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Foreword

Spurred by shifting global geopolitics and nations reassessing their defense priorities, European NATO countries have made defense investment commitments to allocate 3.5 percent of GDP to core defense, and an additional 1.5 percent to broader security and resilience by 2035—an action unprecedented since the end of the Cold War. The key challenge lies in translating these investments rapidly into effective deterrence, with a critical focus on scaling the industrial and technology bases fast enough to deliver capability, readiness, and resilience.

Building on our recent white paper, "Cutting Europe's €800 billion Gordian Knot: Five catalysts to transform defense," this compendium dives into crucial enablers for the scale-up challenge, covering:

— *European defense by the numbers.* The McKinsey European Defense Dashboard provides a comprehensive set of metrics to track the evolving defense posture of European NATO countries. Combining budget and equipment outlooks with indicators of industrial capacity and innovation, it further offers deep dives into defense share price performance, venture capital flows, equipment stocks, and fragmentation.

— *Future defense tech: Multidomain stacks to build affordable mass.* Modern conflict is eroding the assumption of permanence, with high attrition and munition burn rates necessitating replenishable capacity at industrial speed. This article analyzes the case for shifting from exquisite, vertically integrated platforms to a modular, five-layer tech stack—especially investing in the "missing middle" of compute, transport, and interoperability so that software capabilities can be deployed and sustained at scale.

— *Europe's €1 trillion challenge for flexibility and scale.* The current security environment demands acquisition systems that can swiftly convert funding into fielded capability. This article explores the benefits of end-to-end reforms that prioritize outcomes over process, balancing speed, cost, innovation, and sustainment. The authors propose multispeed pathways by archetype (survivable, attritable, and disposable), along with spiral development, decision rights, and incentive structures that stabilize demand and improve delivery.

— *Mike Schoellhorn on uniting European defense through scaled leadership and collaboration.* In this interview, Mike Schoellhorn, CEO of Airbus Defence and Space, highlights practical approaches to tackle fragmentation, including early tech maturation and a winning team mindset. He emphasizes the need for decision superiority (enabled by AI and quantum technologies) and for rapid, timely execution.

— *Opportunities through consolidation in the European defense industry.* Targeted roll-ups in high-potential areas of Europe's fragmented Tier-2 and Tier-3 bases—including advanced materials, defense electronics and C4ISR, dual-use mechanicals, and space components—could unlock up to €9 billion in annual synergies (around €45 billion cumulatively by 2030). This could benefit R&D, strengthen the security of supply and delivery performance, and ensure that Europe's rearmament effort builds domestic industrial capacity and long-term strategic resilience.

In February 2025, our previous compendium, *Shaping resilience: Defend. Secure. Innovate.,* explored how technology and innovation can transform defense investment into tangible impact. Today, the focus is on scaling and accelerating these efforts to produce and sustain capabilities quickly enough to deter threats. Defense and security investments are a global public good, essential for protecting lives and livelihoods in Western democracies. This compendium offers a practical, actionable agenda for European nations: Measure progress with a shared fact base, build modular and interoperable architectures, modernize acquisition processes, ensure strategic resilience, and mobilize industry and private capital to expand capacity across the supply chain.

Scaling security means building today to secure tomorrow.

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European defense by the numbers

This article is a collaborative effort by David Chinn, Hugues Lavandier, and Jakob Stöber, with Marcel Schlepper and Tobias Otto, representing views from McKinsey's Aerospace & Defense Practice.

European NATO countries are entering a decisive phase of acceleration in defense. Driven by the objectives of military readiness and strategic sovereignty, allies agreed at the NATO Summit in The Hague on a new benchmark of at least 3.5 percent of GDP for core defense spending. Accounting for fiscal capacity, this could lift European defense spending toward €800 billion by the end of the decade.

Markets have reacted quickly to this shift. Defense equity valuations have increased markedly, and venture capital funding for European defense start-ups is rising. Other parts of the defense ecosystem are taking more time to adjust. Order backlogs are expanding, a substantial share of equipment continues to be sourced outside Europe, and equipment stocks—reduced by recent donations—remain below their 2021 levels.

This study provides a quantitative baseline for Europe's transition. We introduce 17 indicators that capture the state of European defense in numbers. Together, they offer a fact-based view of where Europe is today, where momentum is built, and where structural constraints could slow the path from spending to military capabilities.

Trend: Upward Downward Deep dives

Industry

Indicator	Description	European NATO countries[1]	European NATO countries change vs . . . –1 year	–3 years	–5 years	US	Total NATO
Performance of defense stocks	TSR for equal-weight defense index	113%	+82 pp	+80 pp	+122 pp	42%	69%
Share of global defense revenue	Revenue of European defense companies out of global top 100 companies' revenue[2]	23%	+2 pp	+3 pp	+4 pp	49%	73%
Direct employment in defense	Number of direct employees in defense industry (excluding supply chain)[3]	633k	+9%	+36%	+44%	N/A[4]	N/A[4]
Lead times for primes and OEMs	Aggregate backlog-to-revenue ratio for defense primes and electronics OEMs[5]	3.7	+0.1	+0.8	+0.9	2.4	2.8
Regional procurement	Share of platform procurement contracts signed with domestic or European players	49%	–5 pp	+2 pp	–24 pp	>95%[6]	N/A[7]
Venture capital investment	Venture funding collected by defense tech start-ups	€2.6 bn	+204%	+631%	+1,634%	€7.4 bn	€10.0 bn

[1]For consistency over time, values are estimated for the current 29 European NATO members. Latest available year—either 2025 or 2024. Descriptions apply for European NATO countries. [2]Company selection based on Stockholm International Peace Research Institute (SIPRI) and *Defense News* top 100 defense companies (with defense share of at least 33%). [3]Includes all Aerospace, Security and Defence Industries Association of Europe (ASD) member countries—not all are NATO members (and vice versa); slight composition change over time due to inclusion of Ireland, Lithuania, and Romania in 2023 and 2024. [4]No US comparison with same methodology available. [5]Company selection based on SIPRI and *Defense News* top 100 defense companies (with defense share of at least 50% or reporting defense business unit separately). [6]Procurement from domestic suppliers. [7]Not possible as different definitions are applied for European NATO countries and US.
Source: Annual reports of defense companies; ASD Europe; DACIS, Infobase Publishers; *Defense News*; International Institute for Strategic Studies—The Military Balance Plus; PitchBook Data, Inc.; SIPRI; S&P Global Market Intelligence; McKinsey Corporate Performance Analytics; McKinsey analysis

Government

Indicator	Description	European NATO countries	–1 year	–3 years	–5 years	US	Total NATO
Defense budgets compared to GDP	Share of aggregate GDP being employed for defense spending	2.4%[1]	+0.3 pp	+0.7 pp	+0.7 pp	3.2%[1]	2.8%[1]
Equipment investment	Share of defense spending being employed for equipment purchases	34%[1]	+4 pp	+8 pp	+11 pp	30%[1]	31%[1]
Share of equipment spend	Investment of European NATO countries into equipment compared to total NATO	39%[1]	+6 pp	+12 pp	+16 pp	59%[1]	100%[2]
Defense spending 3 years out[3]	Estimated size of future defense spending in McKinsey's outlook	€675 bn	+24%	N/A[4]	N/A[4]	N/A[5]	N/A[5]
Equipment spending 3 years out[3]	Estimated size of future equipment spending in McKinsey's outlook	€265 bn	+41%	N/A[4]	N/A[4]	N/A[5]	N/A[5]
Fiscal capacity	Ratio of aggregate general government debt over GDP	83%	+1 pp	+0 pp	–8 pp	125%	106%

[1]For 2025, only preliminary numbers reported by NATO. [2]By definition. [3]Compares outlooks for 2028 based on "Balanced achievement of 3.5% in 2035" path in current forecast vs "minimum" path in previous forecast, which captured national budgets until Feb 2025. [4]Data not available. [5]No budget released for 2028 by current administration.
Source: European Central Bank (ECB); International Monetary Fund (IMF); NATO; McKinsey European Defense Budget Outlook; McKinsey analysis

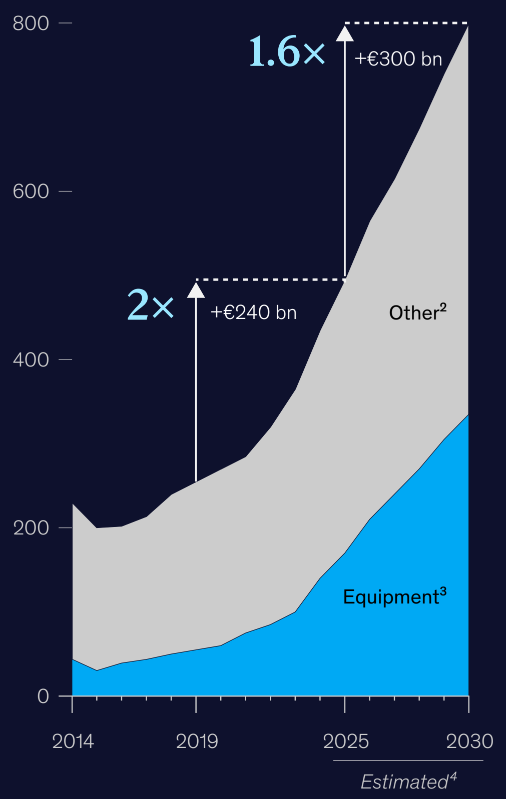
Military

		European NATO countries[1]	European NATO countries change vs . . . –1 year	–3 years	–5 years	US	Total NATO
Military personnel	Number of active military personnel in armed forces	2.1 mn	+2%	+7%	+11%	1.3 mn	3.5 mn
Main battle tanks	Number of active main battle tanks in armed forces	6,700	+1%	+3%	+0%	2,650	9,400
Tactical combat aircraft	Number of active fighter jets and ground attack/fighter bombers in armed forces	2,050	+2%	–2%	–5%	3,050	5,200
Large surface combatants	Number of active cruisers, destroyers, and frigates in armed forces	127	–3%	–5%	–7%	110	249
Fragmentation	Number of different military assets in operation in 9 categories[2]	125	–3%	+0%	+2%	29	145

[1]For consistency over time, values are estimated for the current 29 European NATO members. Latest available year—either 2025 or 2024. Descriptions apply for European NATO countries.
[2]Categories are main battle tanks, armored infantry fighting vehicles, 152/155mm howitzers, long-range air defense, tactical combat aircraft, attack helicopters, large surface combatants, conventional and nuclear submarines.
Source: International Institute for Strategic Studies—The Military Balance Plus; NATO; McKinsey analysis

European defense spending may increase to €800 billion in 2030.

Core defense spending of European NATO countries,[1] € billion



[1]Scenario is based on balanced achievement of 3.5% core defense spending target as a share of GDP in 2035. Ramp up to country-individual defense targets based on individual ambition level and fiscal space. Including current NATO members throughout. Employing fixed exchange rates as of July 9, 2025. [2]Including spending on personnel, infrastructure, and others. [3]According to NATO's definition, equipment expenditure includes major equipment expenditure (eg, aircraft; artillery; combat and transport vehicles; missiles) and R&D. [4]Only preliminary numbers for 2025 have been communicated.
Source: ECB; IMF; NATO (2014–23); McKinsey European Defense Budget Outlook

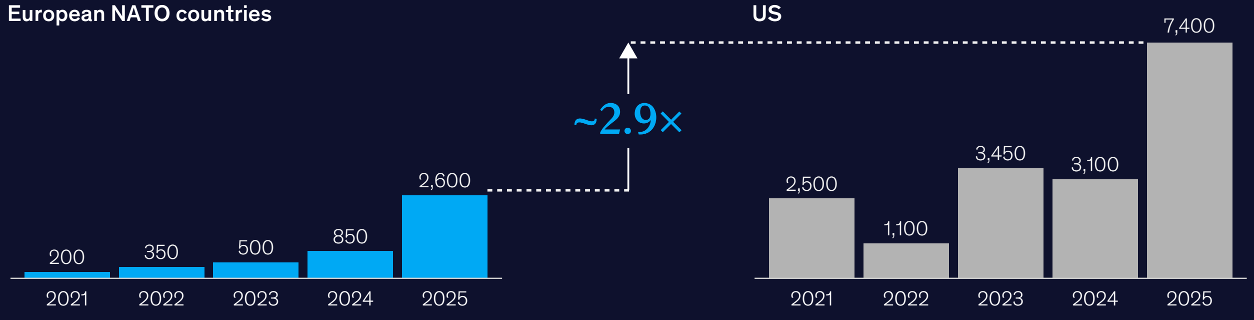
Since 2022, European defense companies have substantially outperformed other industry indices.

TSR,[1] index (Jan 2022 = 100)

[1]Company selection based on the largest 100 defense companies by SIPRI and *Defense News* that have a defense share of at least one-third and were publicly listed by end of 2025. European defense index starts with 16 equally weighted companies and US defense index with 25 companies. Newly listed companies are added with a lag of 2 full months from IPO. Values for S&P are indicating total return.
Source: S&P Dow Jones Indices; S&P Global Market Intelligence; McKinsey Corporate Performance Analytics

Despite strong acceleration in defense tech funding, the gap between Europe and the United States persisted in 2025.

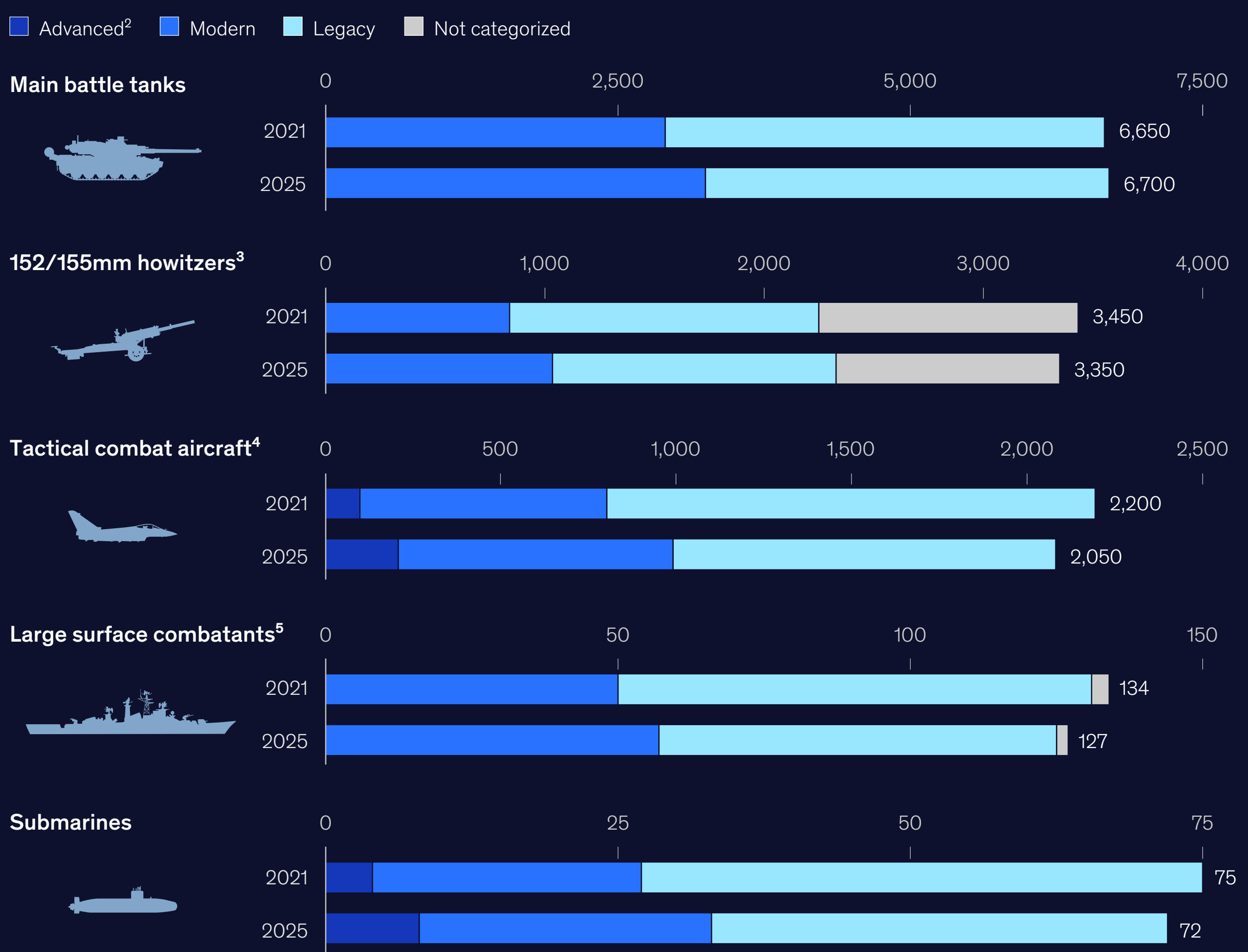
Total venture deal volume for defense tech start-ups in Europe and the US,[1] € million[2]



[1]Includes venture capitalist, incubator, business angels, and other venture funding; excludes private equity, corporate funding, and space launch companies (eg, SpaceX). [2]Converted into € based on exchange rate on Jan 2, 2026.
Source: McKinsey analysis, leveraging data by PitchBook Data, Inc.

While the size of equipment stock has decreased since 2021, the number and share of modern military equipment are increasing in all categories.

Active military equipment stocks of European NATO countries[1] by modernity level, number



[1]For 2021 and 2025, all current European NATO members are included. [2]Modernity level advanced not assigned to main battle tanks and 152/155mm howitzers. [3]Excludes coastal artillery. [4]Includes fighter jets and ground attack/fighter bombers. [5]Includes cruisers, destroyers, and frigates.
Source: International Institute for Strategic Studies—The Military Balance Plus; McKinsey analysis

Military

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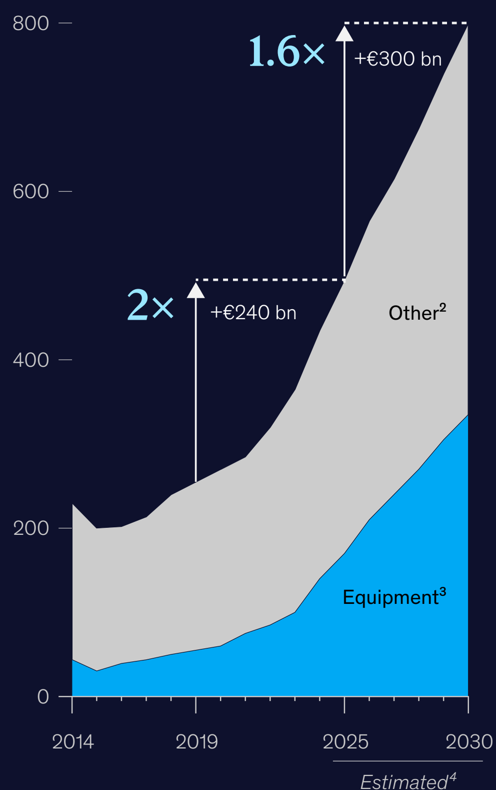
European defense spending may increase to €800 billion in 2030.

Core defense spending of European NATO countries,[1] € billion



[1]Scenario is based on balanced achievement of 3.5% core defense spending target as a share of GDP in 2035. Ramp up to country-individual defense targets based on individual ambition level and fiscal space. Including current NATO members throughout. Employing fixed exchange rates as of July 9, 2025. [2]Including spending on personnel, infrastructure, and others. [3]According to NATO's definition, equipment expenditure includes major equipment expenditure (eg, aircraft; artillery; combat and transport vehicles; missiles) and R&D. [4]Only preliminary numbers for 2025 have been communicated.
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Source: S&P Dow Jones Indices; S&P Global Market Intelligence; McKinsey Corporate Performance Analytics

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Future defense tech: Multidomain stacks to build affordable mass

In the face of modern warfare, a multidomain defense system is vital—necessitating a move from a vertically integrated approach to modular systems within the future defense tech stack.

This article is a collaborative effort by Christian Rodriguez, Dale Swartz, David Chinn, Jakob Stöber, and Ryan Brukardt, representing views from McKinsey's Aerospace & Defense Practice.

The current geopolitical landscape demands a transformation of defense systems. At present, NATO equipment and technical architectures reflect the legacy of the AirLand Battle doctrine of the Cold War, designed for a single war of survival against a larger enemy. After 1989, the urgency of the mission dissipated, and investment in military equipment and modernization began to dwindle. However, NATO countries now are operating in an evolving and complex environment, where the disruptions are different, but no less significant.

Recent data from the front lines of modern conflict reveal a technology consumption rate that defies peacetime logic—combined forces are losing thousands and thousands of uncrewed systems every month.[1] The daily attrition rate could rapidly deplete the conventional air fleets of most NATO countries.[2] For the United States, it could take less than a week to deplete stockpiles of long-range precision munitions in a Taiwan scenario, based on repeat simulations.[3]

For the NATO and United States militaries, sustaining high-intensity combat without exhausting critical long-range precision munitions is a significant challenge.[4] The future of defense will be in multidomain battle, necessary to sustain prolonged engagements, whether for low-Earth orbit satellite constellations, unmanned underwater vehicles, or precision munitions. Exquisite systems will continue to be important for addressing the most critical assets, but the defining characteristics of modern warfare will be mass.

To achieve mass, militaries will need to shift toward highly proliferated, resilient, and networked systems across all domains, which will be made possible and affordable by new technologies. Still, it is no easy task to build a sustainable defense tech stack. While growing numbers of disruptors and nontraditional defense players are delivering high-grade software, including autonomous swarming logic, AI-driven sensor fusion, and dynamic targeting algorithms, defense organizations are faced with a specific, complex challenge to transformation: deploying these capabilities onto legacy platforms. These older systems, designed decades ago, lack the onboard compute, energy, and open architecture needed to run modern code.[5]

In the past, the tech stack was developed for survivability; now, new technology megatrends, such as AI, advanced computing, lower-cost manufacturing, and a shifting global industrial base, will require optimization to ensure that inventories are replenished at the pace of operations. This means developing an affordable tech stack that can be produced, deployed, and replenished at industrial speed—necessary for achieving affordable mass.

The state of the current tech stack is largely the result of the investment structure that has been used in the industry. For the past decade, Western defense players have adopted a "barbell" investment strategy, focusing significant spending on the bottom of the tech stack (new platforms and hulls) and the top of the stack (new algorithms and AI).[6] However, they have invested less in the digital infrastructure required to connect the algorithm to the machine.

[1] "The impact of drones on the battlefield: Lessons of the Russia–Ukraine war from a French perspective," Hudson Institute, November 13, 2025; David Kirichenko, "Drone superpower: Ukrainian wartime innovation offers lessons for NATO," Atlantic Council, May 13, 2025.
[2] Justin Bronk, "The evolution of Russian and Chinese air power threats," Royal United Services Institute, January 8, 2026.
[3] Seth G. Jones, "Empty bins in a wartime environment: The challenge to the US defense industrial base," Center for Strategic & International Studies (CSIS), January 23, 2023.
[4] David A. Ochmanek et al., "Inflection point: How to reverse the erosion of the US and allied military power and influence," RAND, July 25, 2023.
[5] McKinsey analysis.
[6] McKinsey analysis.

From vertically integrated platforms to modular defense tech stacks

The imbalance of investment has impacted modernization efforts. Our analysis suggests that closing the "computing gap"—upgrading the current installed base of more than 700,000 nodes to host the AI capabilities that governments are already buying—will cost between $160 billion and $230 billion for the United States' military alone. Until this infrastructure deficit is addressed, NATO's and the United States' allies' abilities to realize the full potential of software at the tactical edge—where it is needed the most—will be constrained by limitations in the tech stack.[7] Europe's fragmented and aging installed base represents an even greater modernization challenge.

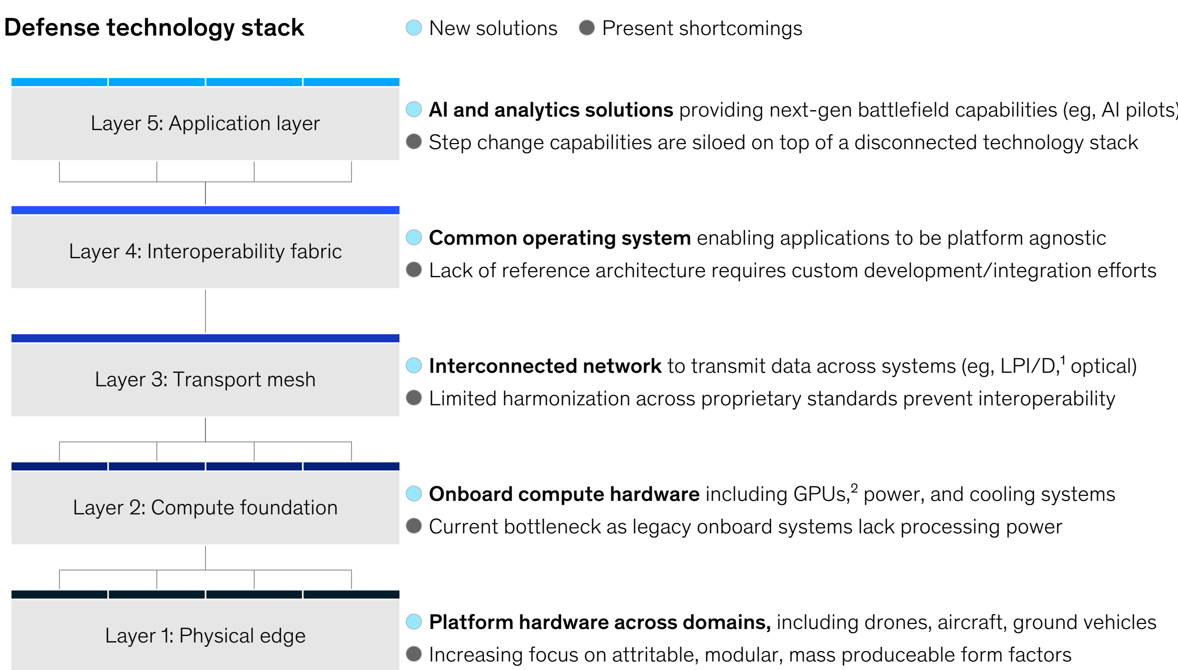
The five-layer defense tech stack of the future

A modular, five-layer framework can help to explain why the current tech stack is unsuitable for modern warfare (exhibit). Over the past decade, these layers have been treated as a single, vertically integrated product, with the modernization of discrete technologies gated by the customer and integration. However, to overcome the integration challenge, they need to be disaggregated, allowing hardware and software to evolve independently at their own necessary speeds.

[7] Dale Swartz, Ryan Brukardt, and Karl Hujsak, "Creating a modernized defense technology frontier," McKinsey, February 12, 2025.

Exhibit

The defense technology stack of the future can be seen as five modular systems.



[1]Low probability of intercept/detection.
[2]Graphics processing units.

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1. The physical edge

In the 20th century, value came from physical hardware. However, in the future tech stack, the physical platform—whether it be a drone, a ground vehicle, or a satellite bus—will be the commodity. The primary requirement for this layer is scalable producibility. In a world of contested logistics, militaries can no longer rely on bespoke, hand-built platforms that take years to build and require significant sustainment (maintenance) tails to support. Western ministries of defense (MODs) will require "attritable mass:" common, affordable, modular form factors that can be manufactured (or 3D printed) where needed, tolerating high losses without degrading the wider network. Exquisite, survivable platforms will remain essential (such as nuclear deterrents, high-end air dominance, and certain space missions), but deterrence and endurance now require attritable mass at scale, plus the ability to reconstitute quickly.

2. The compute foundation

The compute foundation provides the necessary processing capacity. This is the physical "brain" of the stack: the onboard graphics processing units (GPUs), electrical power management, and thermal cooling required to run AI workloads at the tactical edge. Currently, this is the ecosystem's most significant opportunity for advancement: Localized sensor fusion and processing cannot occur if the legacy platform lacks the compute capabilities to run the algorithm. Moving data off-platform increases operational latency and stresses communications networks. Significant retrofits will be required in the existing fleet alone to provide the processing energy needed to support modern applications.

3. The transport mesh

Data need to move through resilient, multimodal networks of low probability of intercept/detection (LPI/LPD) waveforms, 5G and 6G, and optical (laser) links. Currently, disparate assets cannot share targeting data due to rigid proprietary standards. The future stack relies on true interoperability—a self-healing mesh that routes insights from sensor-to-shooter regardless of the platform. A practical look at where existing, proliferated solutions (for example, Link 16 or common data link [CDL]) can serve as a bridge to future protocols, such as 5G derivatives and bespoke military protocols, that enable highly networked communications that are resilient to electronic warfare capabilities.

4. The interoperability fabric

This is the "missing middle" of defense investment: the layer that manages heterogeneity. It abstracts the hardware so that a mission application (layer 5, the application layer) can run on any platform (layer 1, physical edge). Without a reference architecture here, the ecosystem remains fragmented, requiring bespoke, multiyear integration efforts for every new capability. Heritage industry, disruptors, and customers need to meet in the middle and codify modular open systems approach (MOSA) architectures that do not overspecify the system or burden it with unnecessary cost and complexity. This is an opportunity to learn from commercial aerospace, automotive, personal computing, and mobile phones, where the market has chosen its reference architectures and operating systems to the benefit of the partner ecosystem. This digital drive layer would allow the innovation at the top of the stack to drive the platforms at the bottom.

5. The application and analytics layer

The premium software sits at the top of the stack: swarm autonomy, dynamic targeting apps, and AI pilots, all orchestrated with human-in-the-loop command and control. Both venture capital and attention are currently concentrated in this layer. However, without the underlying infrastructure of the previous four layers, this software has nowhere to run.

The challenges and evolving solutions in procurement and investment

The transition to the future defense tech stack is currently being stalled by a fundamental mismatch in business models between the buyer and the builder. Defense customers often procure vertically integrated solutions tailored to specific problems, similar to bespoke, all-in-one solutions. However, the current installed base was designed in a very different tech time—for example, the F-35 was created over 20 years ago and is still in use today. At the moment, the defense industry collates the five layers into closed, proprietary systems to secure contracts. However, this approach is evolving as the industry starts to recognize that more modular architecture is needed, such as those used in MOSA.

That said, major gaps still exist within both procurement and investment:

— *The procurement trap:* National security customers largely adhere to program-centric operating models that favor integrated hardware and software products over discretely upgradable technology layers within an open architecture tech stack. This model has been necessary historically because customers wanted a complete solution and lacked the expertise and rules for procuring and integrating stand-alone software. Tech disruptors are often forced to vertically integrate—for example, selling a fleet of ready-to-deploy drones rather than the operating system that could power them all. As a result, innovation gets trapped within specific platforms rather than shared across the force.

— *The investment gap:* The flow of funding illustrates this imbalance. Private capital has surged into the top of the stack, with AI attracting $12 billion in investment in 2024 alone.[8] Venture capital investment totaled around $40 billion.[9] In the United States, the public sector largely funds defense-specific investments at the bottom of stack, with $179 billion requested for fiscal year 2026 and $141 billion enacted in fiscal year 2025.[10]

Even though there are challenges in both procurement and investment, there are signs of change driven by a new class of institutional and capital frameworks that have emerged over the past several years. For example, the NATO Innovation Fund deployed its first tranche of deep-tech capital in June 2024, explicitly targeting dual-use manufacturing and autonomous systems (such as ARX Robotics and Space Forge) that bypass legacy procurement cycles.[11] Simultaneously, the US Space Force's Commercial Space Strategy, released in April 2024, formally pivoted the service toward a hybrid architecture, mandating the integration of commercial solutions for tactical surveillance and data transport, rather than building government-owned defense networks.[12] Japan established the Defense Innovation Science and Technology Institute (DISTI) in October 2024 to accelerate the adoption of breakthrough dual-use technologies.[13]

These moves signal that the "middleware" crisis is being resolved by a fundamental rewiring of how Western defense accesses and scales commercial innovation—as is already happening in the space domain (see sidebar, "The orbiting bellwether: What low-Earth orbit can teach the muddy boots").

[8] Dale Swartz, Ryan Brukardt, and Karl Hujsak, "Creating a modernized defense technology frontier," McKinsey, February 12, 2025.
[9] This figure excludes defense-relevant hyperscaler investments; Pitchbook Defense Tech Index, accessed December 2025.
[10] "Defense budget overview: Fiscal year 2026 budget request," Office of Under Secretary of Defense, United States Government, July 2025; "H.R.I—An act to provide reconciliation pursuant to Title II of Hon. Con. Res. 14," Congress.gov, April 7, 2025; "FY25 NDAA resources," House of Armed Services Committee, 2024.
[11] "NATO Innovation Fund makes its first investment to secure the future of the alliance's 1 billion citizens," NIF, June 18, 2024.
[12] "US special force commercial space strategy," Department of Air Force, United States Government, April 2024.
[13] Stew Magnuson, "DSEI Japan News: New Japanese defense tech incubator looks to shape things up," *National Defense,* May 23, 2025.

Implications for the ecosystem

As the current tech stack evolves to support greater modularity, value pools will shift, necessitating a strategic pivot for every player in the defense ecosystem, including defense prime contractors, defense disruptors, nontraditional suppliers, governments, and investors. Each of these players will benefit from adapting their role. Early efforts to refocus procurement priorities (such as Germany's Software Defined Defense strategy, recent executive orders in the United States, and the Pentagon's recent memo on its AI strategy) show promise, but may risk falling short of ambition if industry and government stakeholders do not lean into both the letter and spirit guidance.[14]

[14] "Modernizing defense acquisition and spurring innovation in the defense industrial base," The White House, April 9, 2025; "Artificial intelligence strategy for the Department of War," United States Government, January 9, 2026.

The orbiting bellwether: What low-Earth orbit can teach the muddy boots

Ten years ago, the space domain was the exclusive province of the "exquisite monolith"—multibillion-dollar satellites that took up to a decade to design and build. Today, that architecture partly has been inverted. Some of the older exquisite equipment have been displaced, but ultimately it is the lowering of cost that has hugely increased the relevance and use of space.

The low-Earth orbit (LEO) landscape is now defined by a proliferated mesh of thousands of disposable nodes, driven by commercial disruptors and new government frameworks (exhibit). This transformation provides a potential road map for the terrestrial battlefield across three critical layers of the stack—layers 1, 3, and 5: commoditization, network dominance, and value migration:

— *Commoditization.* Launch costs have dropped by an order of magnitude, and the satellite "bus" has become a standardized commodity.[1] The strategic value has migrated away from the physical hull—now cheaper and replaceable—toward the capabilities it carries. This mirrors the necessary shift for terrestrial platforms, where disaggregation favors arrays of smaller, linked assets over single, high-value systems.

— *Network dominance.* As physical nodes have multiplied, the center of gravity has shifted to the network. Technologies such as space-based optical laser communications have become critical enablers, transforming isolated assets into a resilient, self-healing mesh. The power of the system no longer resides in the individual satellite but in the optical intersatellite links that allow data to flow dynamically above the fray.

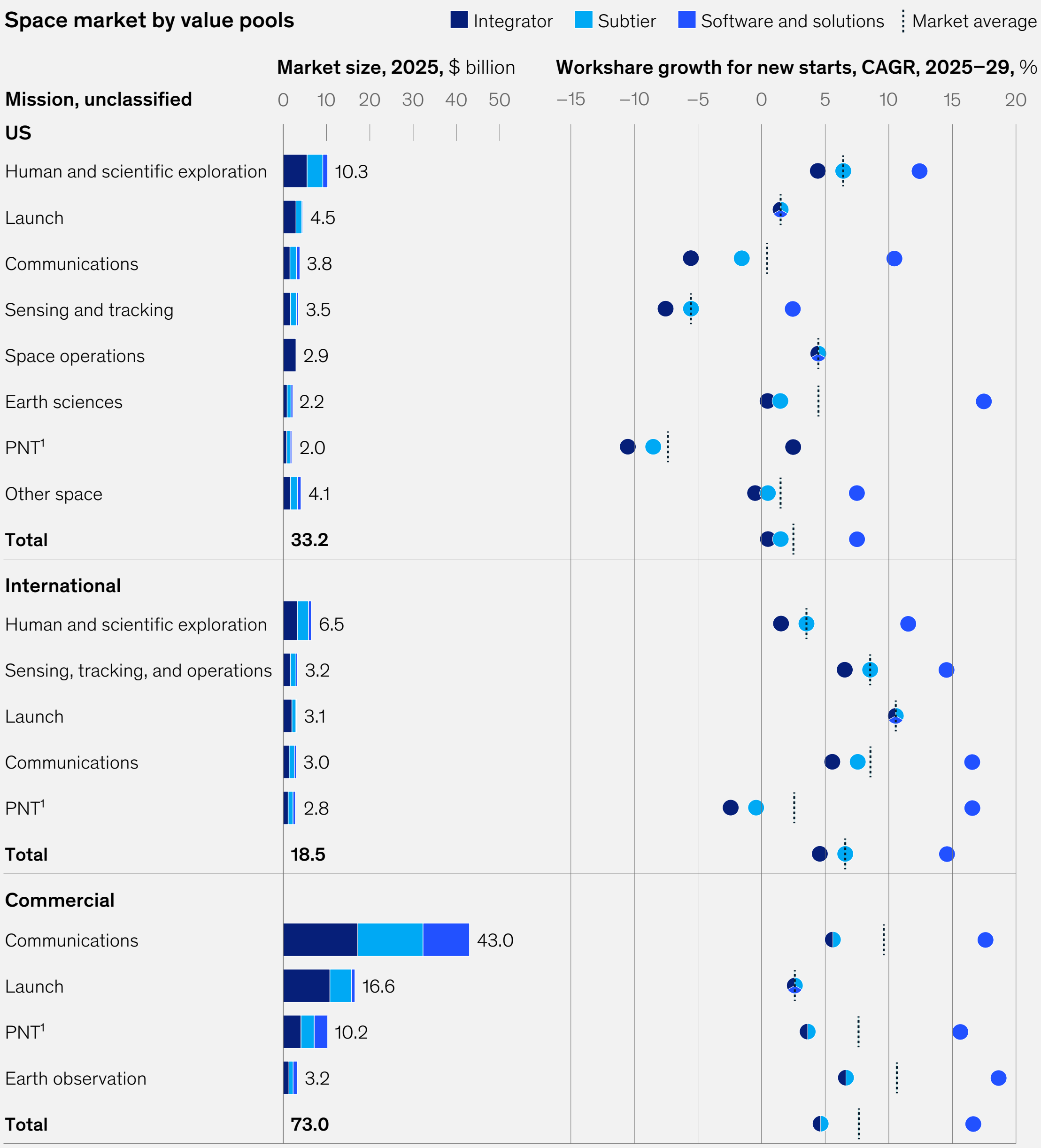
— *Value migration.* With infrastructure costs reduced, significant value has shifted to the data and analytics layer. The scaling of workloads—driven by AI and accessible application processing interfaces (APIs)—has turned orbit into a software-defined domain.

[1] Dr. Rolf Hager, "Software defined defense faster software development for the Bundeswehr with 'Platform42'," ES&T, March 19, 2024.

However, this shift has demonstrated one of the frictions in the future defense tech stack: Advanced space-based optical lasers handling vast data volumes now face acute computing power constraints, requiring significant upgrades to onboard processing to fully realize the software's potential.

Exhibit

Across space missions, workshare architecture shifts to software and solutions.



Note: Figures may not sum, because of rounding.
[1]Positioning, navigation, and timing.
Source: Defense strategy whitepapers; expert interviews; Stockholm International Peace Research Institute (SIPRI); US FY25 President's Budget Request; McKinsey European defense forecast; McKinsey future of space economy research; McKinsey satellite forecast

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Platform integrators (defense prime contractors)
The era of the "walled garden," where a single prime controls the entire vertical stack, is ending. As customers demand modularity, the defense primes that thrive may be those that transition from guarding closed architectures to curating open ones. A significant opportunity lies in the "digital retrofit." With a significant compute and connectivity gap across the installed base, the most important contracts of the next decade may not be building the next fighter jet, but upgrading the avionics and mission computers of the fourth- and fifth-generation fleets to host third-party applications. Examples include F-35 Block 4 compute upgrades, the M2 Bradley active protection system, the Eurofighter Tranche 5 with electronically scanned array (AESA) radar, and the United States Navy's Guided Missile Destroyer Modernization (DDG MOD) 2.0. Prior McKinsey analysis estimated that closing this computing gap for the United States would cost approximately $200 billion, which is on par with one year of total Pentagon defense procurement budget ($205 billion).[15]

The Pentagon under the current US administration has shown a willingness to work with nontraditional suppliers and challenge the primes' business-as-usual models.[16] Primes that seek to lock down these interfaces risk missing out on new opportunities, while those that build military "app stores" enabling tech stack, could secure a central position in the new ecosystem. The primes bring scale, engineering breadth and depth, integration capability, and supply chain management that will continue to be essential, yet they need to adapt to both changing customer demands and the emergence of new peers. Additionally, the economics of programs are shifting, with more external capital available for development through internal research and development (IRAD) and potentially higher gross margin capture.

Component scalers (defense disruptors and nontraditional suppliers)
Disruptors will pivot from selling stand-alone demonstrations to addressing the missing middle (layer 3, the transport mesh, and layer 4, the interoperability fabric). Rather than waiting for a government program of record, winning leading archetypes—such as Palantir and Starlink—are partnering to integrate their software into the legacy compute foundations and contested connectivity environments of today's forces. These partnerships could offer lessons for the C-suite: If an algorithm cannot run on a legacy hardware stack at the tactical edge, disconnected from the cloud, it may struggle to transition from compelling demonstrations to operationally relevant products.

Investors (public and private sector)
The current start-up model relies heavily on short-term R&D grants and venture capital to drive modernization, but this approach has a structural ceiling. While optimized for software margins and three-to-seven-year exit horizons, many private capital investors may be mismatched to the capital-intensive, ten-year timelines required to build solid rocket motor factories or advanced microelectronics foundries, for example.

The opportunity lies in bridging this gap by making industrial capacity an investable asset class. There are trillions of dollars in private infrastructure and private credit funds available, deterred by the binary risk profile of defense contracting.[17] The customer's role is to de-risk this long-term capital expenditure, moving beyond simple grants to tools such as loan guarantees and equipment financing that lower the costs of capital for hardware scale-up (for example, the US Office of Strategic Capital initiatives).

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[15] "Defense budget overview: United States Department of Defense fiscal year 2026 budget request," Office of the Under Secretary of Defense, United States Government, July 2025; "Defense budget materials—FY 2026," Office of the Secretary of War (Comptroller), United States Government, accessed January 2026.
[16] "Ensuring commercial cost-effective solutions in federal contracts," The White House, April 16, 2025; "Prioritizing warfighter in defense contracting," The White House, January 7, 2026.
[17] "JPMorganChase launches $1.5 trillion security and resilience initiative to boost critical industries," JPMorganChase, October 13, 2025.

This can provide investors and industry the revenue visibility needed to commit to at scale, multiyear capital investments. By creating investible production commitments, architects can unlock the deep industrial capacity that software investors will not fund.

The defense tech stack of the future represents a fundamental architectural shift from permanence to replenishable. The risk of inaction is not just technological, but structural: Investing in the capacity to rapidly produce such tech at scale is vital. If the ecosystem fails to address the missing middle—by fixing the industrial bottlenecks to build the platform and by constructing the digital infrastructure to connect it—Western defense organizations risk fielding the most sophisticated military in history that runs out of ammunition within the first week of conflict.

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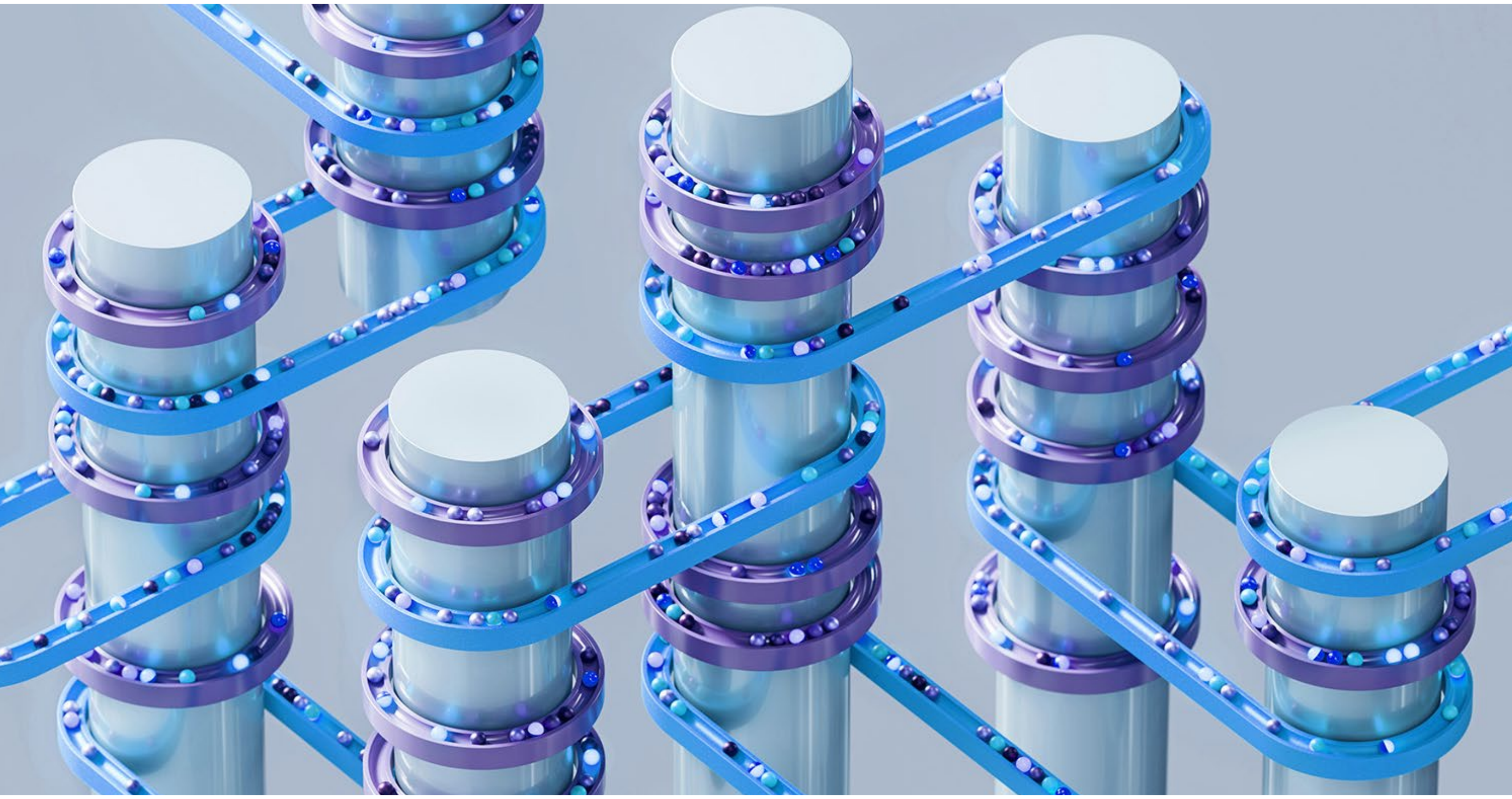
Aerospace & Defense Practice

Europe's €1 trillion challenge for flexibility and scale

Current European defense acquisition systems are no longer effective in the uncertain geopolitical landscape. Fundamental reform is needed for quick decisions, rapid deployment, and sustainable scale.

This article is a collaborative effort by David Chinn, Giacomo Gatto, Hugues Lavandier, Jonathan Dimson, and Kirk Rieckhoff, representing views from McKinsey's Aerospace & Defense Practice and the Public Sector Practice.



The global security environment is shifting at an unprecedented pace—faster than at any point since the end of the Cold War. To meet rising national security challenges, European governments have set ambitious plans and funding commitments. Between now and 2030, Europe will need to mobilize well over €1 trillion in defense acquisition to rebuild force readiness, modernize capabilities, and replenish stockpiles—a substantial share of which will flow through defense acquisition systems.[1]

Yet Europe's defense acquisition systems are not keeping pace with this urgency. While new technologies are emerging and operational lessons are being rapidly absorbed from ongoing conflicts, a majority of major European defense programs continue to run late and over budget. Closing this gap will require reforms to planning, requirements-setting, and procurement processes that better reflect the speed and uncertainty of today's security environment.

Some defense ministries have begun to respond, but efforts remain uneven and incremental. Outside Europe, the Pentagon is implementing reforms to transform the traditional acquisition approach into a "Warfighting Acquisition System."[2] These reforms focus on priorities such as speed, commercial solutions, accountability, and a greater tolerance for measured acquisition risk. In Europe, reforms so far have been more targeted, ranging from the UK's Defence Reform program, which includes a new National Armaments Director, to Germany's Planning and Procurement Acceleration Act, Italy's Defence Procurement Forum, and Spain's new industrial and technological plan for security and defense.[3]

These European initiatives highlight the need for a clearer, repeatable model for how acquisition should work in practice. Because acquisition is delivered by a complex system, isolated changes rarely stick—reform needs an integrated blueprint that links strategy, industry, contracting, and delivery.

This article outlines eight principles for European countries to adopt a more flexible acquisition system—able to respond quickly to future threats at speed and scale, and at sustainable cost (see sidebar, "What is defense acquisition?").

What is defense acquisition?

Acquisition refers to the end-to-end set of processes, governance, and institutions that translate defense policy into usable military capability—from capability planning (across the full DOTMLPF-P spectrum: doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy), through requirements-setting, program design, tendering and contracting, and into production, fielding, and through-life sustainment. This definition is consistent with the Pentagon approach, which treats acquisition as an integrated system spanning capability development, requirements, resourcing, and life cycle management rather than a narrow procurement function.

[1] "Cutting Europe's €800 billion Gordian knot: Five catalysts to transform defense," McKinsey, November 13, 2025.
[2] "Transforming the defense acquisition system into the Warfighting Acquisition System," Secretary of War, United States Government, November 7, 2025.
[3] "The Strategic Defence Review 2025—Making Britain safer: Secure at home, strong abroad," UK Ministry of Defence, July 8, 2025; "The German Bundestag passes a law for faster procurement," German Federal Ministry of Defence, January 15, 2026; "Italy launches the first Defence Procurement Forum," Decode39, September 17, 2025; "Government of Spain presents the Industrial and Technological Plan for Security and Defence," La Moncloa, April 22, 2022.

Breaking with the past

There are four core goals of acquisition reform to improve: speed (from decision to fielded capability), scalability (the ability to surge and sustain production and readiness), cost management (life cycle affordability and predictable unit costs), and innovation (rapid adoption of new technologies and continuous improvement based on operational feedback).

Across NATO countries, efforts over the past decades to adapt defense acquisition have not always delivered lasting change. Change is not easy: Navigating complex government bureaucracies, making do with scarce funding, and managing competing incentives all present challenges. These have led to delays and cost overruns, making it harder to meet changing military needs or adapt to technological developments. To achieve success in improving acquisition, previous shortcomings must become lessons. At the same time, humility is in order—past efforts were led by talented teams with bold ambitions; they discovered that this was truly a difficult challenge and that it was probably unwise to expect perfect solutions that can solve all issues.

Other public sector initiatives saw comparable challenges: Nearly 80 percent of government transformations do not fully achieve their intended outcome, and over 80 percent of public sector IT projects overrun their schedules.[4] However, applying established best practices can substantially improve these odds and, in a changed environment, different emphasis can lead to different outcomes.

The challenges European acquisition systems face today have three main outcomes:

— *Speed:* Acquisition cycles for major capabilities are both objectively very long and often overrun. Well over half of major defense programs in Europe exceed deadlines, typically by 20 to 50 percent, while the average time to contract is estimated to range between two to four years.[5] Accountability can be fragmented, with no single owner to make decisive trade-offs between speed and performance or costs, which can slow progress across programs.

— *Cost:* Over 50 percent of major acquisition projects overspend their original budgets by around 20 to 40 percent.[6]

— *Relevance:* Even if programs are delivered on time and within budget, they can be obsolete upon arrival. The time from identifying a need to the arrival of the capability can be longer than battlefield innovation cycles, making the acquired systems redundant.[7] This can result in a widening gap between strategic ambition and operational effectiveness. As a result, "bridging spend" replacement may be needed to sustain legacy capabilities beyond their planned lifecycle.[8]

This points to the need for a radical shift in Europe—one that addresses the root causes of these shortcomings rather than treating the symptoms. Without fundamental change, any reform effort will continue to fall short, leaving nations ill-prepared to face evolving threats.

[4] "Transforming government in a new era," McKinsey, September 14, 2022; "Unlocking the potential of public sector IT projects," McKinsey, July 5, 2022.
[5] Figures are aggregated from national audit reports and reviews (UK NAO, Public Accounts Committee; German MoD Armament Reports; French DGA data) and research by think tanks (RAND Europe, SIPRI, OSW).
[6] Figures are aggregated from national audit reports and reviews (UK NAO, Public Accounts Committee; German MoD Armament Reports; French DGA data) and research by think tanks (RAND Europe, SIPRI, OSW).
[7] "Defence capabilities–delivering what was promised," Ministry of Defence, National Audit Office, United Kingdom Government, March 18, 2020.
[8] Bridging spend refers to an unbudgeted portion of money that is required to maintain legacy capabilities in operations while waiting for their delayed replacements.

Building an acquisition system that is fit for the future

Rapidly introducing an acquisition system that is flexible enough to respond quickly to future challenges and threats requires more than small tweaks—fundamental restructuring is essential.

Reform should be designed around militarily relevant outcomes, not just process compliance, and should manage the trade-offs between space of speed, cost, and performance through the life cycle. Done well, it can create a repeatable pathway from strategic intent to fielded, supportable capability—fast enough to matter, and scalable enough to deter.

Eight design principles can help drive success:

1. *Creating multispeed acquisition pathways:* This can be achieved by introducing tailored approaches and processes based on the capability being acquired (for example, survivable, attritable, or consumable hard- or software), starting from recognition of the need, through planning and budgeting, and onto procurement.

2. *Deploying spiral development to upgrade capabilities rapidly:* An initial capability can be delivered quickly. Afterward, software and hardware can be continually updated (software in very short cycles with quick testing, and hardware in longer cycles and in modules) to adopt new technologies and adapt to battlefield lessons.

3. *Transforming the industrial base for productivity and strategic needs:* This starts with clear sovereign capability decisions—explicit, long-term choices about which capabilities and technologies must be national or assured (where to invest, what to protect, and which suppliers and partners to rely on). Building on that, governments could drive scale, productivity, and resilience by concentrating demand on priority areas. Capabilities that are not strategically differentiating can be sourced through military off-the-shelf (MOTS) or commercial off-the-shelf (COTS) solutions to reduce cost and accelerate delivery.

4. *Aligning incentives with industry:* Aligning industry's incentives with industrial strategy objectives can help improve acquisition outcomes. Examples include stage-gated funding to encourage innovative solutions, stronger accountability for timely delivery, longer-term contracts to enable lower-cost funding for industrial scale-up, and risk- and reward-sharing agreements.

5. *Balancing competition with collaboration:* Overlapping efforts risk delays (due to customer overload) and duplicated costs, while increased competition can incentivize performance and improve resilience. Industrial policy can support better decision-making between using off-the-shelf competitive solutions, developing sovereign capabilities and international collaboration.

6. *Aligning design, production, and sustainment contracts to optimize downstream outcomes, and using performance-based measures:* This can be achieved by designing commercial mechanisms (at tender and at contract) that reflect the interlinkages between design, production, and sustainment, and incentivize reduced life cycle cost.

7. *Developing expertise and ownership:* Acquisition excellence depends on expertise and close integration between military customers and procurement. Generally, there is a positive return on investing in technical resources in defense ministries and the military in program management and procurement functions, as well as in skills in risk, finance, legal, and commercial analytics.

8. *Spending more on less, but consistently:* In an attempt to have full-spectrum forces, many countries spread their investments widely. Rather, they could make clear sovereign capability investment choices, backed by multiyear, stable funding, economic minimum-order quantities, and ongoing spiral development. Budgets could carry across years to prevent over- or undersupply, and to streamline approval processes. This would imply a more coordinated approach with allies to avoid duplication and ensure that all can access the needed capabilities.

These proposed principles are not independent fixes; they are interdependent elements of a modern defense acquisition strategy. Reform can be hard precisely because acquisition is a system: Progress in one area can be constrained by bottlenecks elsewhere, and there is no single silver bullet. Even so, each principle on its own can deliver meaningful improvement—but the largest gains come when they are advanced in parallel, so that the effects reinforce one another and compound over time.

Three equipment archetypes

The most important consideration is that a very broad range of very different capabilities is needed for operational relevance. It is difficult (perhaps impossible) to have a single acquisition system that works effectively in the same way for acquiring munitions, a fighter jet, or a piece of standardized software.

This is because there are inherent differences in the life cycle, risk, and cost of equipment. It is increasingly common to think about military equipment in three archetypes: survivable (durable, mission-critical platforms such as fighter jets, often crewed); attritable (reusable but may be lost in battle, such as intelligence, surveillance, and reconnaissance [ISR] drones, almost always uncrewed); and disposable (one-time use products such as one-way attack drones) (exhibit). An additional dimension to consider is the distinction between software and hardware, with software developed and improved in a fundamentally different and much faster way than hardware.

A multispeed procurement framework works most effectively when it accounts for these differences. Each capability type has distinct life cycles, risks, and integration needs and should therefore be approached differently. This approach is already being applied in the United States through Rapid Capabilities Offices and, more recently, the introduction of Direct Reporting Portfolio Manager (DRPM) roles under the Pentagon's Deputy Secretary, which deliberately separate fast, risk-tolerant pathways from traditional major-platform acquisition.[9]

Each capability type should therefore be approached differently. That does not mean creating a fragmented, six-stream system: These archetypes can be grouped into three practical pathways—one long-term route for complex, survivable platforms, and two streamlined routes for rapidly evolving and disposable capabilities.

Adapting the acquisition process

We have identified potential improvement levers that could be used within current European acquisition systems, while laying the groundwork for longer-term changes. These can be divided into five categories of action: strategic, fiscal, contractual, organizational, and talent.

Strategic

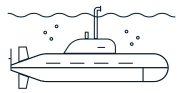
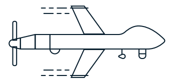
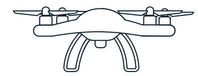
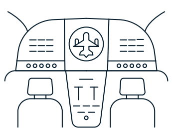
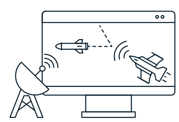
Establishing a clear strategic path: Adapting the acquisition process is a task that requires setting priorities and engaging with stakeholders across government and industry. The process needs to be endorsed by senior leadership and could provide the rationale for increasing the focus on acquisition speed. It could

[9] "Rapid Capabilities Office," US Air Force, November 2020; Aaron Mehta, "Pentagon creates new role managing B-21, F-47, AF1, ICBM programs," Breaking Defense, November 19, 2025.

Exhibit

Military equipment can be classified into three archetypes.

Platforms and services procurement requirements by archetype

	Survivable	Attritable	Disposable
Hardware			
Description	Durable, mission-critical platforms designed for use in hostile environments	Reusable and short-lived systems	One-time use, low-cost products made at high production rates
Examples	Fighter jets, submarines, air defense systems, main battle tanks, naval warships	Drones, autonomous ground vehicles, electronic warfare decoys, radar systems, comms systems, loyal wingman	Decoys, man-portable reconnaissance drones, single-use surveillance sensors, artillery shells
Procurement requirements	Long-term contract, simple-standardized base requirements, adaptable	Balance between speed and cost-control, with ability for front line to request rapid upgrades	Priority on rapid production and affordability
Life cycle	10+ years	5–10 years	Weeks to months
Number of units	Single digits to hundreds	Hundreds to thousands	Thousands or more
Software			
Description	Mission-critical, secure and highly survivable for the most advanced platforms	Agile software supporting attributable platforms that are re-usable but cost-sensitive	Rapid developed software for temporary or one-time operational needs
Examples	Command and control systems, avionics software, cyber defence	Battlefield management, drone software, electronic warfare software updates	Rapid-deploy surveillance scripts, expendable communication protocols
Procurement requirements	Requires stringent testing, lifecycle management and security control, with ability to iterate and upgrade	Agile procurement enabling constant upgrading	Priority on immediate deployment and rapid refresh cycles
Life cycle	2+ years	Months to 2 years	Days to weeks
Number of units	Single digits to tens	Dependent on updates	As required

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drive engagement with industry to clearly signal objectives, and become the compass that orients stakeholders, resists potential inertia, and avoids using legacy processes.

Identifying constraints: This could identify the key barriers blocking the adaptation of the acquisition system. Although potentially a long process, addressing these constraints is essential to fundamentally restructuring acquisition.

Creating a capability road map: This could highlight the capabilities needed in the survivable, attritable, and disposable platforms over the coming years. The existing list of priorities could be categorized, highlighting future requirements and helping identify which parts of the industry are of strategic importance and which capabilities can be bought off the shelf. The capability road map could therefore be used to create an industrial strategy and an acquisition plan.

Providing leadership at the highest possible level: Strong leadership is needed to act quickly and boldly, including increasing acquisition risk to decrease operational risk and prevent loss of momentum. This could include creating a small, high-velocity senior leadership forum to tackle only the toughest crosscutting acquisition issues that cannot be resolved at lower levels. By agreeing on decisions quickly—and aligning on how they will be communicated, resourced, and reinforced—leaders could remove bottlenecks and accelerate adoption.

Working with industry: Industry could be encouraged to take on more of the technology risk in development, a larger share of the cost of innovation, and to bridge the gap between academia, research, and full-scale production.

Fiscal

Assessing the impact of investments: European governments could assess the outcome of different investments across the procurement life cycle to ensure they meet priority missions. This could become a repeatable process embedded in standard budgeting cycles. Budgeting could also allow funding to be rephased across years—allowing programs to be able to "veer and haul" more easily as delivery realities change, pulling spend forward to scale what works and pushing it back when risk remains. Carryover and rapid reallocation within clear guardrails could also reduce stop-start production and avoid end-of-year distortions.

Flexible, targeted funding instruments—such as the European Union's Act in Support of Ammunition Production (ASAP)—show what veer and haul can look like in practice: shifting money quickly to relieve supply chain bottlenecks and expanding ammunition and missile production capacity, rather than waiting for the next annual budget cycle.[10]

Contractual

Rethinking existing contracts: All programs could be assessed against new priorities and balanced against the real cost (time and money) of pausing current procurement processes. This could help prioritize contracts with the greatest impact.

Restructuring future contracts: Principles for contracting could be reframed to prioritize speed of delivery and spiral development. These guidelines could consider the time to deliver the minimum viable product for frontline trials, which could enable subsequent contracts to be awarded for incremental improvements.

Encouraging wider participation: Nontraditional entry points into the supply chain could be considered, including at the component level, to allow for a wider range of suppliers and create a more dynamic landscape. Multitrack acquisition approaches could also play a role, incorporating third-party surge manufacturing capacity. Lessons from the commercial industry could be applied, such as rolling out modular, open system approaches, to increase flexibility and adaptability.

Stabilizing the demand signal: Contract length and size could be reconsidered to give greater predictability and confidence in future demand, while specific, measurable outcomes could be laid out to ensure accountability and progress.

[10] "ASAP | Boosting defence production," European Commission, 2025.

European examples include Germany's framework contract for 155mm artillery shells worth up to €8.5 billion;[11] Spain's Directorate General of Armament and Material's (DGAM) placement of four contracts for 100 Airbus helicopters under its National Helicopter Plan;[12] and the United Kingdom's £1.5 billion commitment to build at least six munitions and energetics factories alongside procurement of up to 7,000 long-range assets.[13]

Organizational

Reviewing the full organizational structure: A multispeed system could be enabled by adapting organizational structures. Potential options include:

— *Splitting the organization:* Parts of the existing acquisition organization could be redirected to focus on rapid capability development to enable new, streamlined procurement methods.

— *Developing a new organization:* An entirely new organization could be created to support streamlined delivery.

— *Adapting other organizations:* The range of organizations already empowered to make rapid acquisitions could be repurposed—considering when they could be condensed into a single structure with greater authority and budget to support full acquisition and reduce the need for small purchases for trials and development.

Rethinking accountability: Decision-makers could be placed close to execution and empowered to take calculated risks to rapidly deliver innovative solutions. Accountable officials could be given the authority to act decisively, including to make trade-offs between cost, performance, and time, while program leaders could be given the control, expertise, and authority to direct program outcomes.

Clarifying decision rights to accelerate delivery: Using a lightweight decision-rights framework (for example, DARE—decision-maker, advisers, recommenders, executors) could make explicit who decides, who advises, and who executes for each key trade-off. When paired with active reinforcement—correcting misaligned behaviors in real time and communicating decisions with a clear execution runway—bottlenecks could be reduced and follow-through accelerated.

Embedding contracting officers within program teams: These officers could be positioned alongside end users and experts, such as engineers, to assess collaboration and fast feedback loops.

Streamlining the approvals process to accelerate delivery: Program teams could engage early with decision-makers to align on the evidence required for approvals, driving momentum from the start. Allowances would need to be made for potential delays to programs that require ministerial approvals.

Defining and routinely reviewing a small set of outcome metrics: These could include time-to-contract and time-to-field, readiness and availability, unit and life cycle cost, and delivery reliability, creating a fact base to steer resourcing decisions and accelerate trade-offs.

Organizational reforms are increasingly aimed at driving stronger decision-making—for example, the United Kingdom's defense management reforms strengthen the center (strategic HQ) while creating a

[11] "Largest order in company history: Rheinmetall receives framework contract for 155mm artillery ammunition for the Bundeswehr with a total gross value of up to €8.5 billion," Rheinmetall, June 20, 2024.
[12] "Spanish Ministry of Defence orders 100 Airbus helicopters," Airbus, December 18, 2025.
[13] "New munitions factories and long-range weapons to back nearly 2000 jobs under Strategic Defence Review," Gov.uk., June 1, 2025.

single armaments leadership function to drive end-to-end accountability for the equipment pipeline.[14] Similarly, Australia's planned delivery-agency model is intended to consolidate acquisition and delivery so program owners have clearer authority.[15]

Talent

Defining the acquisition talent model and the skills required to deliver outcomes at pace: This could help establish sets of job families with associated skills frameworks (for example, program leadership, systems engineering and integration, commercial and contracting, risk and assurance, and digital and software delivery) with clear competency standards, training pathways, and—where relevant—accreditation.

Reassessing competencies: Reskilling and upskilling training could be reviewed in light of creating a competency-based approach, helping ensure acquisition teams are prepared to deliver outcomes quickly.

Building depth and continuity in the roles that matter most: This could enable longer tenures for program leaders and critical specialists to match delivery time frames, while also creating standing expert pools (such as for contract design, test and evaluation, and sustainment analytics) that programs can draw on to strengthen decision quality and accountability across the life cycle.

Aligning incentives and learning to operationalize results, not process compliance: Such an approach could tie performance management and progression to a smaller set of outcome KPIs (for example, time-to-field, availability and readiness, and life cycle cost control) and institutionalize what works through playbooks, reusable templates, and postprogram reviews.

The Pentagon's 2025 Acquisition Transformation Strategy includes explicit workforce measures—such as transitioning the Defense Acquisition University into a "Warfighting Acquisition University" with more immersive, scenario-based training, and longer tenures for key acquisition leaders to strengthen ownership and accountability.[16]

Now is the time for change

An increasing trend of global insecurity over the past few decades has now become an undeniable reality. The new security environment calls for urgent action from democracies around the world, and perhaps most pressingly, from Europe. Yet this is not simply a matter of providing more money; it is about fundamentally adapting defense acquisition systems to turn that money into defense capabilities.

The acquisition process can no longer be incremental; it needs to be flexible, adaptive, and able to respond quickly under pressure. The challenges are not insurmountable, but they must be dealt with now—and boldly.

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[14] John Healey, "Defence reform statement," Secretary of State of Defence, UK Parliament, April 1, 2025.
[15] "Defence reform; ADF monitoring PLA-N task group," Australian Government, December 1, 2025.
[16] "Acquisition Transformation Strategy," Department of War, United States Government, November 7, 2025.

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Aerospace & Defense Practice

Mike Schoellhorn on uniting European defense through scaled leadership and collaboration

Europe can tackle fragmentation by collaborating on early tech maturation, practical approaches, and a winning team mindset, while executing on time, at pace, and at sustainable cost.

In this interview, Mike Schoellhorn, CEO of Airbus Defence and Space, talks to McKinsey senior partner and coleader of the Aerospace & Defense Practice, Hugues Lavandier. Having initially been in the German military, Schoellhorn built a career focused on production efficiency and digital transformation. He joined Airbus as COO in 2019, before being appointed the CEO of Airbus Defence and Space in July 2021.

With rapid changes in technology and the shifting geopolitical landscape affecting the defense industry, and the increased importance placed on national security in Europe, Schoellhorn is well placed to discuss what he sees as potential solutions to the challenges facing the European defense and aerospace industry. He elaborates on the role that Airbus Defence and Space plays in this, and how to lead through turbulent times.

The conversation had been edited for clarity.

Hugues Lavandier: The past few years have seen quite a change in the European defense industry. Looking at industrial cooperation and major programs in Europe, what does successful collaboration look like for you? What is the key to reducing fragmentation?

Mike Schoellhorn: I'll start with the problem definition as I see it. I think fragmentation is at the core of Europe's challenges. It's well known that Europe has, on average, five times as many major systems—such as jet aircraft, transport aircraft, tanks, or ships—than the United States. But Europeans have, at least until recently, around only one-third of the US defense budget. Multiply that, and you get a "dilution factor" of 15. That doesn't even take into account that a lot of the European budget still goes into the United States. It's a virtuous circle for the US defense industry, which penalizes us in Europe.

[When addressing fragmentation,] the first thing that comes to mind is collaborative programs. I pick the Eurofighter Typhoon as an example. The Eurofighter is still the most successful fighter aircraft in Europe, of European design. This is despite the fact that it was neglected for about ten years by most countries, and there was a shortage of orders. Now that has changed. That's a good example of how collaboration can work. The A400, I would say, was semi-successful. It's now a great aircraft; it's the backbone of European airlift, but it took a long time to get there, and we lost a lot of money over it.

I think that just coming together and pooling demand is not good enough. What you need is a reasonable and practical approach to requirements. The A400M was the opposite. It was stacking up everybody's requirements, even conflicting ones. On top of that, another success factor was not sufficiently in place, which is early-enough technology maturation. You need to have these things in place to make it a successful program when countries come together.

And last, you need team spirit. You need to have the notion of "the best team"—yes, good leadership is required, but everybody needs to feel part of a winning team. Not only the primes, but also the suppliers, the start-ups, and the SMEs [small and medium-size enterprises]. They all need to feel their part of success in this. That can offset the scale disadvantage that we have. The scale disadvantage and the money per platform mean that you are at a technology disadvantage, because you don't have enough money to develop all the very leading-edge technologies.

After collaborative programs, comes creating a European champion, like we're trying to do with [Project] Bromo in the space sector. I think that is the pinnacle. It will not be possible in all areas, but where Europeans' ability to design and our decision-making is affected, I think we need a champion.

Hugues Lavandier: I'd like to jump to technology and innovation in defense. There are a lot of buzzwords, such as quantum, drones, AI, and ISR [intelligence, surveillance, and reconnaissance]. How do you think about prioritizing those technologies for Airbus, and why?

Mike Schoellhorn: What we witness in recent conflicts—which are also driven largely by the steep advancement of technology—is that hardware and platforms matter. But, at the end of the day, you win because of decision superiority, or what could be called the best sensor-to-shooter capability.

You need to be able to orchestrate a whole set of assets—assets that sense, compute, can deliver an effect, and assess: the so-called OODA [observe, orient, decide, act] loop that needs to be mastered against threats, cyberattacks, and in electronic warfare. But you need the ability to make that better than the adversary, and that's where AI comes in. It helps you aggregate the sensor information faster and to reason better. It helps you be more robust against spoofing and other ways of deception. Quantum will become more and more a part of this, too, because it can help you be successful in your own encryption or in decrypting the other side.

All this comes together and will upscale what has always been the key to success in military battle: the effective mastering of the sensor-to-shooter chain. Platforms will still matter, because they are the embodiment of a lot of this. They need to have compute power, they need to be able to connect, and they need to deliver the effect. But platforms are not the only thing anymore; you need to master the whole architecture.

Hugues Lavandier: With new technologies and innovation, a new form of talent comes. How is Airbus acquiring this talent, growing it, and retaining it?

Mike Schoellhorn: First of all, many of the people who have made Airbus successful will still be required. We still need the best engineers and the best scientists. We still need people with pioneering spirits who want to do new things and break through existing borders of what is deemed feasible. That will still be very important, and it attracts a lot of people.

The other thing we offer, especially in Airbus Defence and Space, is purpose. I think we combine all this technology drive, all this spirit for innovation, with something that matters for Europe more than ever: We provide people with the opportunity to create a bright future and protect our way of life and our children's way of life. This has attracted many more women than in the past.

Then there are the new start-ups—the defense tech guys who work differently and faster. At Airbus Defence and Space, we have our own AI clusters in which we work in similar ways. Yes, we are a bigger company, probably with more governance, but we find ways of insulating our teams from that. I push a lot for collaboration with these start-ups, so you get the best of both worlds: You have the prime and the architecture point of view, you have all the muscle that Airbus has, but you also interface with these young, wild start-ups—and it's a lot of fun.

Hugues Lavandier: If we look at the European NATO defense budget, which was about $200 billion in 2016 and $450 billion in 2024, it's reasonable to think it could be $800 billion by 2028. How does that change the way Airbus Defence and Space looks at future defense requirements, where growth will come from, and what the biggest unlock is to serve this market?

Mike Schoellhorn: I'm an ex-military guy who saw in the mid-1990s how quickly we dived into the peace dividend, and how defense budgets eroded. However, the Ukraine war has turned this around. We're seeing that reflected in Airbus Defence and Space's order intake. We have had a book-to-bill ratio of 1.4 times or greater over the last three or four years. We already have accumulated a large order intake that we need to execute and deliver on, and with it comes responsibility.

We see more coming, especially with the ReArm Europe Plan, and with countries like Germany that have doubled down. At Airbus Defence and Space, we're obviously well positioned in Germany. Across the board, we're seeing growth rates in everything that I would call command and control. For example, air defense solutions or battle management systems are not our biggest areas, but they are seeing the biggest growth, which I think will continue because that's where the nerve center really is.

We see very healthy growth in our air power division that makes all the aircraft. Orders for fighter jets and Eurofighters have accelerated significantly, so we're doubling the build rate and might have to triple it. We're seeing growth in transport a little less; it's still healthy, but we need to work on the future of the A400 and what comes after that.

We see a lot of growth in tankers, because to defend the eastern flank of NATO, aircraft need to stay in the air longer, and therefore they need tankers. That's where we have a role to play as we have a unique asset with the MRTT [multirole tanker transport], and its further development, the MRTT-Plus.

But I also see this growth in space, maybe only recently in the last one-and-a-half to two years. Space is really booming. We have been very successful in space, as recently we have been working on a bigger alliance in Europe with Leonardo and Thales [on Project Bromo].

The ability to unlock the growing demand is having the right technology. You need to be able to convince your customers that not only can you build this, but you can build it on time, because time is much more of the essence these days. Some countries are saying,"We need it by 2029, or we don't need it at all." You need to ensure that you have the technology that meets the customer's needs, and you need to be cost-competitive. There is a lot of competition still, with the United States wanting to tap into the big, growing European funds.

I think we're seeing two things that will be decisive in the future. First is open architectures—the ability to update your systems; I'm not going to say in real time, but very quickly. And then you need to be able to prove that your product has worked in battle and that it really can do the job with the armed forces. I think this is the difference from five years ago.

Hugues Lavandier: How do you think about multidomain connectivity and interactions, and the role that Airbus plays with unmanned systems?

Mike Schoellhorn: To a degree, multidomain has always existed. Now, with hyperconnectivity and the need to speed up the OODA loop, it becomes even more relevant. As a battle leader, you have to make a decision: Which is the right asset to fight my adversary? Maybe it's not the closest, maybe it's not what usually would be the case, maybe it's not the tank that is right here, but maybe it's a ship that can send a missile. The ability to connect us all is key. At the same time, it's quite a daunting challenge because the different branches of the armed forces have different standards, and everybody's fighting for their influence. Even the United States has struggled in its multiple attempts to implement real multidomain capabilities.

There are a lot of things that need to be overcome, but they will happen. Multidomain will come in steps and waves. I see it happening in the domain that we are active in, the somewhat artificially defined dividing line between air and space, which is only a human invention, at 80 or 100 kilometers, depending on whether you're American or European. That line will get dissolved so that it becomes a continuum between air and space. It's already showing in early developments.

Hugues Lavandier: You have been in the German military, you have had leadership positions outside of Airbus, you have been its COO, and now you are the CEO of Airbus Defence and Space. How has this variety of experiences shaped the way you lead the organization today?

Mike Schoellhorn: Like everyone else, I'm a product of my experiences and the things that I've done in my life. I feel privileged with my current role; it feels like the coming together of almost everything I've done before.

I was a military aviator, and if there was something that I took away as a mission's success, it was the team—where everybody is fighting for a cause and is ready to go to extremely high risks for it. The team is everything; you can't do much as a sole fighter. The cohesion in the team is key to the success of the mission—maybe even more important than technology, although that is very important as well.

The importance of the team is a deep belief for me and one I try to convey to my customers. I need to show that I understand their missions and I know what they go through. It's my responsibility to equip them with the best things I possibly can. And that—this is an important message in our company—we're not only doing this for money; we're doing it for something bigger.

My industrial experience started in the automotive industry, which was a very good operational school. I was opening, building, and closing plants. I faced many crises where a quick reaction was needed. Anticipating and embracing change, even though it might be negative change, has to be there. If you just sit and wait and hope it's going to get better, you're going to get wiped out. Competitiveness is at the core of the automotive industry. I was lucky enough to be involved in the early days of automated driving, something that helps me now when we talk about automation and autonomy in aviation.

I joined Airbus as the COO of Airbus Commercial. That helped me to get accustomed to the aerospace industry, to build a network in the industry, to understand Airbus and its ways of doing things, which sometimes are not intuitive. But they make a lot of sense once you understand the European DNA that Airbus has. So, putting all of this together, when my board asked me if I wanted to be the CEO of Airbus Defence and Space, it felt like a natural extension of everything I've done.

Hugues Lavandier: You have been the CEO of Airbus Defence and Space for four years, and the industry and the organization have gone through a lot of changes. What is your opinion about what it takes to lead an organization like this to go through the next S-curve?

Mike Schoellhorn: What I have experienced is that you need a lot of humility and an understanding of the specific industry, because it's very different from other industries I've worked in. It has extremely long cycles, which are now accelerating, but they're still long. It has a very distinct procurement process that you have to respect. You always have the notion that this is not just a normal business, because, in the end, fighters' lives depend on you doing a good job. I think this is where leadership starts, as you have to recognize that and convey it to your team. When you get pressure from your board asking why you can't get better results, you need to put it in perspective. Money is important, but it's not everything.

Then there is the notion of change. If we look at the changes that have happened since I took over in mid-2021: the Ukraine war, geopolitical disruptions, questions about the future of Greenland and Taiwan, and the war in the Middle East. What I try to do is to convey two things at the same time, which sounds counterintuitive. You need to embrace the change, even though it's sometimes not what people like. People like stability; they don't like change. But leaders at least have to anticipate the change, embrace it, and turn it into something positive.

You also need to give confidence to your people so that they don't despair. People are nervous these days—not only in my company, but in society. It feels like everybody is on the edge. You need to give them the idea that you know what is going on, and you know what you're going to do about it. And then focus on execution. The best strategy and the best vision mean nothing if you can't execute.

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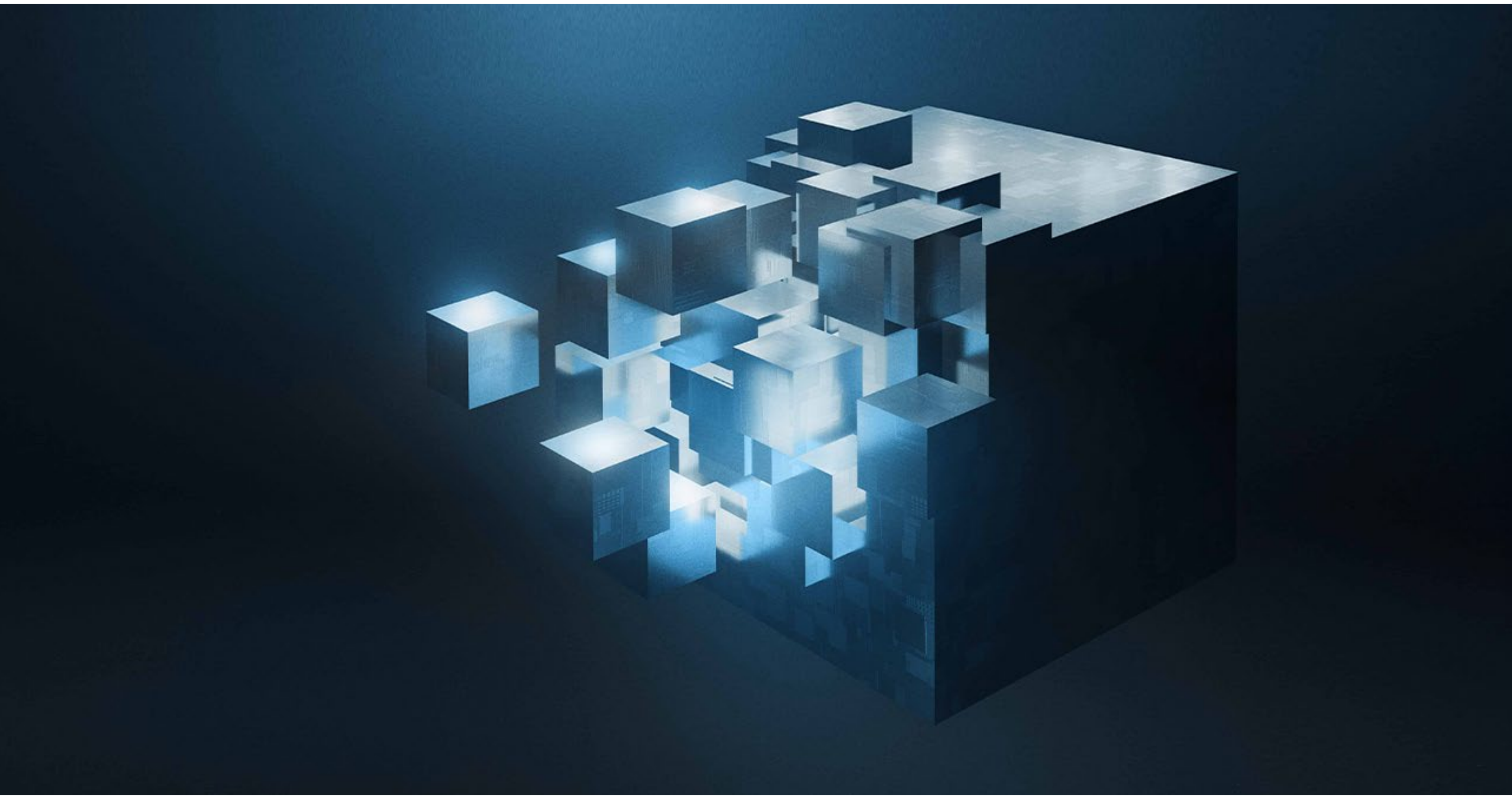
Aerospace & Defense Practice

Opportunities through consolidation in the European defense industry

Supply chain consolidation could unlock €9 billion in annual run-rate cost synergies, while boosting interoperability and strategic resilience.

by Hugues Lavandier, Jakob Stöber, and Rafael Ocejo
with Katharina Wagner



In recent years, Europe has taken significant steps to strengthen its defense capacity, driven by higher spending, new procurement programs, and a renewed focus on industrial readiness. By 2030, Europe's NATO members are projected to spend €800 billion on defense—an increase of €300 billion from 2025—with equipment spending alone nearly doubling.[1]

However, Europe's defense industry remains highly fragmented, limiting the ability to optimize spending.[2] The proliferation of duplicative systems has resulted in less efficiency, making it difficult to deliver the speed, affordability, interoperability, and technological advancement required for rearmament at scale.[3] Without sufficient expansion and modernization, much of the required scale-up could shift to non-European suppliers—risking the long-term stability of the defense industrial base and reducing the ability for Europe to achieve strategic resilience while partnering with allies.

At the platform level, joint cooperative programs such as the Future Combat Air System (FCAS/SCAF),[4] Main Ground Combat System (MGCS),[5] and Eurodrone[6] have aimed to address these issues.[7] However, pan-European collaboration remains highly complex,[8] requiring broad political consensus and extensive cooperation—challenges compounded by considerations such as national sovereignty, local employment, industrial competitiveness, and national programs.[9]

A practical path forward: Supply chain consolidation

Fragmentation is not limited to major platforms; it extends throughout the entire defense industrial supply chain (Exhibit 1). Given the challenges of consolidating at the platform level, the greatest short-term potential could lie in supply chain consolidation—an area where private capital and other private actors can play a central role.

Specifically, this opportunity is concentrated in the Tier 2 and Tier 3 industrial base: specialist component manufacturers and service providers operating one or two levels upstream of the primes. Drawing on McKinsey's proprietary database, which covers approximately 2,000 companies across the European defense supply chain, we have identified four particularly fragmented subprime segments where private actors are well positioned to drive consolidation and unlock value:

— *Advanced materials:* composites, ceramics, specialty glass, advanced alloys, and stealth materials used in armor and platforms

1 David Chinn, Jaköb Stober, Simone Vesco, and Markéta Haase, "Cutting Europe's €800 billion Gordian knot: Five catalysts to transform defense," McKinsey, November 13, 2025.
2 "Openness and fragmentation in EU defense procurement," European Centre for International Political Economy, December 2025.
3 "Europe at a strategic disadvantage: A fragmented defense industry," War on the Rocks, April 18, 2023; "Tackling barriers to the single market for defense," European Parliament, December 2025; "A European defense industrial strategy in a hostile world," Bruegel, November 20, 2024.
4 A tri-national program between France, Germany, and Spain to develop a "system of systems"—including a next-generation fighter and supporting drones—to replace Rafale and Eurofighter fleets on a common basis, launched as a joint Franco–German armament project and later joined by Spain.
5 A German and French project, aiming to replace their current Leopard 2 and Leclerc main battle tanks.
6 Unmanned aerial vehicle (UAV) program, being developed by Airbus, Dassault Aviation, and Leonardo.
7 For example, see the European Commission's European Defense Fund (EDF) factsheet (2021), which highlights that collaborative defense R&D and pooled resources can reduce fragmentation, improve interoperability, and deliver better value for member states' investments.
8 Max Bergmann, "Why it's time to reconsider a European army," Center for Strategic & International Studies, February 28, 2025; Ulrike Franke, "The trouble with FCAS: Why Europe's fighter jet project is not taking off," European Council on Foreign Relations, December 1, 2025.
9 Daniel Fiott, "The poison pill: EU defense on US terms?," European Union Institute for Security Studies, June 14, 2019; "Defense and security industrial strategy," Ministry of Defence, United Kingdom Government, March 26, 2021.

— *Defense and security electronics, including C4ISR:*[10] electronic warfare systems—sensors, radios, command-and-control software, data networks, as well as the dual-use electrical equipment that enables them, such as power units, control electronics, cables, connectors, and embedded hardware

— *Dual-use mechanical components:* complex assemblies such as gears, bearings, hoses, couplings, and transmissions for civilian and military platforms, as well as simpler mechanical parts such as casings, brackets, fasteners, and metal fittings

— *Components for space assets:* propulsion parts, structures, electronics, and satellite subsystems

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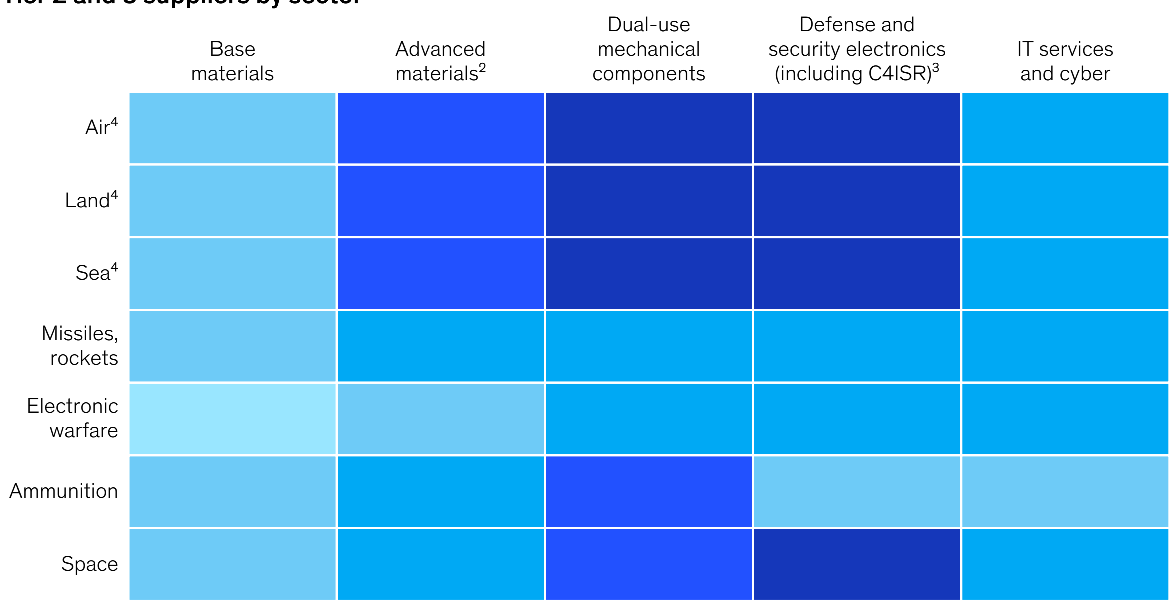
[10] Command, control, communications, computers, intelligence, surveillance, and reconnaissance.

Exhibit 1

The European defense supply chain is fragmented.

Degree of fragmentation of European defense supply chain
Tier 2 and 3 suppliers by sector[1]

Fragmentation: Low High



[1]While the underlying database includes additional categories, including soldier systems, maintenance, repair, and overhaul (MRO), and support services, this analysis focuses on selected upstream industrial segments and does not cover the full breadth of the defense supply chain. Tier 1 and downstream integrators are not included.
[2]Includes special composites and special steel structures.
[3]C4ISR = command, control, communications, computers, intelligence, surveillance, and reconnaissance; excluding electronic warfare for air, land, sea, and space.
[4]Includes unmanned systems (unmanned aerial vehicle [UAV], unmanned ground vehicle [UGV], unmanned surface vehicle [USV], and unmanned underwater vehicle [UUV]).
Source: McKinsey Defense Europe Target Database; McKinsey internal analysis

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McKinsey analysis[11] shows that consolidation in these four segments could unlock around €9 billion in annual run-rate cost synergies—more than the current defense equipment budgets of 24 of Europe's 30 NATO members (see sidebar, "Methodology").[12] If achieved early and sustained, these savings would amount to approximately €45 billion cumulatively by 2030, roughly equivalent to Italy's 2025 defense budget.[13]

[11] See methodology explainer, "Value at stake assessment: Monte Carlo simulations." These estimates are based on a company-level simulation of over 600 companies across the four segments, benchmarking consolidation dynamics in Europe's defense supply chain against those of defense-adjacent industries. The simulation combines historical M&A evidence, proprietary supply chain data, and empirically calibrated constraints on deal feasibility to produce distribution-based outcomes.
[12] France, Germany, Italy, Poland, Spain, and the United Kingdom are the six countries that spend more than €9 billion on equipment procurement each year (as of 2025). "Defence expenditure of NATO countries (2014–2025)," NATO, 2025.
[13] Italy's defense budget in 2025 is projected to be €45 billion. "Defense expenditure of NATO countries (2014–2025)," NATO, 2025.

Methodology

Prime-level industrial value-add measurement
To estimate the share of industrial value added attributable to European defense prime contractors, we analyzed a representative data set of major players across key archetypes (for example, platform OEMs, C4ISR,[1] shipbuilding). For each company, we calculated internal value creation as:

Prime VA% = personnel cost (% of revenue) + depreciation (% of revenue) + EBIT (% of revenue)

To isolate operational activity (for example, assembly, integration, testing), we removed SG&A costs. Because SG&A data are not consistently disclosed, we benchmarked a subset of primes where data were available and extrapolated archetype-specific SG&A ranges based on cost structure, delivery model, and operating complexity:

Operational VA% = prime VA% – SG&A (% of revenue)

To focus on defense-specific activity, we estimated a "defense share" for each company (specifically, the portion of total revenue attributable to defense) based on disclosures where available and extrapolated values for others using archetype-based proxies:

Defense VA% = operational VA% × defense share

Finally, we calculated a revenue-weighted average across the sample to arrive at a sector-wide view.

We selected this top-down approach because detailed bottom-up, value-add data at the supplier level—across thousands of upstream firms—are largely unavailable and nonstandardized. A bottom-up build would not only be incomplete but also risk misrepresenting systemic dynamics. By contrast, analyzing public financial data from large primes allows for a consistent, scalable methodology that captures structural trends across the defense value chain.

Value at stake assessment: A simulations-based approach
The analysis uses a Monte Carlo simulation to assess consolidation potential across segmented parts of Europe's defense supply chain, benchmarking each against defense-adjacent industries. It combines empirical evidence from historical M&A with a structured representation

[1] Command, control, communications, computers, intelligence, surveillance, and reconnaissance.

of how mergers unfold in practice, recognizing that outcomes depend on timing, financing conditions, regulation, management priorities, and target availability. Results are therefore expressed as probability distributions rather than point estimates.

The company-level assessment draws on two McKinsey proprietary assets: a historical M&A and synergy database, and a defense supply chain company database covering ownership, geography, and financials. The model evaluates only plausible acquirer–target pairs, with likelihood inferred from precedent observed in comparable sectors, on the assumption that consolidation mechanisms transfer even when product specifics differ. A geographic lens is applied using International Monetary Fund (IMF) trade-flow data between European NATO members as a proxy for cross-border M&A feasibility.

Each simulation converges toward a realistic end state in which no further mergers are plausible, reflecting the exhaustion of consolidation potential within each segment. This end state is calibrated using historical deal patterns and expert judgment. Deal feasibility is assessed along three observable dimensions—relative size, ownership structure, and country—with thresholds set to reproduce realistic consolidation dynamics and align with expert estimates of feasible consolidation envelopes.

The industrial logic is strong. Our analysis of European defense value chains suggests that only about a quarter of prime-level value added comes from final assembly, integration, and testing, while around three-quarters is created upstream by component manufacturers and specialized service providers.[14] In a system where much of the capability, cost, and risk sit in the supply chain, even modest consolidation can have an outsized impact.

Scaling Europe's defense industrial base across four key segments

Consolidation across the four segments in scope presents a compelling opportunity to unlock value through scale, accelerate capability development, and deploy proven industrial levers. Spanning R&D-led capability platforms, high-margin electronics systems, and scale-driven manufacturing categories, these segments demonstrate how upstream consolidation could translate industrial efficiency into strategic and operational advantage (Exhibit 2).

Advanced materials: Consolidating advanced materials suppliers could unlock up to €2.8 billion per year, as fragmentation currently hinders the R&D investment needed for next-generation platforms. Materials performance now drives platform outcomes—such as weight, endurance, survivability, and sensor performance—relying increasingly on composites, specialist glass, advanced ceramics, and coatings. Consolidation offers the chance to pool R&D, streamline footprints, and improve purchasing power. For investors, this could enable the creation of "materials platforms" capable of serving both defense and adjacent markets, particularly aerospace.

Defense and security electronics, including C4ISR: This category comprises high-margin platforms with approximately €2.7 billion per year in cost and margin uplift potential. It combines attractive economics and clear strategic importance, uniting high-margin C4ISR and electronic-warfare platforms—where margins are driven by intellectual property, software, and certification—with large, splintered pools of electrical equipment suppliers, whose offerings are quality-critical and labor-intensive to assemble.

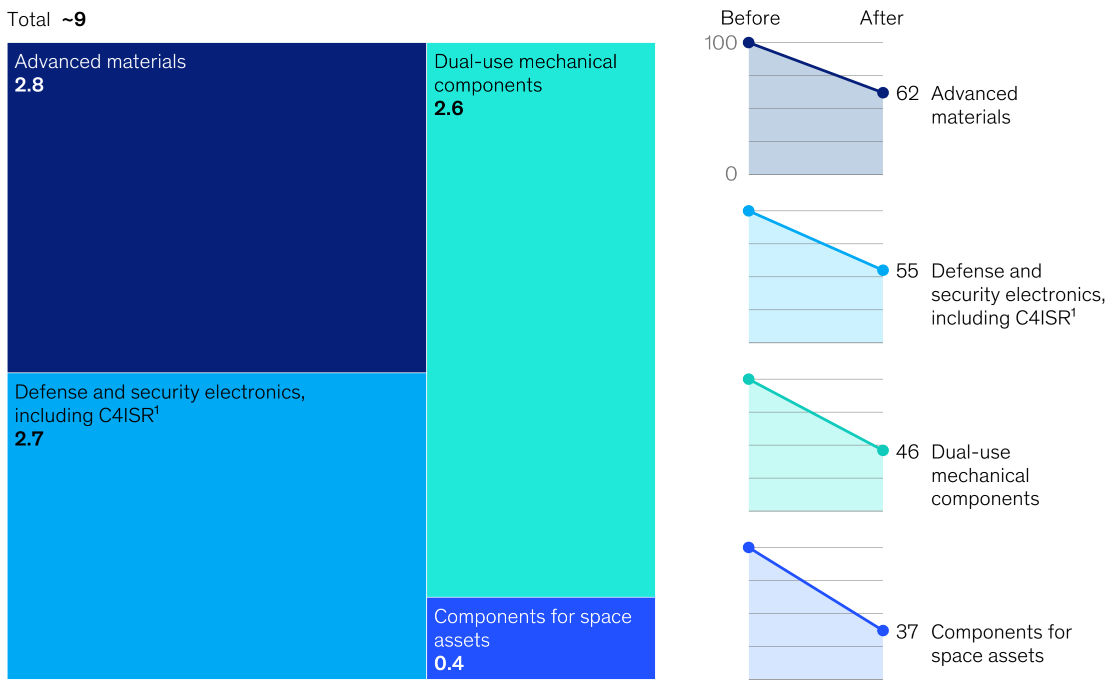
[14] McKinsey analysis (see sidebar, "Methodology").

Exhibit 2

Consolidation of four segments would reduce the total cost base by nearly €9 billion per year and substantially reduce market complexity.

Annual cost savings from consolidation,[1]
€ billion

Number of companies before vs after consolidation, %



Note: Figures do not sum, because of rounding.
[1]C4ISR = command, control, communications, computers, intelligence, surveillance, and reconnaissance.

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Consolidation at the system and subsystem level—for example, sensors, radios, and mission electronics—could reduce duplication and enable a handful of European platform players to invest in modular architecture, standard interfaces, shared test infrastructure, and secure-by-design engineering. In component-heavy segments, such as cables, harnesses, connectors, and power units, value lies in manufacturing modernization, automation, and harmonized specifications. Selective vertical integration across systems, subsystems, and critical electrical components could further reduce integration risk, shorten qualification cycles, and improve delivery reliability.

Dual-use mechanical components: This category represents the value pool where execution matters most. As the foundation of Europe's defense manufacturing across air, land, and sea, this segment is all about scale-and-throughput—consolidation could unlock an estimated €2.6 billion per year through procurement leverage and automation. Mechanical parts, often overlooked until they become a bottleneck, can stall final assembly when shortages occur. Consolidation could enable suppliers to invest in capacity buffers and systems upgrades, better meeting the evolving requirements of prime contractors.

Components for space assets: Although smaller, this segment is becoming increasingly critical as demand grows for secure, resilient communications, and as space emerges as a contested domain of sovereignty. Consolidation could unlock roughly €0.4 billion in value by addressing single points of failure in a fragmented supply base, and supporting the capital-intensive qualification and testing that is difficult for subscale specialists to fund and scale.

These savings could benefit government customers, end users, prime contractors, and capital providers. Notably, this estimate reflects only the initial opportunity; since the €9 billion estimate covers just four segments, the total value potential from Tier 2 and Tier 3 supply chain consolidation could be much greater.

The benefits of consolidation

Consolidation at the Tier 2 and Tier 3 supply chain levels offers benefits that extend well beyond cost savings alone. It can reduce duplicative R&D, enable larger and more sustained investment in modern manufacturing, digitalization, and AI, and accelerate the diffusion of innovation across programs. Executed effectively, this would translate into lower unit costs, higher and more predictable output, faster innovation diffusion, and a more resilient industrial base—without undermining national champions at the prime level or triggering platform-level political sensitivities.[15] It would also increase commonality at the subsystem level, improving upgradeability and interoperability across allied forces, even if platform fleets remain diverse.

These advantages are distributed across the entire defense ecosystem, with distinct value for governments, industry, and investors alike. Governments could benefit from lower acquisition and sustainment costs, improved availability, and greater interoperability. Industry could gain the scale to reinvest in capacity, advanced manufacturing, and next-generation R&D, shifting from duplicated effort toward more effective innovation. Investors could unlock opportunities by pairing long-duration defense demand with scalable industrial platforms that support sustained, compounding value creation. Together, these effects could turn supply chain consolidation into a catalyst for faster capability delivery, stronger industrial resilience, and more effective use of Europe's growing defense budgets.

Considerations for private capital and industry

For private capital and industry players alike, the implication is clear: Success will require moving beyond one-off transactions to a system-level approach to defense supply chains—whether through platform-based capital deployment or targeted vertical integration and capability build-out. This requires clarity on where to play, how to build, and how to operationalize from day one:

— *Be deliberate about where to play.* The strongest consolidation opportunities are likely in fragmented segments with repeatable products and improving demand visibility. Scale-driven categories—such as mechanical and electrical—could reward strong execution and cash discipline, while capability-driven areas, such as defense electronics, advanced materials, and space, may justify sustained investment in scarce capabilities. Defense electronics, especially C4ISR, could be particularly attractive, given higher margins that can help fund consolidation and longer-term capability build-out.

— *Use diligence to assess defensibility.* In defense supply chains, value often lies less in physical assets and more in certified processes, specialized talent, security compliance, and a proven delivery record. Effective diligence could therefore go beyond financials to assess single points of failure, customer concentration, and contract structures—testing durability at scale.

[15] Benedetta Girardi and Irina Patrahau, "Opaque supply chains may prevent rearming Europe," Hague Centre for Strategic Studies, March 27, 2025.

— *Focus on a small set of repeatable value-creation levers.* Early value could come from procurement scale, footprint specialization, standardization, targeted automation, and tighter working-capital discipline—alongside necessary investments in quality and cyber and security compliance. Improvements in delivery performance and lead times within 12 to 18 months could serve as early indicators of success.

— *Embed 'trusted supplier' considerations early.* Consolidation among Tier 2 and Tier 3 suppliers is likely to be assessed not only on price, but also on security and compliance. This may require early planning for data protection, cyber and quality upgrades, and facility and personnel clearances, with explicit recognition of timing and cost implications.

— *Balance scale benefits with resilience considerations.* As scale is built, efficiency gains may need to be paired with investments in backup capacity, surge buffers, and dual-source options for critical components. Tracking core metrics—such as on-time delivery, lead times, and qualified throughput—could help demonstrate improved reliability rather than new concentration risks.

Done well, supply chain consolidation could deliver significant financial benefits—potentially unlocking around €9 billion in annual value—while strengthening security of supply and delivery performance through the creation of scalable, investable supplier platforms. In turn, this could help ensure that Europe's rearmament effort builds durable domestic industrial capacity, supports innovation and interoperability, and reinforces long-term strategic resilience.

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