders, beginning with Defense Secretary Robert Gates, have begun to recognize that the nation must prepare for 21st-century security needs, even as fewer resources are available for the job. There are new technologies, including information technologies, biotechnologies, nanotechnologies, robotics, and others. There are new modes of warfare. There are new industrial structures that have resulted from the horizontal and vertical consolidations that marked the defense industry in the years after the Cold War and from the rapid advances in the high-tech commercial world. Critically important, there has been a globalization of technology, industry, labor, and coalition military operations.

In light of such globalization, it is apparent that the United
States must use “soft power” (diplomacy, foreign aid, media campaigns, language and cultural education, and the like) along with the “hard power” of its military. The United States also must learn to work more closely with other nations in solving the new and emerging security concerns that cannot be addressed solely by any one nation. Signs of success are appearing, as multinational alliances have addressed conflicts in Iraq, Afghanistan, and Libya. Similarly, the United States will need China’s help with North Korea and Russia’s help with Iran.

Such international cooperation can have significant security and economic effects in a variety of ways. First and most obvious is the geopolitical benefit of a common interest in peace and stability in the world. There also are obvious potential benefits that come from the cofinancing and codevelopment of weapons, from the economies of scale that flow from the larger volume of common weapons produced, and from the sharing of technology, both economically and militarily. There is not a single U.S. weapon today that does not have foreign parts in it. This is because those parts are better, not because they are cheaper. Of course, the United States must remain mindful of the potential vulnerability of too much sourcing from abroad, but the presence of these parts gives the nation’s weapons higher military performance. Additionally, this sharing of technology among allies can and should result in the nations being able to operate together with each other’s weapons when fighting side by side against a common enemy, thereby greatly enhancing their combined military effectiveness.

There is obvious potential for cost saving as the United States and its allies share development, production, and support of weapon systems, and the savings could be of significant help in addressing each nation’s budget problems. But there are equally obvious concerns, with numerous historic cases to back them up, that such multinational efforts will be resisted by the United States, as well as its allies. For example, there is fear that weapons or technologies will leak to non-ally countries and be used by opponents in future conflicts, and fear that the technologies will be used by other countries in commercial applications and thus harm competitiveness. There is political fear within each country’s government of losing jobs, compared with the jobs that will result from going it alone. There is fear that a partner will back out of the joint effort, as when Israel counted on France for its common weapons, but France (for geopolitical reasons) stopped the supply, forcing Israel to develop its own defense industry.

There also are more practical concerns, such as institutional differences in procurement rules, budget cycles, and
changing monetary exchange rates. In addition, designing weapons for common purposes sometimes can face conflicting goals. For example, one country may want aircraft that fly faster while another may want aircraft that fly higher. Producing aircraft that fly both faster and higher will add design complexity and cost.

Another area of potential cost savings is the increasing use of diplomacy and other forms of soft power in addressing U.S. security needs. As one illustration of such growth, the U.S. Southern Command and the new African Command have appointed civilian deputies from the State Department who are responsible for civil-military activities. To carry out soft-power activities, however, the State Department will need more money to support added civilian and military personnel overseas and significantly more money for foreign aid, language and culture education, and media investments. One way to address the current mismatch between available resources and staffing needs is to significantly reduce the large number of U.S. troops stationed in Europe (more than 79,000) and in Japan and South Korea (more than 62,000). Although maintaining some troops in these areas is necessary to show allies that they have U.S. support, the size of these standby forces could perhaps be reduced while still representing a credible deterrent.

Steps toward security

To address its growing security affordability problem—to get more national security capability for less money—the nation will have to take steps to change how the DOD operates. These steps fall in four main areas:

What the DOD buys. The government must make unit cost a design requirement. This is the common practice of the commercial world—meeting the price the market will pay—but it has not been the normal practice for the DOD. It has been accomplished in at least one case: development of the precision-guided air-to-ground JDAM missile. The Air Force Chief of Staff issued a three-part requirement, calling for a missile that would work, would hit the target, and would cost less than $40,000 each. The missile was successfully developed for under $17,000 each, making it affordable to be bought in the quantities needed. This missile fits in with commercial computer trends of higher performance at lower costs and shows that it is clearly possible for the DOD to achieve similar performance.

Changing what the DOD buys also will require overcoming the cultural resistance of the military and the defense industry. With the support of Congress, these sectors continue to buy the ships, airplanes, tanks, and other weapons of the 20th century, rather than shifting to the
The government's laws, regulations, and practices increasingly have served to isolate the military from the best available performance and lower costs of goods and services in the commercial and global markets.

weapons required for the 21st century. The new century will see more asymmetric warfare that incorporates features such as intelligence equipment; information systems; unmanned air, land, and sea systems; antimissile systems; and networks of land warriors outfitted with advanced weapons and other technological tools. Additionally, new equipment will need to be designed with the assumption that it will be used in what has been termed a net-centric system. Such an integrated system will include distributed sensors and shooters, rather than requiring every weapon to be self-sufficient and therefore extremely complex and expensive.

In this way, secure information technology can be used as a force multiplier to achieve increased military effectiveness. At the same time, the lower cost of individual elements will enable far larger numbers to be acquired, thus
lowering their costs still further through economies of scale. The bottom line is that the military will gain greater numbers of distributed sensors and shooters in the most affordable way possible.

**How the DOD buys.** Congress and the administration must change the way the government does its business. It must shift from a compliance mentality (that is, relying on thousands of rules on how to do something) to a results mentality in which flexibility and experimental judgment are encouraged in order to achieve desired outcomes in performance, cost, and schedule. To foster such a shift, the government should establish incentives and rewards for innovation in products and processes that result in continuous performance improvements, at lower and lower costs.

Continuous competition aimed at achieving best value, not just lowest cost, is the demonstrated model in the commercial world. But even today, the DOD is resisting continuous competition on two of its biggest procurements, both for the Air Force: the second engine for the F-35 advanced fighter plane and the KC-45 refueling tanker aircraft. The DOD still apparently clings to the belief that “this time the government will get it right” and will hold down costs in the face of program changes driven by new technology, new threats, new mission needs, and the like. But history has shown repeatedly that such cost control is unlikely to happen in a sole-source environment. On the other hand, it is very likely to happen in a continuously competitive environment in which industry is given incentives to reach goals in performance and cost.

In addition to lowering procurement costs, the DOD needs to shorten its development cycles. During the Cold War, it could take a decade or more to move new equipment from development and production to full deployment in the field. There was little security risk, because the Soviet Union moved just as slowly. But today, technology advances much faster. Moreover, U.S. military expeditionary operations frequently face the need to obtain new lifesaving or mission-saving response capabilities within a matter
of days. Clearly, government's acquisition and budgeting systems must be revised in order to be far more responsive, whenever the need requires it.

Who does the buying. The government needs to build a workforce of experienced, smart buyers. In the years after the end of the Cold War, Congress and the DOD began to greatly undervalue the importance of the acquisition workforce and took steps to significantly shrink it. In 1996, Congress mandated a further 25% reduction. Even after the 9/11 attacks led government to greatly expand its defense and national security spending, the DOD continued to neglect the acquisition workforce. For example, in 1990 the Army had five officers who held the rank of general and had backgrounds in contracting; in 2008, it had none. During the same period, the Air Force cut in half its complement of acquisition officers and civilian members of the Senior Executive Service who followed acquisitions. The Defense Contract Management Agency went from having four general officers to none and from having 25,000 employees to 10,000. Only recently has this shortcoming been recognized, but it will take many years for it to be fully corrected. A short-term fix would be to bring in experienced people from industry, under the government's allowable category of "highly qualified experts."

Who the DOD buys from. Because of the consolidations within the defense industry after the Cold War, the number of major system contractors fell from 50 to 5. Additionally, because of the vertical integration that took place at the critical subsystem level, there often was a shift from a competitive-bid mode to a sole-source award to a captive division. Two other dramatic changes in the industrial world also occurred during this period: the explosion of high-tech commercial companies, particularly in information technology, and the globalization of technology and industry. As a result, the government's laws, regulations, and practices, historically unique to the DOD and Congress, increasingly have served to isolate the military from the best available performance and lower cost of goods and services in the commercial and global markets. In order to correct this, the government needs to improve its laws, regulations, and practices in a number of key areas, including export and import controls, procurement practices, and specialized accounting. The new system should provide industry with incentives that will reward companies that achieve higher performance and lower cost results. International firms also can be encouraged to participate by removing the legal barriers they now face.

Cultural change ahead

Making changes in these areas will require an overall cultural change. Fortunately, the literature on culture change is clear. For it to happen, two things are required. First, there must be widespread recognition of the need for change. Second, there must be leadership that clearly articulates a vision, a strategy, and a set of actions, and backs up the commitment with appropriate assignment of responsibility, shifts in resources, and designations of milestones and metrics for assessing change.

These requirements are being met today. There is widespread recognition of the need for change, and Defense Secretary Gates has articulated this vision for the DOD: "the need to do more, without more." Certainly, there will be resistance, and the job will be challenging. But it must be done, and can be done. The nation's future national security depends on it.

Jacques S. Gansler (jg31@umail.umd.edu) is the Roger C. Lipitz Professor and director of the Center for Public Policy and Private Enterprise in the School of Public Policy at the University of Maryland. From 1997 to 2001, he was Under Secretary of Defense for Acquisition, Technology and Logistics. His new book is Democracy's Arsenal: Creating a Defense Industry for the 21st Century (MIT Press).