Browne Jacobson

From satellites to security: Dual-use technology takes flight

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As global tensions rise and geopolitical instability influences government priorities, the UK has significantly increased its defence budget, recognising the critical need to modernise military capabilities and fortify its industrial sector.

This renewed focus on defence innovation opens up valuable opportunities across the UK, from Scotland's innovative tech hubs to Northern Ireland's cyber security advancements and Wales' flourishing aerospace industry, each playing a key role in strengthening national security while driving economic growth. This shift is vital as the UK positions itself to navigate an increasingly unpredictable global environment.

Browne Jacobson's 'Brave new world: Trade, innovation and investment in space, aerospace and defence' event, organised in collaboration with the Department for Business and Trade, Ship Shape VC and Walmer Group, highlighted the potential contribution to these efforts from across the UK.

The event in Cardiff gathered influential figures from business, government and investment sectors to discuss how the UK can seize the growing opportunities in aerospace, space and defence.

One of the panels explored the dual-use nature of aerospace and defence technologies, and how these sectors can support both economic growth and national security.

Dual-use nature of aerospace and defence technologies

Aerospace and defence technologies are increasingly characterised by their dual-use capabilities – technologies that are initially developed for military purposes but later adapted for civilian applications, or vice versa.

These dual-use technologies are seen as essential to advancing both defence capabilities and commercial opportunities. Technologies such as GPS, drones, digital photography, the EpiPen and even the microwave are all prime examples of technologies that have been developed for military purposes before being exploited commercially.

While these innovations can serve national security interests, they also have far-reaching benefits for civilian industries, ranging from telecommunications to disaster response and even autonomous vehicles.

A Stanford University team backed by DARPA (the US military's innovation arm) made breakthroughs in self-driving tech, caught Google's attention, and now we have Waymo - a $45bn company operating over 200,000 paid robotaxi rides weekly.

Space Dots is a company at the forefront of this dual-use technology, providing space environmental intelligence that enhances the safety and efficiency of both commercial and defence missions.

Its technologies, originally developed for commercial space operations, provide a holistic view of the natural risks and hazards of orbital environments, delivering actionable, mission-critical insights on design, planning, and risk mitigation. These capabilities can be directly applied to defence and military space assets, enhancing operational resilience and mission safety.

'Brave New World' had a number of Welsh businesses in attendance with technology or products that were first created for civilian applications, but which have significant opportunities in defence:

- **Space Forge**, a company specialising in in-space manufacturing using its ForgeStar reusable satellite platform, leverages microgravity and other space conditions to produce advanced materials for industries like semiconductors, pharmaceuticals, and aerospace. The company's technology has dual-use potential, benefiting both civilian and defence applications. It has received significant investment, including backing from NATO's Innovation Fund, highlighting its strategic importance in aerospace innovation.
- **Metrology Engineering Services**, a leading provider of aircraft structure assessments and digital asset management, deploys innovative laser tracking and scanning technology to reduce asset downtime, facilitate updates and modifications on existing assets, as well as improving efficiency and cost reductions on new programmes. This is critical as lead times for new military vehicles are under immense pressure as Europe rapidly increases its defence spending.
- **Deploy Tech** – the creator of a flat-packed, rapidly-deployable concrete water storage tank. Its original target market was critical emergency infrastructure for hospitals, with clear applications for disaster relief, but it has found new applications in defence (forward operating bases etc).

These are examples of the sector's versatility and how technologies can support both civilian and defence applications.

Reputational risks in crossing between aerospace and defence sectors

While dual-use technologies offer significant economic and technological benefits, they also present reputational risks.

The public's perception of the defence sector is often fraught with controversy, with many individuals and organisations hesitant to be associated with defence applications. As aerospace and space companies navigate the complexities of dual-use technologies, they must balance the need for innovation with reputational risks associated with the sector.

This challenge was addressed during the Brave New World event. Traditional negative perceptions on defence overlook the broader context of national security, which extends far beyond weapons to include issues such as infrastructure resilience, disaster response and the protection of national interests in space.

By focusing on how technologies can enhance both national security and global safety, suppliers can mitigate the negative impacts of being associated with the defence sector and instead highlight their contributions to the wider good.

Navigating reputational risks and capitalising on opportunities

For aerospace and defence companies, managing reputational risks requires a clear strategy that includes transparency, ethical considerations and the ability to communicate the positive aspects of their work.

By showcasing how dual-use technologies can protect both civilian and military interests, companies can navigate public concerns and enhance their standing in the marketplace.

In addition to reframing narratives, companies must also build strategic partnerships with governments, policymakers and international organisations to demonstrate the broader societal benefits of their work.

Cultivating relationships with policymakers, especially in the context of national security, is crucial as these partnerships can help shape the narrative and align defence technologies with national objectives. This can help companies to not only mitigate reputational risks, but also contribute meaningfully to the economic and security needs of their countries.

The growing significance of space as a domain for national security and economic opportunity also presents a promising avenue for aerospace and defence companies to thrive. In the face of mounting geopolitical tensions, space technologies – ranging from satellite communications to space-based intelligence – will become increasingly important in both civilian and defence applications.

Companies that develop these technologies can position themselves as essential players in securing the UK's space assets, improving national infrastructure and addressing global challenges such as climate change and disaster management.

UK's strategic advantage in aerospace, space and defence

The UK, with its diverse and highly skilled regions, is uniquely positioned to leverage these dual-use technologies. Each region, including Wales with its rich history in aircraft manufacturing, satellite technology, and space exploration, contributes significantly to the UK's strategic objectives in aerospace, space, and defence.

The Brave New World event illustrated how businesses can capitalise on these opportunities, particularly in light of the UK government's increased focus on defence innovation.

Final thoughts

As global tensions rise and the UK ramps up its defence spending, aerospace and defence technologies are playing an increasingly important role in both national security and economic development.

The dual-use nature of these technologies offers significant benefits for both civilian and defence sectors. However, companies in this space must be mindful of the reputational risks associated with working in the defence sector.

By reframing their narratives and building strong relationships with policymakers, aerospace companies can mitigate these risks and position themselves as key players in the future of space, aerospace and defence.

In this context, UK businesses have the opportunity to become leading contributors to these efforts, driving innovation and supporting the UK's national security agenda.

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