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# The Future of the Global Defence Industry

Strategic planning for the next five years and beyond  
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## Overview

Current assumptions about the global defence industry have a short shelf-life of relevance and utility. Powerful, persistent, and resilient disruptive forces will progressively and fundamentally alter the dimensions of the industry over the next five to 10 years and beyond. The evolution of these intersecting forces will drive industry and market dynamics along previously unexplored trajectories, generating new competitions that do not conform to existing assumptions about the future of the industry. Even the industry's largest and best-positioned companies could be outmanoeuvred by new and nimble niche competitors or voluntarily choose market exit in an increasingly risk-burdened environment. Uncertainty, complexity, and a pervasive sense across the industry of growing vulnerability to fast-moving and convulsive disruptions will increasingly affect industry strategic and operational decision-making.

### Incorporating uncertainty in current and future strategic planning

Scenario planning is a powerful and highly relevant means of dealing with this uncertainty by incorporating it rather than seeking to eliminate it. Exploration of a combination of plausible (instead of merely likely) and provocative alternative future environments can help decision-makers to better:

- challenge core and inherited assumptions in a structured and rigorous way;
- expand thinking beyond straight-line projections of the 'now';
- recognise and assess underlying drivers, intersections of these drivers and critical uncertainties, many of which may not be visible through existing analytical filters, analysis of current trends, or even nuanced assessments of the probable;
- bound the scope and scale of future challenges and opportunities and the conditions under which they will unfold;
- anticipate deleterious—and drive salutary—disruptive shifts and outcomes;
- develop core and hedging strategies and identify capabilities and relationships that will help mitigate against risk and capitalise on opportunities both in specific scenarios and across multiple futures.

Jane's Strategic Assessments and Futures Studies (SAFS) Centre has developed the Defence Industry 20YY scenario planning report to assist stakeholders in assessing and responding to the rapidly approaching series of convulsive market transitions. As part of this effort, the SAFS Centre team, in conjunction with multi-disciplinary experts, from across the IHS Markit business, has authored and provided analysis of three alternative visions for the future of the global defence industry.

Our strategically focused scenarios outlined below are qualitative in nature. Each is designed to isolate and explore one particular profound driver of the future of the industry: new competitive dynamics, technological innovation, and geopolitical and economic shifts.

**Industry Insurgency:** This is a scenario largely focused on radical shifts in both supply and demand dynamics in the global export market. The scenario envisions growing global growth in defence spending, especially in emerging markets. It also posits tiers of new competitors entering the export market in force in the early-to-mid 2020s. The combined result is a squeezing of established providers' market position, requiring a critical evaluation of strategy and business models across the industry.

The Industry Insurgency scenario includes a list of five 'first-tier' national industry competitors that reach 'cross-spectrum' competitive maturity between around 2022 and 2028. Simultaneously, several niche competitors—both in terms of capabilities and specific geographic focus areas—constitute a more significant competitive presence. Some countries in this scenario have ambitions over the next 15 years that outstrip their industrial capacity, creating a different type of export challenge.

**Divergent Disruptions:** This is an exceptionally fast-paced scenario marked by rapid high-end and low-end asymmetric technological innovation in order to meet shifting end-user requirements. This scenario depicts spiraling competition between divergent innovation pathways. Many of the most advanced militaries and defence companies invest in ever-more expensive, purportedly game-changing high-end technology and capabilities. Less technologically mature countries and industries will pursue two paths in response: develop less expensive and less advanced lower-tech asymmetric capabilities that exploit high-tech vulnerabilities and intensify efforts at illicit and surreptitious acquisition of novel technologies. The need for rapid innovation and incorporation of novel technologies in this scenario places intense pressures on industry to meet novel and shifting defence requirements in an expanding and diffused threat environment.

**Failing Frameworks:** This is a scenario of transition from the Western-led frameworks that have dominated global economics, geopolitics, and security since at least the end of the Cold War. A new order gradually comes into clearer focus over the 20-year-plus scenario timeline. Shifting geopolitical alliances create novel and affecting pressures on the global defence industry. New industry relationships form. Many emerging export markets focus on diversifying supplier bases as a hedge against changing geopolitical alignments that could upset defence relationships. The erosion and eventual replacement of established relationships will drive a reconsideration of procurement priorities and processes across the globe and of supplier/end-user models, among other industry-changing implications.

### Five forces particularly impactful in reshaping the global defence industry

A key component of our report and especially our half-day briefing session is the articulation of signposts that one future world is more or less likely to come to pass (for example, the combination of Brexit and the reorientation of post-coup/purge Turkey's posture towards the West and possible reset of relations with Russia are two signposts of the Failing Frameworks scenario). Matching scenario-specific analysis with signpost identification allows decision-makers to effectively design and implement hedging strategies either before or as disruptive shifts occur, allowing organisations an opportunity to get ahead of risks and opportunities generated by the intersections of the five forces discussed below:

**New actors:** Defence and security companies face increasingly competitive environments filled with new actors from emerging markets and adjacent industries, many applying disruptive business models to increasingly constructive effect. The entry of a variety of emerging market companies that maintain the flexibility to offer 'good enough' solutions, technology transfer, and favourable financing terms has been a feature of export markets for several years.

In addition, demand for defence- and security-focused solutions in the cyber/information domain, new materials, wearable/flexible electronics, unmanned systems, artificial intelligence, big data analytics, and navigation and communication technologies are driving convergence between security and defence requirements and capabilities. The resulting intersections between high-tech companies that specialise in commercial applications of these technologies and the global defence industry create a powerful uncertainty shaping at least two of our scenarios.

The trajectory of this engagement with the high-tech industry is unlikely to be a steep and straight upward line. Low margins, intellectual property concerns, difficulty of doing business with government procurement agencies, long business development cycles, and ethical concerns will deter some high-tech companies from large defence and security plays. US secretary of defence Ash Carter's May 2016 decision to change leadership of the Defense Innovation Unit Experimental (DIUx)—an organisation established to facilitate US

Department of Defense (DoD) engagement with Silicon Valley—due to slower-than-expected progress underscores some of the bureaucratic demand-side challenges associated with the early stages of this engagement.

However, the leadership change also demonstrated the commitment of the world's largest and highest-tech military to expand engagement with this sector. The May announcement actually formalised the establishment of a new DIUx hub in Boston and acknowledged the need to accelerate procurement process reform. Dismissing the potential effects of high-tech companies—as competitors, partners, and merger and acquisition targets—on the global defence market will leave traditional industry actors vulnerable to powerful disruptive market shifts.

**New technologies:** Development, proliferation, and clever use of a range of emerging technologies have the potential to rapidly transform end-user capability requirements and shatter assumptions about the types of models that will enable success for corporate activities. Four categories of capability revolutions stand out: perception, processing, and cognition; human and materials performance; communication, navigation, targeting, and strike; and manufacturing and logistics.

For example, the increasing incorporation of a range of advanced manufacturing techniques—especially additive manufacturing but also augmented-reality manufacturing—and growing research in novel materials such as composites will have significant and durable implications for all AD&S industry activities. Moreover, investment in next-generation manufacturing technologies, like synthetic biology manufacturing and 4D printing (and the smart materials required for 4D printing) signal a longer-term, but even more disruptive, shift in industry models and the capabilities industry will be asked to develop.

**New frameworks:** The intersection of industry drivers with broad 'megatrends' related to economics, geopolitics, demography, immigration, challenges to Westphalian concepts of state sovereignty, and climate change will have far-reaching implications for global defence communities and the industry that supports them.

The unravelling of current geopolitical frameworks and evolving economic realities related to global debt, slow growth, and emerging-market 'mid-life crises' will be particularly affecting for the future of the global defence industry.

**New rules:** Managing supply chains and business resilience amid increasing regulations focused on counterfeiting, cyber security, corruption, climate change, and conflict materials will bring new risks and constraints on partner identification and could even further constrain the nature of the markets to which companies can sell.

In addition, innovation in defence and security products and services will require (indeed, stimulate) new laws and regulations to assuage legal, safety, security, business, infrastructure, and ethical concerns; think of ongoing legal, ethical, and security discussions related to technology areas such as human performance enhancement, autonomous strike, armed drones, near ubiquitous sensors and surveillance, and big data analytics technologies. Shaping the 'rules of the game' to facilitate easier adoption of specific products at both national and international levels will be a growing feature of future competition for global defence (and security) companies.

**New budget and funding realities:** The current environment of constrained procurement budgets will be matched by enduring spending crunches in research, development, testing, and evaluation (RDT&E) budgets across several regions later in this decade.

Figure 1: RDT&amp;E expenditure growth (%)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
North America	n/a	-11.90	-12.49	-2.45	4.08	4.82	1.90	-7.13	-1.81	-5.19
Latin America	n/a	10.84	6.45	-2.14	1.07	-8.84	-4.96	8.77	16.56	-13.83
Western Europe	n/a	-0.75	0.18	-2.94	0.48	4.36	1.24	0.06	0.78	1.27
Eastern Europe	n/a	20.60	-3.35	8.61	21.12	8.77	5.71	5.15	1.70	4.91
Russia and CIS	n/a	29.98	22.63	12.70	9.19	-4.92	-1.77	-1.67	0.84	-0.70
Sub-Saharan Africa	n/a	0.56	-3.51	3.74	-0.36	4.05	-1.17	-1.07	3.90	3.11
MENA	n/a	2.94	9.50	5.77	2.06	-3.03	5.19	3.34	3.55	3.92
ASPAC	n/a	1.07	11.89	7.62	-0.12	2.02	6.50	6.80	5.66	6.21
Total	n/a	-8.51	-7.03	-0.31	3.20	3.73	2.50	-3.75	0.08	-2.08

Source: IHS Defence Budgets

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Innovation will occur more frequently through risk-burdened company-funded innovation initiatives that may never be selected for contracts. Defence and security companies, then, are likely to seek means of sharing this risk through public/private partnerships, co-operation with competitors, acquisition of niche providers of sought-after technologies, or even partnership with non-defence and security industries focused on different applications.

The global defence industry is experiencing several enduring and intersecting technological, competitive, and market transitions that will impact both immediate and distant opportunities and risks. Cultivating new mindsets and perspectives through scenario planning will be critical to ensuring the agility and resilience necessary to navigate unsettled environments and a growing collection of risks and opportunities.

**Tate Nurkin** is the Senior Director of the Jane's SAFS Centre. He has 20 years of experience in futures-focused analysis and applying scenario planning, wargaming, red teaming, and strategic net assessment methodologies to defence-industry, geostrategic, and military issues and competitions. He is a frequent speaker and author on the global defence industry, military capabilities, disruptive innovation, and geopolitical competitions. In July 2016, Tate began a two-year term on the World Economic Forum's (WEF's) Global Future Council on International Security. From July 2014 to June 2016, Tate was a member of the WEF's Global Agenda Council on Nuclear Security and served as the lead author of the Future of Nuclear Security white paper published by the WEF in April 2016.

To obtain the full Jane's Defence Industry 20YY report and, schedule a briefing of the complete analysis behind it please contact us today:

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