ment cost—and ultimately to its cancellation in 2002.

In their landmark 1962 book, *The Weapons Acquisition Process: An Economic Analysis*, Harvard professors Merton Peck and Frederic Scherer noted that the fundamental objective of acquiring any military system is that it either create a qualitative superiority over an enemy's weapon system or neutralize the enemy's superiority—not only today but into the future. Thus the eternal push for better fighting technology, from sharpened stones to GPS-guided bombs.

Each technological advance a country achieves should not only enhance its own military position but should also degrade the enemy's. For example, making a bomber stealthy enables it to be more destructive to the enemy's key installations. This situation is quite different from the commercial world. Buying an iPhone may rock your world, but it won't have any ill effects (except maybe envy) on your friend who owns a Motorola Razr.

This mind-set tacitly encourages the DOD to demand, and contractors to propose, ever more sophisticated technology. As one former senior military program manager put it, "to sell a program today, you need to claim that it is 'transformational' in some way."

But that quest for the "transformational" is now colliding with the hard reality that many of the fundamental technologies in today's weapons systems are already very advanced. The engines, avionics, and flight controls in military aircraft, for instance, are all close to the limits of what is possible. Even incremental advances come at enormous cost.

And so the infatuation with immature and exotic technologies, with their high costs and risks. James Finley, deputy undersecretary of defense for acquisition and technology, admits that in many programs "technology is being pushed too fast, too soon."

The widespread inability to meet promises creates a vicious circle: lowballed cost projections allow too many programs to be approved; as the projections for each program repeatedly get revised upward, the defense budget balloons; eventually, cuts have to be made, resulting in what military critic Chuck Spinney has termed the "defense death spiral." In congressional testimony in 2002, Spinney described the spiral as "shrinking combat forces, decreasing rates of modernization, aging weapons inventories, with the rising cost of operations creating continual pressure to reduce readiness."

OVER THE LAST six decades a dozen or so blue-ribbon panels and at least a hundred initiatives have called for detailed, concrete reforms in defense acquisitions. So there isn't much doubt that something is fundamentally wrong. What is most disheartening is that everyone knows it and nobody—not DOD management, not the military services, not Congress—has done much about it. "The problem in Washington isn't what we don't know but what we don't want to know," says defense analyst Thompson.

The most recent of these reform efforts was the 2005 Defense Acquisition Performance Assessment, led by Ron Kadish. The panel came up with 35 recommendations in all, some repeating earlier committees' findings, some new to that report. Among the people I interviewed who had read the Kadish report, nearly everyone said that three of the recommendations in particular would have an immediate impact on the acquisitions process, without having to change existing regulation or win congressional approval.

25 PERCENT
OF THE 637 000 U.S. AEROSPACE WORKERS ARE CURRENTLY ELIGIBLE TO RETIRE

The first of these involves trying to break the defense death spiral by returning to a "block program" approach, in which systems would be built incrementally in capability, instead of trying to satisfy every mission requirement in the first increment. The second recommendation is that programs be "time certain," meaning that most programs would have to deliver some useful operational capability within five years. That requirement would force contractors to use only technologies that are essentially mature, rather than ones that would need to be invented on a schedule.

The third recommendation is to fund only those programs that have an 80:20 cost confidence level, meaning the program has an 80 percent chance of meeting its estimated cost target. Traditionally, the DOD has aimed for a 50:50 confidence level, and some programs don't even reach that cutoff. The Army's FCS program, for instance, was approved in 2003 with "somewhere down around [a] 28 percent chance of success," according to then Army chief of staff Peter J. Schoomaker.

If the DOD were to implement all three recommendations—funding only those programs that it deemed to have an 80 percent chance of succeeding, could deliver operational capability in five years, and could be developed incrementally—it would effectively cut the number of new programs by up to 25 percent. Unfortunately, the Pentagon and the military services have shown no great willingness to scale back, even though it would likely mean getting systems out into the field more quickly.

Still, the DOD's Finley insists that the department is at least attempting to implement all of the Kadish panel's recommendations. But will they in fact fix a broken system? Finley is quite optimistic, but even he admits, "I can't predict the will for change."

Indeed, if there's one sentiment that has been repeated more often than any other in the past 60 years of failed attempts at acquisition reform, it is the need for "the will to change." That quality always seems to be in short supply.

In this election season, neither of the two presidential candidates has had much to say about reforming defense acquisitions. That's disappointing but not surprising. No politician wants to be accused of not supporting the troops. Any suggestion that defense spending be reined in has become, like Social Security, a political third rail. Most defense experts are skeptical that the Pentagon or Congress or the White House will fundamentally alter the current way of doing business. There is too much money and too many jobs at stake.

But reform will have to come. Each day that the acquisition process continues to operate ineffectively and inefficiently is another day that the troops are not getting what they need, the country is less secure, and much-needed programs, both civilian and military, don't get funded.

The next administration will need to choose wisely, and soon. ❑

TO PROBE FURTHER An extended discussion of this topic—including a look at successful procurement efforts, defense-acquisition problems in other countries, and some words of advice for the next U.S. president—is available online at http://spectrum.ieee.org/nov08/acquire.