From *K-Bangsan* to Global Top Four: Recent Trends and Future Strategies for the 2030s[1)]

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Amid intensifying geopolitical tensions and what some describe as a New Cold War, the global defense industry is undergoing profound transformation. Defense spending has reached record highs, while disruptive technologies—such as AI, drones, and space systems—are reshaping the nature of modern warfare. At the same time, supply chain resilience has become a critical strategic priority for many countries. Against this backdrop, South Korea's defense industry—branded as "K-Bangsan"—has drawn significant international attention, achieving remarkable export growth and positioning itself as a potential"Arsenal of Democracy." Nevertheless, structural challenges remain, including a stagnant domestic market, technological gaps, heavy dependence on imported key components, and a rigid acquisition system.

Ⅰ. Introduction: Strategic Realignment of the Defense Industry in the New Cold War

① As the world enters the latter half of the 2020s, a new Cold War order is rapidly taking shape. Russia's invasion of Ukraine, launched in February 2022, has now dragged on for more than three and a half years. Meanwhile, the ongoing conflict between Israel and Hamas, U.S. and Israeli preemptive strikes on Iran's nuclear facilities, and the intensifying U.S.-China strategic rivalry are all driving a global security environment marked by heightened geopolitical tensions.

In response, major powers are sharply increasing their defense budgets. Global military expenditures have reached record highs year after year. Under the second Trump administration, elected in November 2024, the United States has revived its America First policy, demanding that NATO and Indo-Pacific allies raise defense spending to at least 5% of GDP. As a result, global defense spending is projected to surpass USD 3 trillion in the near future.

Prolonged wars in Europe and the Middle East have also accelerated the integration of civilian advanced technologies—such as artificial intelligence (AI), drones, and space systems—into modern weapon systems. The defense sector is undergoing rapid digitalization, intelligentization, and automation. At the same time, the sustained nature of these conflicts has elevated supply chain resilience and the modernization of the defense industrial base to core national security priorities.

These shifts in the global security and industrial landscape form the strategic backdrop for Korea's national defense and defense industry policies. In recent years, Korea's defense sector—branded as "*K-Bangsan*"—has drawn global attention with remarkable export growth, enhancing its international profile as a potential arsenal of democracy. Nevertheless, structural challenges remain, including stagnant domestic demand, limited innovation in advanced technologies, dependence on imported core components and materials, and a relatively narrow industrial ecosystem.

Against this backdrop, this article examines the position of *K-Bangsan* within the rapidly evolving global defense environment and outlines the key roles and strategic tasks necessary to achieve the Korean government's goal of becoming one of the world's top four defense powers.

Ⅱ. Three Major Trends in the Global Defense Industry Landscape

1. Intensified Global Defense Spending: Military Expenditures Reach Record Highs

One of the most significant developments in today's global defense industry landscape is the sharp rise in defense budgets driven by growing geopolitical instability. In 2024, global military spending reached an all-time high of USD 2.718 trillion—a 9.4% increase from the previous year.[2)]

In Europe alone, defense expenditures climbed to USD 693 billion in 2024, representing a 17.9% year-on-year increase. The Middle East followed a similar trajectory, with spending reaching USD 243 billion—up 15% from 2023. Particularly notable was the NATO Summit agreement in June 2024, where member states pledged to raise defense budgets to 5% of GDP by 2035. This commitment is likely to usher in a USD

1) This report is a revised and supplemented version of the article titled "Recent Trends and Future Challenges of *K-Bangsan* for Entering the Global Top Four Defense Powers", which was published in the July 2025 issue of IR Focus: Issues and Analysis.

2) SIPRI, SIPRI Military Expenditure Database, April 2025.

3 trillion era of global defense spending in the near future.

The trend extends well beyond Europe and the Middle East. In the Indo-Pacific, U.S. demands for greater burden-sharing under the second Trump administration are gaining momentum. Countries such as Japan, Australia, and South Korea now face mounting pressure to align with NATO's proposed 5% of GDP benchmark for defense spending.

2. Technological Disruption and the Acceleration of Diversified Acquisition Models

Second, the rapid emergence of disruptive technologies—particularly artificial intelligence (AI), drones, and space-based systems—has fundamentally reshaped the character of modern warfare. These technologies are acting as battlefield game changers, driving both diversification and acceleration in weapon acquisition methods.

Modern warfare is now defined by capabilities in AI, drones, space, and cyber technologies. Without them, battlefield visualization and real-time detection-identification-strike cycles are virtually impossible. Ukraine, for example, has expanded its production capacity for loitering munitions and long-range drones to an estimated 4-5 million units annually, a dramatic increase from prewar levels. Space-based assets have become equally critical: commercial satellite services such as Starlink, Iceye, and Maxar now deliver real-time tactical data directly to frontline forces.

In response, major defense powers are moving beyond traditional acquisition models toward approaches designed for the rapid integration of emerging technologies. These include AI-specific acquisition pathways, software procurement, service-based contracting models, and other rapid acquisition mechanisms.

The United States leverages the Defense Innovation Unit's (DIU) Commercial Solutions Opening (CSO) framework to transition fieldable prototypes into operational use within weeks or months. Similarly, Israel's iHLS(Israel Homeland Security) and Ukraine's Brave1 function as advanced acquisition accelerators, enabling next-generation capabilities to reach the battlefield at unprecedented speed.

3. Supply Chain Resilience and the Strategic Value of the Defense Industry Ecosystem

The strategic importance of supply chain resilience and the modernization of the defense industrial ecosystem has grown dramatically in recent years. With unprecedented global military build-ups, disruptions in defense supply chains have become a central concern in national security strategies.

The ongoing Russia-Ukraine war has exposed critical shortages of semiconductors, rare earth materials, ammunition, and missile inventories. In response, both the United States and the European Union released national defense industrial strategies in 2024—the National Defense Industrial Strategy (NDIS) and the European Defense Industrial Strategy (EDIS)—placing supply chain resilience at the top of their policy agendas.

For example, severe shortages in production capacity for ground combat systems in Eastern European countries such as Poland have become a key driver behind the surge in South Korean defense exports, particularly of K2 main battle tanks and K9 self-propelled howitzers.

At the same time, the composition of the defense ecosystem is evolving. Once limited to defense firms, government agencies, and armed services, it now increasingly incorporates advanced civilian technology companies, startups, allied nations, and private financial institutions. This broader ecosystem underscores the growing emphasis on fostering robust networks through support for startups and SMEs, the development of regional defense clusters, the cultivation of skilled talent, and deeper international defense cooperation.

III. Recent Achievements and Structural Limitations of *K-Bangsan*

In 2023, Korea's defense industry recorded strong performance, with total sales of KRW 23.3 trillion, exports of KRW 4.8 trillion, and an operating profit margin of 8.9%. This success earned the sector recognition as an emerging "Arsenal of Democracy." However, beneath this export-driven growth lie structural challenges that threaten long-term sustainability, including stagnant domestic demand, widening disparities between large and small firms, heavy reliance on imported core materials, limited capabilities in emerging technologies, and a rigid acquisition system.

First, the domestic market remains stagnant. While exports have surged, the share of the national defense budget allocated to force improvement has grown by only 1.2% annually from 2020 to 2025, revealing a disconnect between international sales growth and domestic investment.[3]

Second, polarization between large defense contractors and SMEs has intensified. In recent years, roughly 80% of total defense sales and over 90% of exports[4] have been concentrated in a small number of major companies. This imbalance undermines the viability and innovation capacity of mid-tier and small enterprises, which form the backbone of the defense industrial ecosystem.

Third, dependence on foreign core materials and components remains high. Although the localization rate for defense parts reached approximately 82% in 2024, reliance on imported advanced defense materials still stands at 79%. In the case of military-grade semiconductors, imports account for over 99%.[5] Such dependence reduces supply chain resilience, lengthens lead times for both domestic and export orders, and increases the risk of delivery delays and

3) Ministry of National Defense, Defense White Paper, various editions.

4) delivery basis

5) DAPA, Development Strategy for Defense Semiconductors, *Presentation Materials for the Prosperous Nation and Strong Military Forum*, 2024.

performance shortfalls.

Fourth, Korea lags behind leading nations in critical emerging technologies. Capabilities in AI, software, cyber operations, and drone technologies remain underdeveloped. The application of AI to weapon systems has made little real progress due to regulatory restrictions, limited datasets, and barriers to data sharing. In the drone sector, stringent regulations on large firms, supply chain bottlenecks, and frequent audits have weakened competitiveness—leading some observers to label Korea a "drone underdeveloped nation."

Fifth, the acquisition system is rigid and outdated. The defense procurement process still follows a traditional, long-cycle "requirements-development-deployment" model that cannot keep pace with rapidly evolving threats and technologies. Although "Rapid Pilot Acquisition Programs" and "Rapid Operational Needs" initiatives have been introduced, they remain largely ineffective due to small budgets and bureaucratic constraints. Crucially, Korea lacks a dedicated innovation-oriented acquisition platform—similar to the U.S. Defense Innovation Unit (DIU) or Israel's iHLS—that would allow startups and civilian technology firms to meaningfully participate in procurement.

Lastly, the industrial ecosystem remains narrow and overregulated. The sector is still dominated by DAPA, major defense firms, and affiliated R&D institutes, creating high barriers to entry for new participants such as startups and civilian ICT companies. Frequent government audits and a compliance-heavy oversight culture discourage innovation and risk-taking, potentially deterring private investment and undermining the industry's overall dynamism.

IV. Future Strategies for the *K-Bangsan*

The new Lee administration, which took office on June 4, 2025, has declared its vision of transforming South Korea into one of the world's top four defense powers in the world. To this end, the new government has pledged to strengthen the national defense export control tower, expand investment in AI defense R&D, and enhance the defense ecosystem and regional industrial clusters. In light of the shifting global security and defense industry landscape, three strategic imperatives for *K-Bangsan* are proposed as follows:

1. Gradual Increase in Defense Spending and Military Modernization

To enhance the competitiveness of *K-Bangsan* in the new Cold War era, export expansion must be accompanied by a stable domestic market. The recent NATO Summit's agreement to raise defense spending to 5% of GDP by 2035 offers significant implications for South Korea. In the context of the second Trump administration's emphasis on allied self-reliance and Korea's own need to modernize its military with advanced technologies, a phased increase in defense spending appears inevitable.

South Korea should therefore consider a long-term roadmap to raise its defense budget from 2.6% of GDP, KRW 61.2 trillion in 2025, to 3% by 2027, 3.5% by 2030, and 5% by 2035—including both direct and indirect infrastructure investments. This would enable not only a reduction in dependence on foreign weapons systems but also a proactive response to key priorities, such as: Modernization of Korea's three-axis deterrence system, Acceleration of digital transformation in defense, Deployment of AI-enabled systems for real-time battlefield visualization, detection, identification, decision-making, and strike, Expansion of joint R&D and co-production of advanced weapon systems with the U.S. and Europe, and Strengthening of MRO (Maintenance, Repair, and Overhaul) support for U.S. Forces Korea (USFK) equipment.

In particular, the digital transformation of national defense includes transitioning to AI-based command and control systems, expanding adoption of autonomous weapon platforms such as drones and robots, and developing big data-driven situational awareness capabilities.

Institutionally, this requires establishing a new "Office of Advanced Defense Capabilities" (tentative name) within the Ministry of National Defense to serve as the national AI command center for defense innovation. In addition, a "Defense Capability Optimization System" should be created to reassess and reprioritize weapon acquisition programs based on evolving domestic and global security conditions—even for programs that have already received approval. For example, the U.S. regularly adjusts procurement plans, such as reducing F-35 orders while increasing unmanned drone acquisition.[6] Korea should actively consider regulatory reforms to support such flexibility and promote international joint development of weapon systems.

2. Establishment of a Korean Rapid Acquisition Framework

A fundamental overhaul of Korea's defense acquisition system is urgently needed to enable the rapid adoption of advanced technologies like AI, drones, and cyber systems. Major defense powers—including the U.S., Israel, and Ukraine—have already established systems to deliver fieldable prototypes to troops within weeks or months.

Since 2018, the U.S. has implemented six acquisition pathways beyond traditional models, including rapid acquisition (MTA), software acquisition, and service acquisition. The Defense Innovation Unit (DIU) has played a key role through its Commercial Solutions Opening (CSO) program, fostering defense unicorns such as Palantir and Anduril. Israel's iHLS, launched in 2012, serves as a springboard for defense and homeland security startups to enter global markets; over 30 firms have already expanded into the U.S. and NATO. Similarly, Ukraine launched its

6) Defense One, June 11, 2025.

Brave1 defense innovation platform in 2023, successfully fielding drones, electronic warfare, and cyber systems within weeks.

In contrast, Korea has introduced the Rapid Pilot Program (2020) and Rapid Operational Needs Program (2023), but they have not met expectations due to insufficient budgets, exclusion of early-stage operational requirements, limited civilian participation, and uncertainty around follow-on procurement.

To address these issues, the Korean government must urgently develop a new acquisition process tailored to the rapid integration of emerging technologies. In addition to enhancing existing rapid acquisition programs, Korea should explore new procedures that allow fast-track adoption of civilian innovations, including those from startups. Such a framework would support a more diverse, agile, and streamlined full-cycle acquisition system for future battlefield needs.

3. Expanding the Defense Industry Ecosystem and Ensuring Export Sustainability

The final strategic imperative for *K-Bangsan* is the expansion of South Korea's defense industrial ecosystem and the assurance of long-term export sustainability. Achieving this goal will require a structural transition from a traditionally closed and prime contractor-centered model to a broader and more inclusive framework that integrates a wider range of stakeholders. This transformation should begin by significantly increasing participation from civilian innovation actors, including startups, private technology companies, government-funded research institutes, and corporate R&D centers. At the same time, targeted government support should be directed toward the creation and growth of regional defense clusters that combine capabilities in aerospace, space, and other dual-use industries, in close collaboration with local governments.

Strengthening international cooperation will be equally critical. South Korea should seek to conclude a Republic of Korea-United States Reciprocal Defense Procurement Agreement (RDP-A) to enable mutual market access, deepen defense industrial ties with NATO through cooperative R&D and integrated supply chains, and establish long-term defense cooperation frameworks with key partner countries in Latin America, the Middle East, and Southeast Asia.

To ensure the sustainability of defense exports, Korea must also enhance defense diplomacy with its principal markets, shift from a domestically led to a global demand-driven model of development planning, localize critical supply chains in priority export regions, allocate dedicated budgets for the rapid upgrading of existing export platforms, and establish specialized export channels tailored for SMEs.

Collectively, tese measures would enable Korea to expand joint development, co-production, and co-marketing initiatives with partner nations. A whole-of-government export coordination mechanism, anchored by an expanded presidential-level control tower, along with regulatory reforms to ease restrictions on specialized talent and employment, will be indispensable in securing Korea's position as a global leader in the defense industry.

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