Can the Defence Sector Innovate?
Foreword

The UK currently faces multiple threats to its national security, threats which appear to have developed quickly and were unforeseen as little as ten years ago.

The threat from nation states like Russia, terrorist organisations like ISIS, cyber-security threats, both state-sponsored and non-state sponsored, pose the greatest challenge to the defence establishment since the end of the Cold War.

Simultaneously, the squeeze on public finances has severely impacted, and will continue to impact, defence procurement. Some programmes have been scaled back or even cancelled, all of which makes defence contractors all the more unwilling to invest in speculative R&D, particularly as the government squeezes the margin that companies are permitted.

However, the defence sector cannot just point the finger at government. Unquestionably, major defence programmes and those contractors who deliver them, need to improve delivery timescales and risk management, whilst wrestling with increasing complexity and shortages in specialist skills.

The way the government, the military and defence contractors respond to these challenges, the external threats and the financial restrictions, will determine our future security and prosperity. Innovative solutions are needed, but is the defence sector capable of rising to the innovation challenge?

The answer is not a simple yes or no. Many barriers remain in the way of effective defence procurement that are unheard of for other sectors of the economy. At a recent round-table discussion hosted by Holmes Noble, we asked 25 board-level attendees from defence contracting companies for their view on the current challenges facing defence procurement and whether the sector can truly innovate.

The format of the event was Chatham House Rules, which precludes the direct quoting of any individual, but the key themes of the evening are clear, namely a desire for more leadership from government; a recognition of the need for more collaboration and the need for a change in mindset amongst defence contractors. Throughout there are verbatim quotes from a number of the attendees plus references to the Boston Consulting Group’s Innovation in Defence White Paper which framed much of the evening’s debate.

It is our pleasure to publish this white paper and hope it will be a thought-provoking addition to the continuing innovation debate within the sector.

Thank you for reading.

Michelle Carson-Williams
Chief Executive of Holmes Noble
BARRIERS TO INNOVATION
Some years ago, I tendered for an opportunity as an incumbent supplier, but we had a threat from the United States and were worried about their ability to beat us on cost due to their volumes.

The bid required a compliant bid but also encouraged innovative solutions to save money.

We gave them two options, the compliant solution and an innovative proposal to take the old inventory, product which had gone beyond its shelf-life, refurbish it, and give it another five-year warranty; in essence it would only cost a third of the price.

We won the contract, but it was the compliant option.

When we went to the winners debrief and asked why they didn’t go for the innovative solution, we were told “Because the other guy didn’t bid it”, which meant that they didn’t know how to judge it, hence it was rejected. An example of sticking to process to produce the wrong answer.

Roundtable Participant

Rules and Regulations

The defence sector is competitive, but it is not a free-market. It is a regulated market in terms of approved bidders, sole source regulation and export restrictions. For example, the UK’s only submarine supplier is BAE Systems and the only supplier of nuclear-related products is Rolls Royce. This situation automatically reduces competition.

By way of illustration, the 1958 US-UK Mutual Defence Agreement allows the United States and the UK to exchange nuclear materials, technology and information, with Rolls Royce now holding all of the intellectual property shared by the United States. This has now provided Rolls Royce with an unassailable sole source position.

Whilst this situation has clear security advantages, it also has the potential to stifle innovation, not due to complacency, but rather the inability to collaborate.

Procurement rules were also a concern for our round-table attendees, particularly in relation to stifling innovation.

All-too-often an innovative idea was rejected because it was outside of the procurement brief or those responsible for tenders did not know how to evaluate it.
Collaboration

The majority view of our panel is that collaboration is key to defence innovation in the future. The UK’s defence spending is not large enough to support a defence industrial base and therefore, collaboration between companies is vital, along with the ability to exploit export markets.

The defence industrial base needs to adopt modern supply chain management, but the industry perceives that it has more to lose than gain. The government’s competitive procurement and value-for-money policies inhibit companies working together.

In the future, the defence industry will have to engage with academia and civilian equipment developers at a much earlier stage in the design process and be more open to exchanging information between companies – all of which can ultimately reduce lead times for technology and potentially cost.
One of the arguments put forward during the discussion is that the defence sector is innovative, but the pace of innovation is slow because of the extra hurdles that defence contractors have to go through before orders can be placed. The result is that the potential Return on Investment is significantly delayed or minimised compared to the private sector. Typically, investors in the private sector are looking for circa 20-30 per cent ROI.

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Defence is not like the commercial world where you develop an innovative world-leading product and roll it out to the market. In the defence world, if you develop an innovative world-leading product, the rules prevent you from exporting in order for our own armed forces to have sole access to the technology.

Roundtable Participant
If you “don’t care for the people that you manage, whose livelihoods depend on you, then why are you there in the first place and who put you there?”

**Government Non-Intervention**

The majority of the panel thought that British business has to get much better at working together to win defence contracts. All-too-often, companies are not able to put aside decades long competitive rivalry to take part in a bid that it is in the national interest, with each trying to be the lead contractor.

Due to this competitive nature in the industrial base, which has had positive outcomes in the domestic UK market, the government cannot be seen to be supporting one British company over another. So, by the time there is only one British company left it is often too late.

Significantly, the attendees all agreed that government leadership is vital in defence procurement. Very often, with export defence contracts, the buyer is purchasing from Britain because having the UK Government and the armed forces’ seal of approval tips the award in the UK’s favour. Take the recent examples of the Type 26 win in Australia and the Typhoon contract with Qatar. Both campaigns had significant effort from the Prime Minister down.

"The French government is very interventionist. They organise their industrial base around the export opportunity.

They’ll say, “Company A, you’re going to be prime and everybody else is going to be a subcontractor. And they actually get behind who is best to win that export contract.

It becomes a France PLC bid rather than an individual company bid, with everyone from the government down working together."

Roundtable Participant
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The panel were in agreement that the lack of R&D expenditure in the UK had a detrimental effect on defence innovation.

Across the defence sector, R&D spending is circa 3-4 percent compared to circa 20 percent for the pharmaceutical sector. The graph opposite illustrates the relative paucity of UK defence expenditure on R&D compared with companies in the automotive, IT and aerospace sectors. Interestingly, Microsoft spends almost three times more on R&D than the entire UK defence sector. This means it is increasingly impractical for UK defence to keep up with technology through independent and bespoke development.

Why are these figures so low? It comes back to ROI - a number of panellists had direct experience of highly innovative defence solutions being barred from marketing because of its highly sensitive nature and then only being allowed a mid-single digit net margin.

In the pharmaceutical industry by contrast, companies are allowed to charge higher prices to the NHS to pay for R&D.
The Defence-Skill-base

The UK’s defence sector is in a war, a talent war which is being waged against all the other sectors that need high quality people with the right skillsets.

Nowhere is this war more acute than in the area of cyber-security. Only last year, NATO officially reported an average of 500 cyber incidents per month - an increase of around 60% over 2015.1 Our panel agreed almost unanimously that the UK and its defence contractors needs to attract and retain not only the best people, but also the best companies in the UK and under UK control.

Footnotes
1 NATO Cyber Defence Factsheet 2017

Shareholders got a good deal with ARM Holdings, but why couldn’t the company continue to grow bigger and bigger and bigger in the UK? Margaret Thatcher got it right when she overturned the decision to give Boeing the utility helicopter contract, giving it to Westland instead. It was in the long-term interest of the country. No one in Parliament or the media questioned the decision. The bigger picture surpassed the parochial ‘value-for-money’ decision.
Collaborative Mindset

Our first solution is for the UK’s defence industry to take on a more collaborative mindset. And that change in mindset needs to include both like-minded countries and defence contractors. Greater co-operation between countries will help nations bear the burden of the ever-escalating budgets for defence R&D, whilst greater co-operation between companies involved in defence work will enable the cross-fertilisation of ideas and a R&D cost.

The key to both of these is a change in mindset, one which embraces collaboration and mutual support, rather than the siloed, ultra-competitive approach which too often stands in the way of real progress.

Although armed forces have realised that other military and non-military actors, public and private, can deliver certain tasks more effectively and efficiently than many defence organisations themselves, the process of further international integration of the armed forces and outsourcing has been slow.

Boston Consulting Group, Innovation in Defence, page 15
Does radical change require external appointments?

“We recruit from within” is an old maxim that we hear a lot. However, our experience has shown that sometimes it takes an outsider to effect real change. This is particularly true in turnaround situations that require a specific skillset from potential CEOs.

In our experience, a fresh approach provides perspective. Those who have been in place too long often do not have the breadth of experiences that provides innovative thought. In other words, they ‘can’t see the wood for the trees’ or are restricted by ‘group-think’ and personal relationships built up over many years and may potentially be set in their ways.

Can long-servers take on the role of the outsider? Yes, but it’s always more difficult and requires, from the new CEO, a fresh look at the cultural norms and a balance between experience and a new perspective.
Our third solution is more government intervention and leadership. As explained earlier, in defence, governments want to buy from governments, with the state effectively underwriting the costs. The government also acts as a leader, organising and facilitating tender exercises, selecting the lead contractor and ensuring that competitors and other companies support the bid. The government have a crucial role in cultivating innovation in the sector as they have the ability to foster collaboration between contractors and encourage healthy competition. This level of intervention and facilitation has consistently been missing from UK bids for major defence contracts and has almost certainly cost us over time. There needs to be a change in mindset within government towards a more proactive, interventionist stance, leading to UK PLC bids that will ultimately benefit all.
Government needs to become an ‘intelligent customer’

One of the key themes that came out of the discussion was the wastefulness of the defence sector, in terms of cancelled projects, overrunning timescales and out of control budgets.

The term ‘intelligent customer’ was used particularly in relation to project delivery. In the words of one participant, “There is no depth of knowledge to manage a programme to deliver a submarine or an aircraft carrier.” This includes looking at the long-term cost implications i.e. the whole life costs of projects, rather than the headline cost.

The intelligent customer approach would involve the government accurately defining what it needs from the defence sector, based on risk assessment and the nature of the threat, rather than the defence sector ‘hawking’ its wares to government in the hope of landing a fish.

Armed forces have to leverage the often-superior industry expertise and efficiency. A proactive industry strategy should include building a supplier ecosystem of private-sector partners that is able to serve the armed forces need for innovation and that is based on strategic decisions and proactively managed.

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Better supplier relationships

The current tendering model for defence contracts is very transaction driven, in other words, “We need some of these can you tender for it?”. Inevitably, this approach leads to the cancellation of projects as priorities change, the nature of the threat evolves or even when individuals change jobs.

It was agreed that a new approach was needed based on long-term partnerships. The Boston Consulting Group describes this as a ‘supplier ecosystem’ in which relationships are proactively managed through strategic decision-making. Those involved in the ecosystem should be qualified, integrated early to avoid project delays and budgetary over-runs.

Holmes Noble always appreciate feedback and comments on our papers. We welcome an opportunity to discuss your leadership challenges and developments within the sector.

Michelle Carson-Williams
Chief Executive

dd: +44 (0) 121 779 0857
m: +44 (0) 7989 475461
e: michelle.williams@holmesnoble.com