

APRIL 2013



AEROSPACE & DEFENSE PRACTICE

Managing a downturn:

How the US defense industry can learn from its past

Companies that assertively managed their portfolio thrived in the last budget downturn. The same strategy will work again today, but companies must be mindful of the new context.

**Kevin Dehoff,
John Dowdy, and
John Niehaus**

As more than a decade of war nears an end, and the US budget faces acute challenges, the Department of Defense (DOD) is cutting its investments in the development and procurement of modernized capabilities. A “down cycle” in military spending is in fact well under way, its depth and length uncertain. Yet, the investment budget has been through similar downturns before. Companies that act decisively to capitalize on today’s realities, rather than merely doing “less of the same,” will be rewarded in the near term. Firms that adjust to the cycle will also be better positioned over the long haul, when the cycle in all likelihood reverses as a necessary wave of new programs and investments to modernize

the military emerges. Positioning the industry to create more affordable mission solutions, pursuing new pockets of growth, and actively reshaping the portfolio of businesses are principal strategies for both industry and government in the face of the downturn.

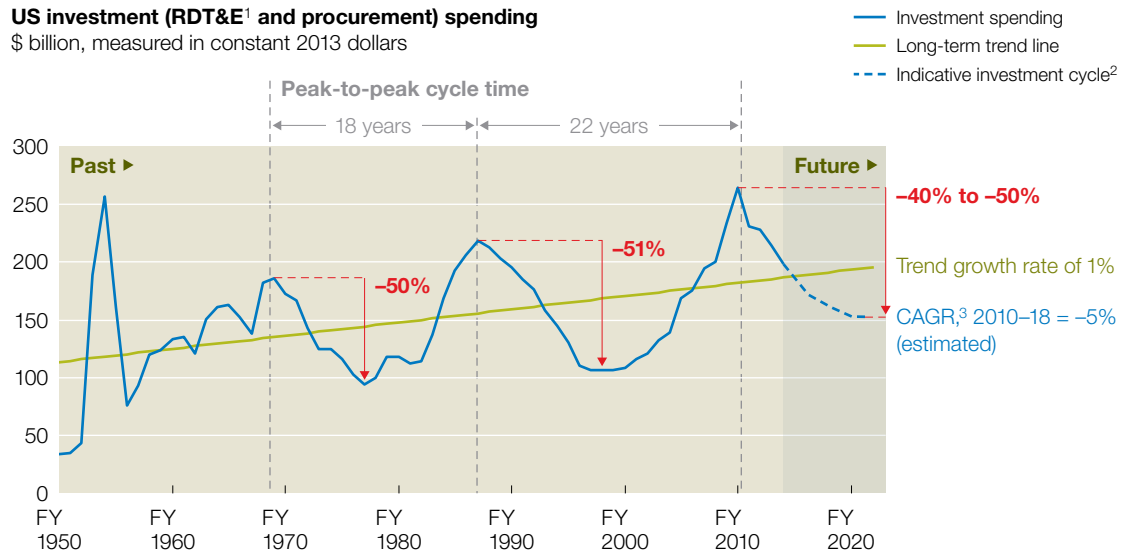
The cycle turns

Since World War II, the United States has been the world’s largest defense customer by far. US wars in Iraq and Afghanistan in the past decade accelerated spending, driving it to historic heights and increasing America’s global share of a \$1.55 trillion market to 44 percent—more than six times the share of China, the second-leading spender.¹

Exhibit 1

The industry should prepare for a significant cyclical decline in defense spending.

US investment (RDT&E¹ and procurement) spending
\$ billion, measured in constant 2013 dollars



¹ Research, development, test, and evaluation.

² McKinsey projections assume \$800 billion in total reductions to Department of Defense discretionary funding for 2011–21 (the midpoint between the president's budget and the Budget Control Act of 2011's "sequestration"), with 50% of \$800 billion in cuts coming from procurement and RDT&E.

³ Compound annual growth rate.

Source: Office of Management and Budget; US Department of Defense; McKinsey analysis

However, the winding down of two wars and acute pressure to reduce the national debt burden after the country's biggest financial shock since the Great Depression have cast a long shadow over the US defense budget. Planned reductions in DOD spending will exceed \$487 billion over the next ten years, and there may be more cuts in store.²

Even before these developments, the down cycle was already well under way: since the fiscal year 2008 "peak," the DOD's investment accounts—procurement and research, development, test, and evaluation—have declined by 25 percent. Combine these trends with the

latest pressures, and it is clear that the DOD is facing a protracted budget "trough." Although many uncertainties remain, preparing for a sharp reduction in DOD investment-account spending is prudent (Exhibit 1).

The budget contraction is increasingly visible. Since 2008, several major defense programs have been canceled and others restructured, including the Future Combat System (FCS), Combat Search and Rescue Helicopter (CSAR-X), Expeditionary Fighting Vehicle (EFV), Presidential Helicopter (VH-71), Next-Generation Cruiser (CG-X), Armed Reconnaissance Helicopter (ARH), and Global Hawk Block 30

programs, to name just a few. Further, the DOD has taken action to shift more risk to suppliers.

These changes have already begun to affect the defense industrial base. Multiples for the shares of pure-play defense firms began to decline in 2006—well before the financial crisis. Shares of pure-play firms now trade at the lowest multiples in 20 years, and significantly below those of firms that also have commercial businesses (Exhibit 2).

In the last down cycle in defense spending, following the end of the Cold War and the fall of

the Berlin Wall, then–secretary of defense William Perry encouraged the industrial base to consolidate, and consolidate it eventually did, with many household names merging or disposing of their defense assets. But more recently, the DOD has made it clear that it does not support another round of mergers given the current degree of consolidation in the industry, at least among the biggest prime contractors.³

As a result, industry and government leaders are grappling with difficult questions: what can top management do in the face extraordinary external pressures? What can the DOD do to encourage the right choices in industry? We argue that a good

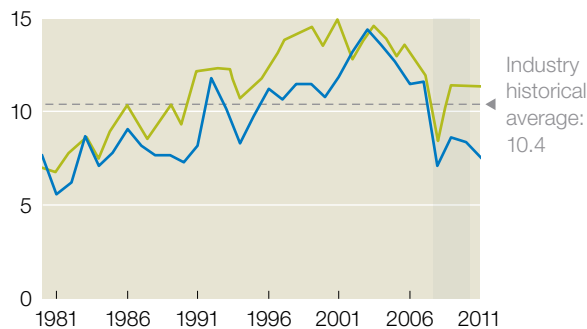
Exhibit 2

Defense companies suffered in the downturn, especially pure-play firms.

The recent economic downturn has had a negative effect on all aerospace and defense companies

NEV/EBITA¹ multiples

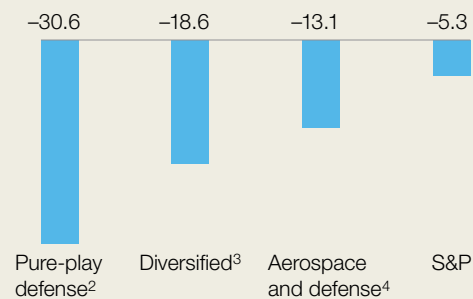
Median multiple, 1975–2011



Pure-play defense companies have been hit much harder than diversified players

Decline in NEV/EBITA multiples

Difference between 2008–10 average and 1980–2007 average, %



¹NEV: net economic value; EBITA: earnings before interest, taxes, and amortization.

²Pure-play defense players: BAE Systems, General Dynamics, L-3, Lockheed Martin, Northrop Grumman, and Raytheon.

³Diversified players: Harris, Honeywell, ITT Exelis, Oshkosh, Textron, and United Technology Corporation.

⁴Aerospace and defense players: ATK, Boeing, Goodrich, McDonnell Douglas, and Rockwell Collins.

Source: McKinsey Corporate Performance Analysis Tool (outliers have been removed)

place to begin is with an assessment of the strategies of the defense companies that emerged the strongest from the post–Cold War market.

Lessons learned from the previous cycle

Between 1985 and 1998, the DOD reduced spending on a scale similar to that of today. DOD investment fell 52 percent from peak (1985) to trough (1995), and it did not start to recover until the late 1990s. We analyzed the publicly announced strategies and high-level indicators of financial performance of major defense firms through the cycle. The analysis is necessarily qualitative, as the huge wave of consolidation that characterized the end of the cycle made the performance of individual firms obscure. In general, we can say that industrial companies responded in one of three ways:

- *Pursuing comprehensive business repositioning.*

Led by their corporate center, these companies assertively restructured their portfolio of businesses. They moved early and decisively to build at-scale advantage in new businesses (often through acquisitions), as well as in businesses they retained. Some exited other businesses. By the end of the cycle, several firms in this category had portfolios of businesses that bore little resemblance to their lineup ten years earlier. These firms embraced the down cycle as an opportunity; further, they were in a better position than others to benefit when the cycle turned up again, after September 11, 2001. Broadly speaking, these firms generated superior financial performance throughout the cycle.

- *Optimizing the core franchise.* These companies largely maintained their corporate strategy (making fewer acquisitions and divestitures) and put to one side the question of which businesses they should be in. They improved their core

businesses by consolidating and rationalizing excess capacity. When the market began to grow again, they had to optimize their portfolio of businesses under less-than-optimal conditions; some had to make acquisitions at higher valuations, while others had to sell underperforming businesses at low prices. At the end of the cycle, these companies' mix of businesses was largely the same as before.

- *Weathering the storm.* These companies did not consolidate operations or overhaul their portfolios. Instead, they focused on overcoming profitability problems and turning around troubled programs, as well as winning pivotal—but relatively scarce—large new programs. To be sure, all companies devoted some effort to performance improvement and cost reduction, but these firms led the way. Their success and survival depended heavily on winning major programs and waiting for the down cycle to reverse.

Our key finding from the analysis is unambiguous. Active portfolio management was the single most important strategy of defense companies in the last down cycle. In a period of deep uncertainty, buyers and sellers came together to produce extraordinary consolidation, and both parties were successful. Defense companies that managed their portfolios to systematically divest assets generated substantial surplus cash, rapid stock appreciation, and sizable dividends, which resulted in the highest total returns to shareholders. Buyers who purchased the right assets were positioned for competitive advantage in the next up cycle, rationalizing industry structure and excess capacity while acquiring distinctive capabilities. Conversely, firms that waited to move paid the price: their eventual

M&A was done at higher multiples, and the greater expense of these moves hobbled their firms for years afterward.

Investors rewarded active portfolio management where it created value. Many investors maintained a longer-term perspective and believed that the defense market would rebound; they also believed that consolidation would provide economic benefits to all stakeholders by reducing excess capacity and lowering fixed costs.

By 1997 (two years after the trough), most of the available assets had been acquired, and governmental encouragement for additional major mergers effectively ended. By that time, however, defense-equity multiples had expanded 50 percent (Exhibit 3)—well before the up cycle was fully under way.

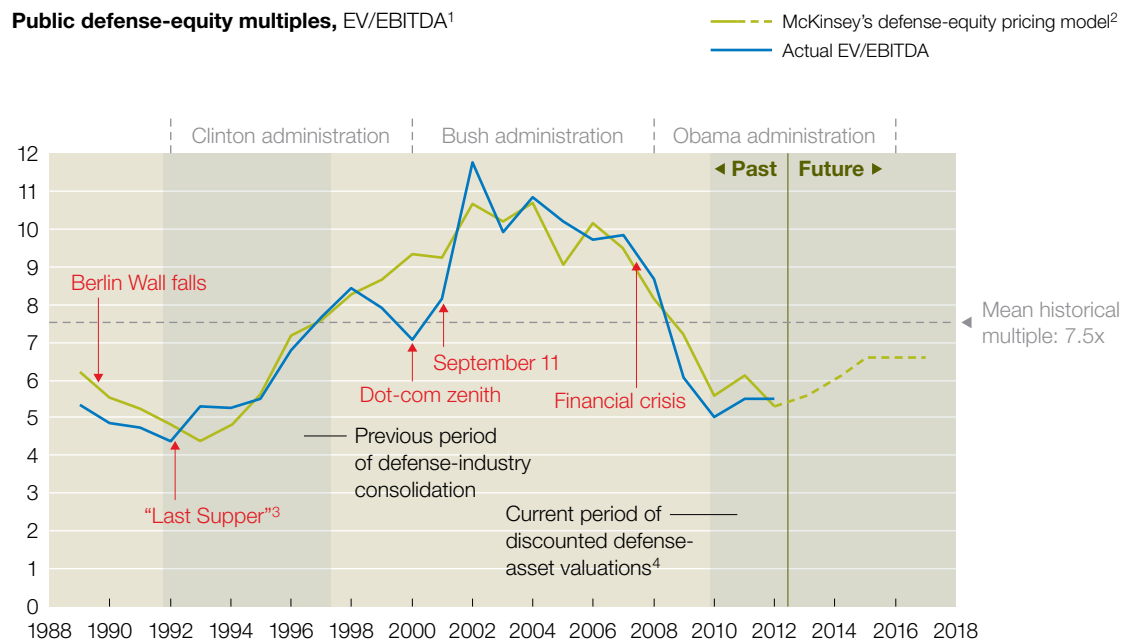
The new strategic agenda

The strategy that emerged from the last cycle will likely be just as valid in the current

Exhibit 3

Multiples for defense stocks rose considerably from the start of the last consolidation.

Public defense-equity multiples, EV/EBITDA¹



¹EV: enterprise value; EBITDA: earnings before interest, taxes, depreciation, and amortization; average EV/EBITDA multiple based on Merrill Lynch Defense Index.

²Projection based on McKinsey's defense-equity pricing model and investment-account projections.

³The "Last Supper" was a 1993 meeting between the secretary of defense and defense-industry executives, in which the industry was urged to consolidate.

⁴Discounted relative to historical multiples and comparable with those during the previous consolidation.

Source: Merrill Lynch Equity Research; McKinsey analysis

one. However, we should note four differences between today and the early 1990s:

- Today's downturn will probably last longer. Fiscal pressure—caused by the mounting federal deficit and complicated by persistent growth in mandatory entitlements—will likely prolong the reductions in defense spending.
- Absent dramatic changes in threat levels, new defense programs will be few and infrequent.
- Primary growth in demand will be outside the United States and largely concentrated in the developing world.

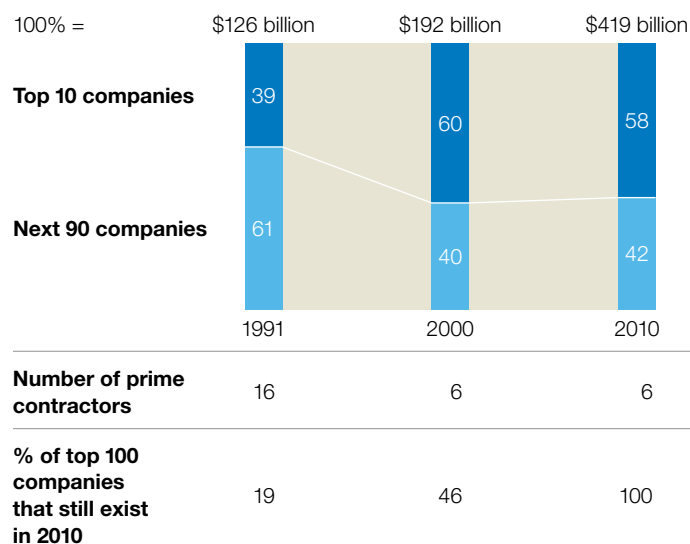
- The potential for consolidation and industry rationalization is much more limited today. The 10 largest companies now command 58 percent of the total revenue of the top 100 players, compared with 39 percent in 1991 (Exhibit 4). Additionally, the number of players in major defense systems is much smaller—in missiles, for example, there are 3 at-scale competitors today, in contrast to 13 in 1990.

To deal with these complications and to sustain a strong industrial base for the future, the DOD and its suppliers might consider a strategy with three bold steps: reimagining the business portfolio, the winning play in the last cycle,

Exhibit 4

The global defense sector is highly concentrated today.

Revenue of the top 100 defense companies worldwide,¹ %



¹Revenue figures are expressed in constant 2010 dollars; 100% indicates the total defense-related revenue of the top 100 companies in the industry.

Source: Defense News 100; US Budget GDP Deflator; US Department of Defense

will be vital, but so too will be developing the right capabilities to build products that the customer can afford. And firms will need to take steps to find new areas of growth, especially in overseas markets. We argue that this three-pronged strategy can help firms prevent the precipitous early drops in financial performance that the sector experienced in the early 1990s and can position the sector for strong performance in the future.

Affordability

Industry and government have long struggled to check the relentless growth in the costs of developing and producing modern weapons systems. Many measures have been tried only to be abandoned; costs continued their inexorable rise. Recently the DOD has taken steps to break the back of this problem; it now seeks to cap costs by stating what it can afford to pay—and making clear its intention not to pay more. Consider the US Air Force's Long-Range Strike Bomber program; Air Force leadership has said that this program's success requires an average procurement unit cost of not more than \$550 million.⁴

Explicitly capping costs to emphasize affordability is a new step, one that the industry acknowledges but for which it is ill prepared.⁵ To succeed in this new world, industry should first commit to the new rules, including the “must cost” nature of defense contracts and the implications for the relationship with its customer. Firms must then transform their business model, capabilities, and culture to build products that the customer wants and can afford, and ensure that cost cuts stick. If firms can get this right, it will not only enhance their chances of winning a contract but also improve the probability that the program receives its funding in the first place.

To make the shift to affordability, firms must make a sweeping array of changes in their business models, and especially the following capabilities (Exhibit 5). They should start with the change in the customer relationship. What the government seeks, and the nation needs, industry is naturally obliged to deliver. The government has made changes in acquisition policy in a way that places much of the burden of change on the industry—and shifts more risk to it.

Industry leaders should extend a helpful hand while simultaneously making it clear that a true peer-at-the-table partnership with government is required to craft affordable, high-value mission solutions.

Exhibit 5

Defense companies must transform their business models.

	From ...	To ...
Customer relations	<ul style="list-style-type: none"> • Arm's-length relationships with marginal level of trust • Poor communications and lack of transparency • "Conspiracy of hope" that leads to cost and schedule overruns 	<ul style="list-style-type: none"> • A true partnership with high level of trust • Joint problem solving, with each side contributing its distinctive expertise • Mutual and objective assessment of probable costs and time-certain schedules
Product development	<ul style="list-style-type: none"> • Protracted, ambitious development with uncontrolled scope • "Generational leaps" in technology 	<ul style="list-style-type: none"> • Rapid, time-bounded development • Incremental, product-line approach to technology • Life-cycle-requirements outlook
Production and manufacturing	<ul style="list-style-type: none"> • Designed around optimistically high volumes • Long production runs 	<ul style="list-style-type: none"> • Flexible, but designed for lower volumes • Agile production cycles
Supplier-relationship management	<ul style="list-style-type: none"> • Optimized for suppliers' capabilities • Fixed supplier base • Reactive approach to supplier management 	<ul style="list-style-type: none"> • Optimized for cost, flexibility, and speed • Agile and global supplier strategy • Collaborative supplier relationships
Organization	<ul style="list-style-type: none"> • Organizational structure shaped by large platforms • Heavy infrastructure and allocated support costs absorbed by business unit 	<ul style="list-style-type: none"> • Lean infrastructure and support driven by business requirements and affordability • Talent management to develop leaders and maintain critical skills

But industry must also recognize that, with this change, government is asking for the industry's help; it sees that it cannot lead alone and needs the industry's commitment to enable transformation. For example, it is industry and not government that is in the best position to judge what is technically feasible in a given time horizon and cost range.

Industry should engage government and make clear its belief that the relationship should change. In our recent survey of industry leaders, many said that they are hoping for greater transparency, simplification and acceleration of processes, and more open dialogue and collaboration with the government customer (see "Defense outlook 2015: A global survey of defense-industry

executives," on mckinsey.com). Industry leaders should extend a helpful hand while simultaneously making it clear that a true peer-at-the-table partnership is required to craft affordable, high-value mission solutions. In practice, this might mean a requirements-setting process that looks more like commercial business models, with mechanisms that enable industry to effectively challenge ideas that are inconsistent with cost and schedule constraints. It is both reasonable and essential for industry to aim for a partnership of equals in the formulation of complex mission solutions.

This imperative is equally critical for government. While avoiding industry capture is important, it is also true that only a collaborative approach



can lower costs while continuing to drive innovation. Government simply doesn't have the information it needs to effectively manage development and procurement costs, and the only way to get it is through increased cooperation. By appropriately managing incentives, government buyers can capture these collaboration benefits.

Product development is at the heart of the affordability transformation. Product development must change, moving away from a protracted process that aims for the most exquisite technical solutions and toward rapid and time-certain development models, in which affordability and risk reduction are critical performance parameters.

Production and manufacturing systems that are designed around optimistic volume projections and long production runs should be shelved in favor of low-volume (and thus more realistic) flexible manufacturing approaches with shorter production cycles.

Supplier relationships used to be formed almost entirely on the basis of suppliers' ability to meet mission requirements. In the future, suppliers' ability to meet cost targets and deadlines, and their

flexibility in rapidly accommodating changes in programs, will be just as important. Frequent changes in programs also mean supplier relationships should become more collaborative, so that suppliers can better anticipate requests for changes. Many traditional defense suppliers will likely find this very challenging. Defense companies will have to establish a global base of suppliers, casting a wide net to improve competition and add redundancy.

Organizations today are often structured in units corresponding to the company's legacy acquisition programs. These programs, contracted on cost-plus terms, encourage a bloated infrastructure and inflated costs. In the new world of affordable systems, companies will need not merely to cut these costs but to restructure the organization in ways that match the customer's needs. This will also serve them well in adjacent and international markets, as we discuss below, where the old and expensive platform-centric structure will likely prevent the firm from moving with the needed agility, deftness, and entrepreneurialism.

The shift to affordability will also mean big changes in roles and responsibilities. For example,



industry program managers will need to raise their game. With so many programs plagued with burgeoning costs and hidden risks to the enterprise, program management must reduce overhead and get better at identifying and mitigating a comprehensive set of project risks. (Government too should improve skills in this area, as we explain in “Project management in defense: The essential capability,” on mckinsey.com.) More broadly, critical technical and leadership skills can erode rapidly in a down cycle, as the most experienced engineers, scientists, and program managers retire and attracting the next generation of engineers and leaders can be difficult. Moreover, the shift to affordability requires a profound change in corporate culture. Taken together, these issues bespeak the need for a redesign of the talent strategy at many defense companies.

Growth

With the US defense budget declining and fewer new franchise programs cropping up, companies must sharpen their ability to identify growth opportunities. Although almost all defense sectors will shrink, companies should scour the landscape for the relatively high-growth segments that remain. They should seek those that are suitable for investment and provide

opportunities to build an advantaged position at scale.

The search should start by considering the shift of national-security focus and the associated reallocation of budget. Most notably the “pivot to the Pacific” emphasized in recent revisions to the National Military Strategy prioritized certain investment capabilities and force-structure levels. Intelligence, surveillance, and reconnaissance systems; undersea and surface ship capabilities; long-range strike aircraft; strike missiles; missile defense; electronic warfare; and capabilities needed to operate in sophisticated anti-access/area-denial threat environments are in demand, while capabilities needed to support deployed ground forces are on the wane.

Firms can also look overseas for growth. Many emerging markets were unscathed by the financial crisis and stand to benefit from growing economies and intrinsic defense-investment capacity. (For more on the opportunities in these markets, see “A bright future for India’s defense industry?” and “Strategy, scenarios, and the global shift in defense power,” on mckinsey.com.) This has no doubt prompted the DOD to emphasize exportability in its recent

While it is almost impossible for defense companies to time acquisitions and divestitures perfectly, those that are well prepared—and ready to deal—will likely benefit most.

Better Buying Power 2.0 initiative. This is an unambiguous growth opportunity.

However, the challenge of international defense markets is often underestimated. Offset requirements, national politics, complications with local partners, and significant differences in US trade law relative to international competitors add complexity. Perhaps most important, there are often four or more competitors bidding on the most lucrative opportunities rather than the two or three customarily involved in DOD procurement. In this light, joint ventures, alliances, and partnerships with international companies may provide an answer. A partner with market access and critical capabilities, including an understanding of the customer and product and technology know-how can help US firms gain a foothold in these markets and increase their market share on economically attractive terms.

Portfolio management

As noted, US defense-company equity multiples are at generational lows—and they could dip lower still, given the potential for further reduction in the DOD's investment accounts and for broader fiscal crisis in the United States. While the low multiples no doubt produce sleepless nights

for CEOs, the flip side is that companies have an opportunity to acquire other defense assets now at what may be seen as bargain prices by the end of the decade.

We also see other opportunities to actively manage the portfolio. Many companies have built up portfolios over the past 20 years without sufficient attention to rationalizing them. As a result, they contain a mix of some very healthy businesses and others that are challenged. With little chance for more megamergers that would remove unproductive capacity from the industry, companies are going to have to do it themselves, either by selling less attractive businesses, substantially restructuring them, or spinning them out. We have begun to see some of this already, with Northrop Grumman spinning off its shipbuilding business in March 2011 to form Huntington Ingalls Industries, and SAIC announcing its intention to split into two separate companies. We can expect to see many more such moves to rationalize and restructure portfolios.

For both acquisitions and sales, a sober examination of the competitive landscape, market dynamics, and the future environment is essential.

Nothing should be off the table, and long-held assumptions should be challenged; management and the board should consider acquiring and divesting assets, large and small.

However, dabbling in investments and acquiring subscale position is unlikely to yield significant results. Rather, a company's portfolio strategy should focus on at-scale positions that establish competitive advantage. While it is almost impossible for defense companies to time acquisitions and divestitures perfectly, those that are well prepared—and ready to deal—will likely benefit most.



For 50 years, the US defense industry has led the world in creating the most advanced weapon systems, technologies, aircraft, and vehicles. Today, the leaders of these companies must apply to their own organizations the very ingenuity that has kept America's military dominant. History shows that the time to act is in the depths of the downturn. Adhering to business as usual,

trying on different and conflicting strategies, or merely riding out the storm have not worked well. Defense firms have succeeded in past cycles and will do so again. We believe that firms that embrace the strategies we have defined will find success in the current downturn, and when the cycle turns, as it almost certainly will, they will have an advantage over the long term. ○

¹Data on share of global defense spending are provided by the Stockholm International Peace Research Institute.

²President Obama's fiscal 2013 budget called for a \$487 billion reduction in defense spending. An additional \$500 billion in defense-budget reductions may be required by 2021 under the Budget Control Act of 2011 (BCA). Such "automatic sequestration" reductions under BCA would hit defense spending the hardest, according to the Congressional Budget Office.

³Yochi J. Dreazen, "Pentagon: No more big defense mergers," *National Journal Daily*, June 15, 2011 (nationaljournal.com).

⁴The Pentagon's fiscal year 2013 budget sent to Congress in February 2012 called for 80 to 100 aircraft, at a unit cost of not more than \$550 million.

⁵Almost all industry leaders we polled in our December 2012 global survey of defense-industry executives expect the shift to affordability, but two-thirds say their companies are not ready for it.

The authors wish to thank Daniel Pachthod for his contributions to this article.

Kevin Dehoff is a principal in McKinsey's New York office, **John Dowdy** is a director in the London office, and **John Niehaus** is a senior expert in the San Francisco office. Copyright © 2013 McKinsey & Company. All rights reserved.