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Explainer
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Empowering Britain's warship production

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The increasingly uncertain global security outlook and proliferation of state and non-state threats to the United Kingdom (UK) mean that the British Armed Forces need to increase their readiness, mass, and firepower. The Royal Navy in particular will likely be expected to do far more in the coming decades to defend British territories and secure the UK's interests further afield, which necessitates the building of more warships.

Britain has a historically strong and innovative shipbuilding industry, but there has been a decline in the size and strength of the naval shipbuilding industrial base. Now that warship production is ramping up once more, and may well need to increase even further, there is much that His Majesty's (HM) Government can and should do to ensure that the nation's shipbuilding industry can meet the moment.

The Council on Geostrategy's Strategic Advantage Cell looks at how HM Government can induce specific areas of strategic advantage to help maximise the power it has available to secure British national objectives as efficiently and effectively as possible. This paper will use the concepts developed by the Strategic Advantage Cell to explore how the UK can use catalysts to accelerate, reduce the cost of, and boost the productivity of its naval shipbuilding programme.

Strategic Advantage

Opponents and competitors once again are linking together a wider range of levers to secure their national objectives. In this environment, the UK must be capable of securing its interests against determined opposition, which is often backed by superior material power – both regionally and globally. The Integrated Review of March 2021 offered the new term of 'strategic advantage' as a starting point to secure British objectives more effectively (though without providing an explicit definition).[1] The 2023 Integrated Review Refresh (IRR) took strategic advantage a step further, adopting it as one of four elements of the UK's strategic framework.[2]

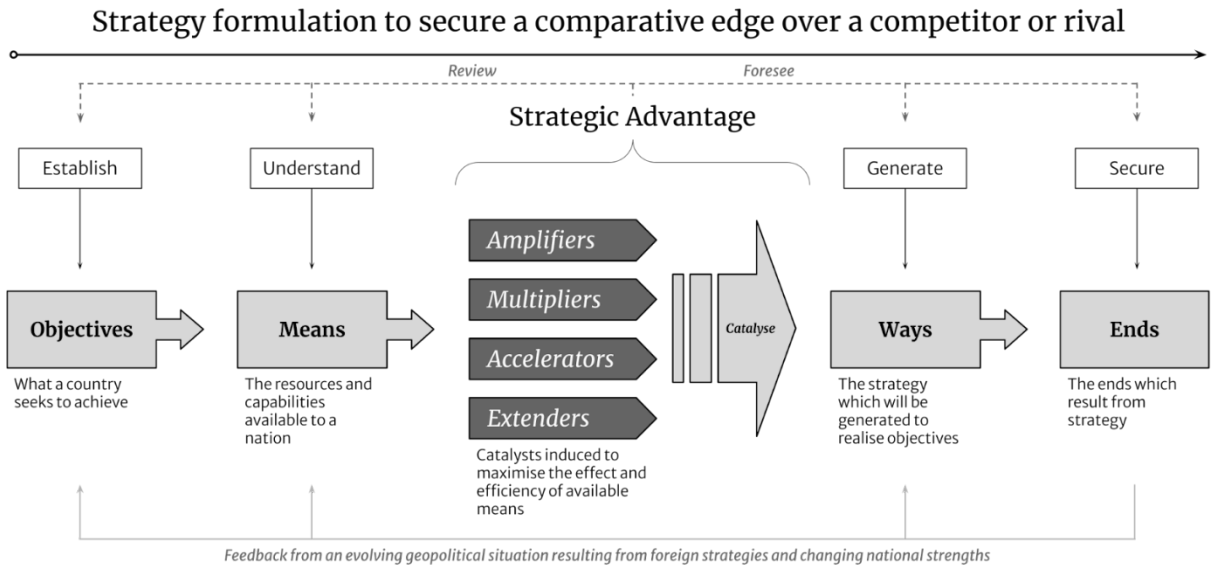
The Council on Geostrategy's Strategic Advantage Cell has worked to flesh out and deepen the definition of strategic advantage, clarifying it as the ability to induce catalysts to help secure national objectives more efficiently and effectively.[3] Such advantage is derived from catalysing a country's national strengths – the resources and instruments at its disposal – to generate a more potent strategic effect. Compared to more traditional understandings of strength (the orthodox understanding of 'advantage'), which are tied to measures of quantity and quality, strategic advantage has a dynamic and non-linear character.

The catalysts can be categorised, based on how they can empower national strategy, into four distinct types:

- **Amplifiers** intend to increase strategic effect through coordination, integration, and innovation;
- **Multipliers** strive to broaden strategic impact by incorporating and aligning foreign actors;
- **Accelerators** aim to speed up strategic success through new mechanisms, programmes, and institutions;
- **Extenders** attempt to further strategic reach via new enablers, logistical networks, and points of control.

[1] 'Global Britain in a Competitive Age: the Integrated Review of Security, Defence, Development and Foreign Policy', Cabinet Office (UK), 07/03/2021, https://assets.publishing.service.gov.uk/ (checked: 10/09/2024).
[2] 'Integrated Review Refresh 2023: Responding to a more contested and volatile world', Cabinet Office (UK), 13/03/2023, https://assets.publishing.service.gov.uk/ (checked: 10/09/2024).
[3] For an overview of the concept of strategic advantage see: Gabriel Elefteriu, William Freer and James Rogers, 'What is strategic advantage?', Council on Geostrategy, 23/11/2023, https://www.geostrategy.org.uk/ (checked: 10/09/2024).

The catalysts of strategic advantage sit within the strategy formulation process as follows:



It is important to note that these catalysts are not mutually exclusive. A particular catalyst might be prioritised at one time as a multiplier or extender, for example, but this does not mean that it cannot later act as an amplifier or accelerator. Catalysts designed with more than one function can stimulate national strengths so they are greater than the sum of their parts, enabling a government to generate systematic advantage. When these catalysts become persistent, a country can secure its strategic objectives more effectively for extensive periods of time.

British naval shipbuilding: Context and challenges

British shipbuilding has a rich and storied history, with roots dating back to the mediaeval period when England's maritime ambitions began to rise. Over the centuries, Britain became a dominant naval power, using its shipbuilding expertise to forge an empire and assert control over the world's oceans. The UK's naval shipbuilding industry continues to demonstrate resilience and innovation through key projects, such as the construction of advanced frigates, aircraft carriers, and submarines for the Royal Navy. However, the industry now faces a complex set of challenges which are reshaping its future. These include

budgetary constraints, evolving technological demands, competition in the global defence market, and the difficulty of maintaining a capable workforce.

One of the most pressing challenges is the issue of funding. Defence budgets in Britain have been under pressure for years due to a combination of economic factors and competing government priorities.[4] The cost of modern warships, particularly large capital ships, has escalated significantly. Managing these costs while maintaining operational readiness and renewing ageing platforms is a delicate balancing act. There is also the challenge of ensuring that long-term defence programs survive changes in government and political priorities. Delays or cost overruns can lead to projects being scaled back, re-evaluated, or even cancelled, creating uncertainty for the industry and the Royal Navy's future capabilities.

The shipbuilding industry relies heavily on a highly skilled workforce, ranging from engineers and naval architects to specialised tradespeople. Over the years, the industry has struggled with an ageing workforce and a shortage of skilled labour. The decline of heavy industry in Britain has meant fewer young people entering technical fields, creating a gap in skills crucial for shipbuilding.[5] Without a steady supply of skilled workers, the UK's ability to produce complex warships at the necessary pace could be severely hindered.

British shipbuilders also face intense competition in the global defence market. Nations such as France, Germany, South Korea, Japan, and the People's Republic of China (PRC) have developed advanced shipbuilding industries that challenge the UK in terms of price, production capacity, and technological sophistication. Britain's strategy of seeking to boost exports of warships, particularly with programmes such as the Type 31 class frigate, is ambitious, but achieving these goals will require competitive pricing and effective marketing in an environment where many nations prefer to build domestically.[6]

Modern naval warfare demands ships equipped with advanced systems for cyber defence, artificial intelligence (AI), and autonomous capabilities. This shift toward technology-driven warfare requires British shipbuilders to integrate increasingly sophisticated systems into their designs. Developing warships which are both capable of current operations and adaptable to future technological advances is a critical challenge.[7]

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[4] 'UK Defence Spending', House of Commons Library, 3 May 2024, https://researchbriefings.files.parliament.uk/ (checked: 10/09/2024).
[5] Paul Stott, 'Shipbuilding Policy in the UK: The Legacy of a Century of Decline and its Influence on Naval Procurement', *The RUSI Journal*, 168:5, https://doi.org/ (checked: 10/09/2024).
[6] 'Type 31 Frigate', Babcock International, No date, https://www.babcockinternational.com/ (checked: 10/09/2024).
[7] Lisa West, 'Royal Navy needs to "adapt faster," Second Sea Lord says', *UK Defence Journal*, 22/05/2024, https://ukdefencejournal.org.uk/ (checked: 10/09/2024).

The evolving nature of global threats underscores an urgent need to not only increase ship numbers, but also enhance the combat power and defences of the Royal Navy's existing warships. As potential adversaries advance their military capabilities, particularly in missile technology and naval warfare, it is crucial for the Royal Navy to adopt a multi-faceted approach to modernise its fleet.

The effectiveness of a naval fleet is significantly enhanced by Combat Management Systems that are interoperable with allies. As coalition operations become more common, the ability to share information and coordinate responses in real time is essential. Modernising these systems to facilitate seamless communication and joint operations with North Atlantic Treaty Organisation (NATO) and other allied forces will improve situational awareness and tactical decision-making. This interoperability extends to integrating different weapon systems and sensors, making the Royal Navy a more formidable partner in joint operations. Vertical Launch Systems (VLS) are integral to modern naval warfare, allowing ships to launch a variety of missiles efficiently and from a compact footprint. The adoption of standardised VLS across the fleet would not only streamline logistics and maintenance but also enhance interoperability with allied forces. A common system would also enable the Royal Navy to integrate new missile types and upgrades quickly, ensuring that its warships remain adaptable.

This should be enhanced through greater magazine depth and capacity, ensuring sustained combat operations with less need for resupply and providing operational commanders with greater flexibility. The development of longer-range and more survivable anti-ship weapons is crucial in ensuring that the Royal Navy can project power and deter potential adversaries. Current anti-ship missiles must be enhanced to extend their range, allowing for standoff engagement against enemy vessels while minimising exposure to counter-fire. Moreover, ensuring these weapons are designed with survivability in mind – whether through stealth features or advanced guidance systems – will significantly increase their effectiveness in contested environments.

In terms of ship defences, the rise of hypersonic and ballistic missile threats has made traditional defence systems increasingly inadequate. The Royal Navy should invest in advanced missile defence technologies capable of countering these high-speed threats. Systems that can detect, track, and intercept missiles at various altitudes and speeds are essential to protecting fleet assets. Additionally, integrating layers of defence, from long-range interceptors to close-in weapon systems (CIWS), will provide a comprehensive protective umbrella over naval operations. Integrating Laser Directed Energy Weapon (LDEW) capabilities into the layered defensive architecture of Royal Navy vessels offers a cost-effective and versatile option for addressing a range of threats,

including drones and missiles. By rapidly incorporating these technologies alongside CIWS like Phalanx, the Royal Navy can enhance its defensive capabilities while also reducing reliance on traditional munitions.

The emergence of new threats, including cyber warfare, drones, and hypersonic missiles, means warships must be equipped with advanced sensors and electronic warfare systems capable of being connected with an array of other sensors and platforms within a 'system of systems', and the ability to counter increasingly complex attacks. British warship builders must remain at the forefront of these technological innovations, working closely with the government to ensure that the Royal Navy can operate in an increasingly contested maritime environment.

Boosting the UK's naval shipbuilding is an imperative for national security. There are a number of catalysts which the government can employ to harness strategic advantage in order to empower warship production.

Catalyst I: Amplifiers

Amplifiers intend to increase strategic effect through coordination, integration, and innovation.

Working across government departments can significantly amplify British naval shipbuilding by fostering a coordinated and comprehensive approach to industry support. Collaboration between the Ministry of Defence, the Department for Business and Trade, and the Department for Education can streamline funding, training, and procurement processes, ensuring that resources are efficiently allocated to meet naval and industrial needs. By aligning defence priorities with industrial strategy, the government can provide consistent work pipelines for shipyards, creating stability for the industry, and encouraging long-term investments in innovation and infrastructure.

This cross-departmental effort also supports workforce development through tailored educational and apprenticeship programmes, ensuring the sector has access to the skilled labour it needs. Furthermore, cooperation across departments can help promote British-built warships in the global market, enhancing export opportunities and boosting the competitiveness of the UK's shipbuilding industry worldwide.

A closer working relationship between government and industry can amplify British naval shipbuilding by ensuring alignment on strategic goals, fostering innovation, and improving project delivery. Regular collaboration allows the government to communicate its defence requirements clearly, enabling shipbuilders to tailor designs and production processes to meet specific operational needs. This leads to more efficient procurement cycles and reduces the risk of delays or cost overruns in major shipbuilding programmes.

Such partnerships also encourage shared investment in research and development, driving technological advancements in areas such as automation, digital design, and green technologies. By working closely with industry, the government can support a stable pipeline of work, reducing the boom-and-bust cycle which has historically affected the shipbuilding sector. Moreover, this collaboration strengthens the UK's ability to compete in global defence markets, as the government's backing enhances confidence in British-built warships, boosting export potential and international partnerships.

Partnerships between government and educational institutions can significantly amplify British naval shipbuilding by fostering a skilled and innovative workforce. These collaborations enable the development of tailored educational programmes, apprenticeships, and vocational training designed to meet the specific needs of the shipbuilding industry. By aligning curriculums with emerging technologies and industry demands, such as digital engineering, automation, and sustainable shipbuilding, educational institutions can produce graduates with the expertise required to drive innovation in naval construction.

Government support, through funding and policy alignment, ensures that these educational initiatives are adequately resourced and accessible. This helps to address skills shortages, attract young talent to the sector, and ensure continuous upskilling of the existing workforce. Additionally, partnerships can facilitate research collaboration between universities and industry, accelerating advancements in shipbuilding technologies and processes, which enhances the competitiveness and global standing of British naval shipbuilding.

Catalyst II: Multipliers

Multipliers strive to broaden strategic impact by incorporating and aligning foreign actors.

Sharing best practices with allies and partners can act as a powerful multiplier for British naval shipbuilding by facilitating knowledge exchange, fostering innovation, and creating collaborative opportunities. By working closely with allied nations and industry partners, the UK can learn from successful approaches in ship design, construction techniques, and technology integration, incorporating these insights to enhance its own naval capabilities. This exchange can help improve efficiency, reduce costs, and accelerate project timelines.

Additionally, shared best practices can open doors to co-production agreements and shared procurement programmes, making British-built ships more attractive to global markets. Through these partnerships, the UK strengthens its shipbuilding industry while positioning itself as a leader in global

defence collaborations, benefiting both domestic production and international export opportunities.

Collaborating on research and development with allies and partners can significantly multiply the impact of British naval shipbuilding by pooling resources, expertise, and innovation. Joint initiatives allow the UK to leverage cutting-edge technologies developed globally, accelerating advancements in areas such as autonomous vessels, advanced sensors, cyber defence, and sustainable propulsion systems.

By sharing the costs and risks associated with pioneering technologies, these collaborations make innovation more cost-effective and accessible. Allied collaboration also fosters the standardisation of naval systems and equipment, enhancing interoperability during joint operations and making British-built ships more attractive for international markets. The exchange of knowledge and technology between partners helps to improve the quality, capability, and efficiency of British warship designs, giving the UK a competitive edge in naval construction. Ultimately, such collaboration strengthens both domestic shipbuilding and international defence relations, amplifying the global influence of the UK's naval industry.

Increasing international trade links throughout the supply chain can act as a powerful multiplier for British naval shipbuilding by enhancing access to advanced materials, technologies, and components from global markets. This enables shipbuilders to source high-quality and cost-effective parts, reducing production costs and improving the overall efficiency and competitiveness of British warships. International trade also allows UK shipyards to diversify suppliers, minimising risks associated with supply chain disruptions and ensuring a steady flow of critical resources.

Furthermore, by integrating globally sourced innovations and technologies into ship designs, British shipbuilders can enhance the capabilities and sophistication of their vessels, making them more attractive to both the Royal Navy and international customers. Establishing robust trade partnerships across the supply chain also opens up opportunities for reciprocal agreements, where British-built components and technologies are exported abroad, fostering economic growth and strengthening the UK's position as a leading player in the global naval shipbuilding market.

Catalyst III: Accelerators

Accelerators aim to speed up strategic success through new mechanisms, programmes, and institutions.

Increased government funding for research and development would serve as a powerful accelerator for British naval shipbuilding by driving technological

innovation, improving efficiency, and enhancing the global competitiveness of UK-built warships. Investment in cutting-edge research and development enables shipbuilders to explore advanced technologies, such as autonomous systems, AI-driven operations, advanced materials, and sustainable energy solutions, which can be integrated into next-generation naval vessels. These innovations improve the performance, survivability, and adaptability of British warships. Government-backed research and development also encourages private sector investment, stimulating further innovation and collaboration across the industry.

By reducing financial risks, more funding allows for experimentation with breakthrough technologies, helping to reduce production costs and improve project timelines. This strategic support boosts the ability of the UK to develop warships which meet the evolving demands of modern warfare, ensuring that British shipyards remain leaders in the global defence market and enhancing export potential.

Creating strong links between civilian and naval shipbuilding can act as a significant accelerator by facilitating the transfer of skills, technology, and best practices between the two sectors. Civilian shipyards often have experience in areas such as modular construction, digitalisation, and automation, which can be adapted to naval shipbuilding to enhance efficiency, reduce production costs, and shorten project timelines. By adopting successful techniques from the commercial sector, naval shipyards can further modernise their operations and become more competitive. These links also help build a more flexible and skilled workforce, as expertise in areas including advanced engineering, design, and sustainability can be shared across both sectors.

Furthermore, civilian shipbuilding's experience with large-scale production and supply chain management can improve naval procurement and manufacturing processes. This collaboration fosters innovation, optimises resources, and supports the overall growth of the UK's shipbuilding industry, enhancing both civilian and naval capabilities.

Tax incentives for new shipbuilding facilities would act as a powerful accelerator for British naval shipbuilding by encouraging investment in state-of-the-art infrastructure, driving innovation, and boosting production capacity. These incentives would reduce the financial burden on companies looking to modernise or expand their facilities, allowing shipyards to invest in advanced technologies such as automation, digital ship design, and environmentally sustainable practices. New and upgraded facilities would enhance efficiency, enabling faster, more cost-effective construction of complex naval vessels, from frigates to submarines. Additionally, modernised shipyards would attract skilled labour and foster the development of a highly specialised workforce, critical for meeting the growing technological demands of naval

shipbuilding. Furthermore, tax incentives could stimulate regional economic growth, creating jobs and promoting long-term investment in the shipbuilding supply chain. Ultimately, this would strengthen the UK's naval capabilities while increasing competitiveness in the global defence market.

Catalyst IV: Extenders

Extenders attempt to further strategic reach via new enablers, logistical networks, and points of control.

Performing an analysis of the health of the supply chain would act as an extender for British naval shipbuilding by identifying vulnerabilities, inefficiencies, and opportunities for improvement. A thorough supply chain assessment would help ensure that shipbuilders have access to critical materials, components, and technologies needed to meet production schedules and deliver advanced warships on time and within budget. This analysis would also enable the identification of potential risks, such as supply shortages or over-reliance on particular suppliers, allowing the industry to develop mitigation strategies such as diversifying sources.

By improving resilience and flexibility, the UK's naval shipbuilding sector can better respond to global disruptions, market changes, or future technological demands. Additionally, optimising the supply chain can reduce costs and lead times, making British naval shipbuilding more competitive internationally. A robust, well-managed supply chain ultimately enhances the UK's ability to meet both domestic and export demands efficiently.

Increasing the use of diplomatic networks would act as an extender for British naval shipbuilding by promoting British-built warships to global markets and forging international defence partnerships. Diplomats can play a pivotal role in marketing UK naval technologies and expertise, building relationships with foreign governments, and facilitating defence contracts. By leveraging these networks, Britain can showcase its shipbuilding capabilities in key regions, such as Asia, the Middle East, and Europe, where naval modernisation efforts are underway. Diplomatic efforts can also open up opportunities for co-production agreements, joint ventures, and technology-sharing initiatives, all of which expand the global reach of British shipbuilding. In addition, diplomats can help navigate complex regulatory environments, easing trade negotiations and defence procurement processes.

This not only strengthens the UK's presence in the global defence market but also enhances the nation's soft power, fostering strategic alliances and boosting the long-term sustainability of British naval shipbuilding.

Enhancing the National Shipbuilding Office (NSO) would act as an extender for British naval shipbuilding by providing stronger oversight, coordination, and long-term planning across the industry. An expanded NSO could serve as a central authority, streamlining communication between government, shipbuilders, and the supply chain, ensuring that shipbuilding projects align with national defence needs and industrial goals. With a more robust NSO, the UK could better optimise procurement processes, reducing delays and cost overruns while fostering innovation through collaboration with industry leaders.

The NSO could also further support strategic workforce development by coordinating training programs and apprenticeships to address the skills gap in shipbuilding and engineering. Additionally, an empowered NSO could play a pivotal role in driving exports by aligning domestic shipbuilding capabilities with international demand, promoting British warships globally, and identifying new markets. This would strengthen the UK's competitive edge, guaranteeing that British naval shipbuilding remains globally relevant and economically sustainable.

Conclusion

Empowering warship production is vital for British national security because it ensures that the Royal Navy remains capable of defending the nation's maritime interests and responding to emerging global threats. A strong naval shipbuilding industry allows the UK to maintain a modern, adaptable fleet that can safeguard trade routes, protect territorial waters, and participate in international peacekeeping missions. Enhancing supply chain resilience, building partnerships, and fostering innovation all bolster the UK's ability to stay ahead in naval warfare, securing its defence posture in an increasingly volatile world. By employing the catalysts explored in this paper, the British government can ensure that the Royal Navy remains a potent force on the global stage.

*This Explainer is part of the Council on Geostrategy's **Strategic Advantage Cell**.*

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