BRITISH ARMY

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Army acquisition: A flexible friend or process in need of urgent retail therapy?

²⁴ **AGILE PROCUREMENT**

CHACR

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INTRODUCTION

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On the 7th September the Field Army sponsored a conference
that the CHACR team kindly pulled together to look at the
following research question:

*Recognising technology as a fundamental driver for change, examine an
agile approach that harnesses procurement, commercial practice, capability
integration and strategic aspirations to work in concert to service the
Army's future requirements.*

The case for change

The exponential curve of technological advancement means
we must adapt if we are to retain our status as a 'reference
Army' within NATO. The speed at which data can be
harvested, processed and used to identify and prioritise targets
has shown that our processes are not optimised to keep pace
with these developments. There is a requirement to place
capabilities previously held at brigade or battlegroup level into
the hands of companies and platoons to enable them to find
and strike targets at much greater distances.

Our doctrine demands that we are agile when conducting
operations; this must be underpinned by an agile procurement
process. Failure to do so will see our battlefield agility limited
to tactical outcomes and will not provide the strategic agility
war will demand. This requires procedural changes, but
more importantly cultural ones too, particularly around
how we view risk and the balance between performance,
time and cost. Equipment that uses mature technology and
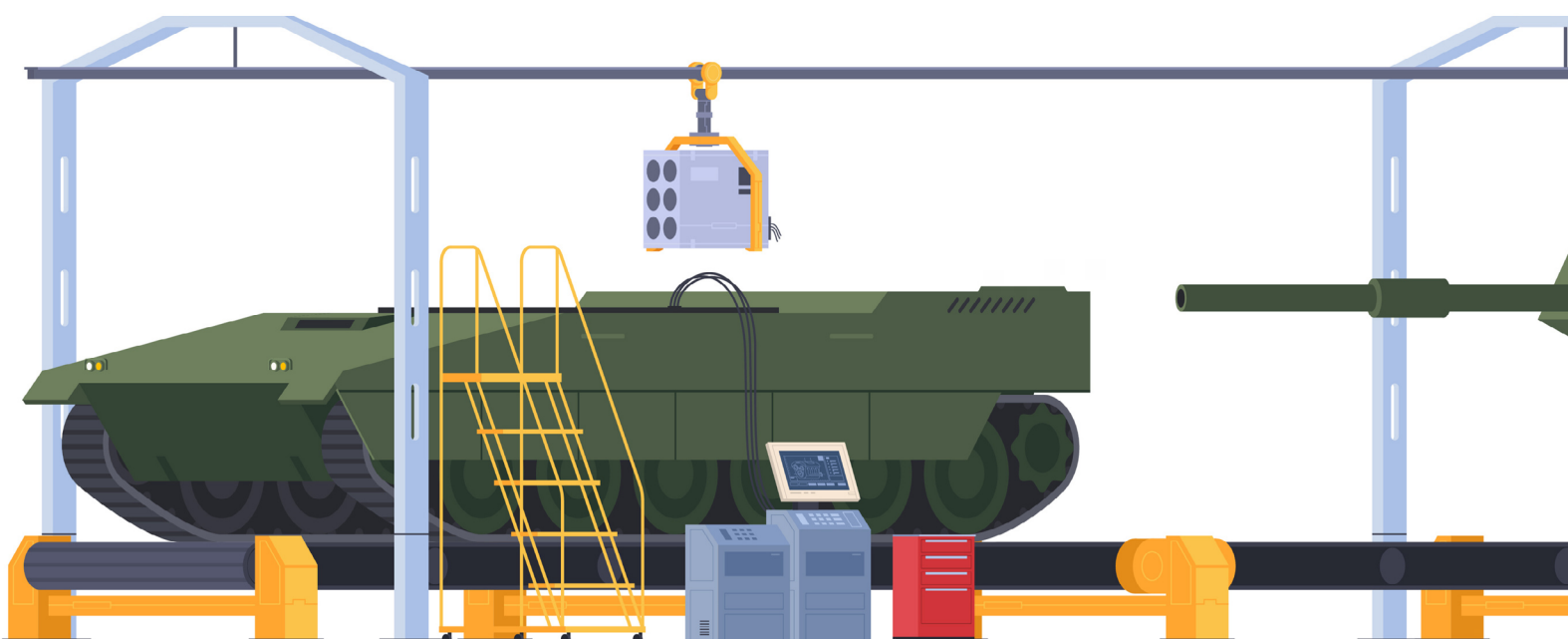
can be delivered on time in the right quantities must be privileged over exquisite equipment that promises much but is unavailable soon enough. As an example, according to RUSI, around 90 per cent of drones used by the Ukrainian Armed Forces between February and July 2022 were destroyed. Our system must be able to replenish these key components in the sensor-to-shooter chain quickly if we are to achieve the decision advantage that is so crucial to winning engagements on the modern battlefield.

To achieve this we must develop our relationship with industry. Many of the successes seen in Ukraine are based on using and adapting existing commercial technology, particularly those that are software based. Our demand signal must be grounded in reality; we need to work together to ensure we are able to sustain the delivery of equipment and munitions at short notice and in the volumes that war demands. We cannot ignore the financial challenges the Government faces, but the Ministry of Defence is frequently criticised for wasting money. Changes to the procurement system must deliver value for money and contain sufficient safeguards to prevent us from rushing to failure.

Why was this question Field Army-sponsored when this arguably lies more in the domain of those in the Army Headquarters? As part of the Army's newly established Force Centric Capability Management philosophy, the Field Army has a responsibility to inform the demand signal for the new capabilities we need. As war rages in eastern Europe the assumptions around what constitutes today's most pressing threat have changed and feel much closer to home. Our current procurement methods arguably reflect the unspoken assumption held since the fall of the Berlin Wall that war would not return to Europe, and we would have plenty of time to react if it did.

The war in Ukraine has brought into sharp focus the need to ensure the Field Army is able to 'fight tonight' and therefore we need to change the way we acquire equipment and incorporate it to forge potent and coherent capabilities. We must be in a position where we are able to leverage current


Picture: CC0 1.0

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technology more quickly; as we reflect our adversaries are already identifying lessons and adjusting their procurement strategies accordingly, as seen by Russia's exponential increase in 'A' vehicle and uncrewed air systems production. This approach is at the heart of the 'How We Fight 26' concept and is critical to setting the conditions to achieving the recently published Land Operating Concept.

Under the Army Operating Model, capability sponsorship[1] is federated across the Army, with the lead for a particular capability being determined by where it is in its lifecycle. Broadly speaking, sponsorship is led by the Futures

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[1] *The long term, through life proponency and conscience for specific capabilities... responsible for enduring capability requirements, for capability in-service and for residual capability risks.*
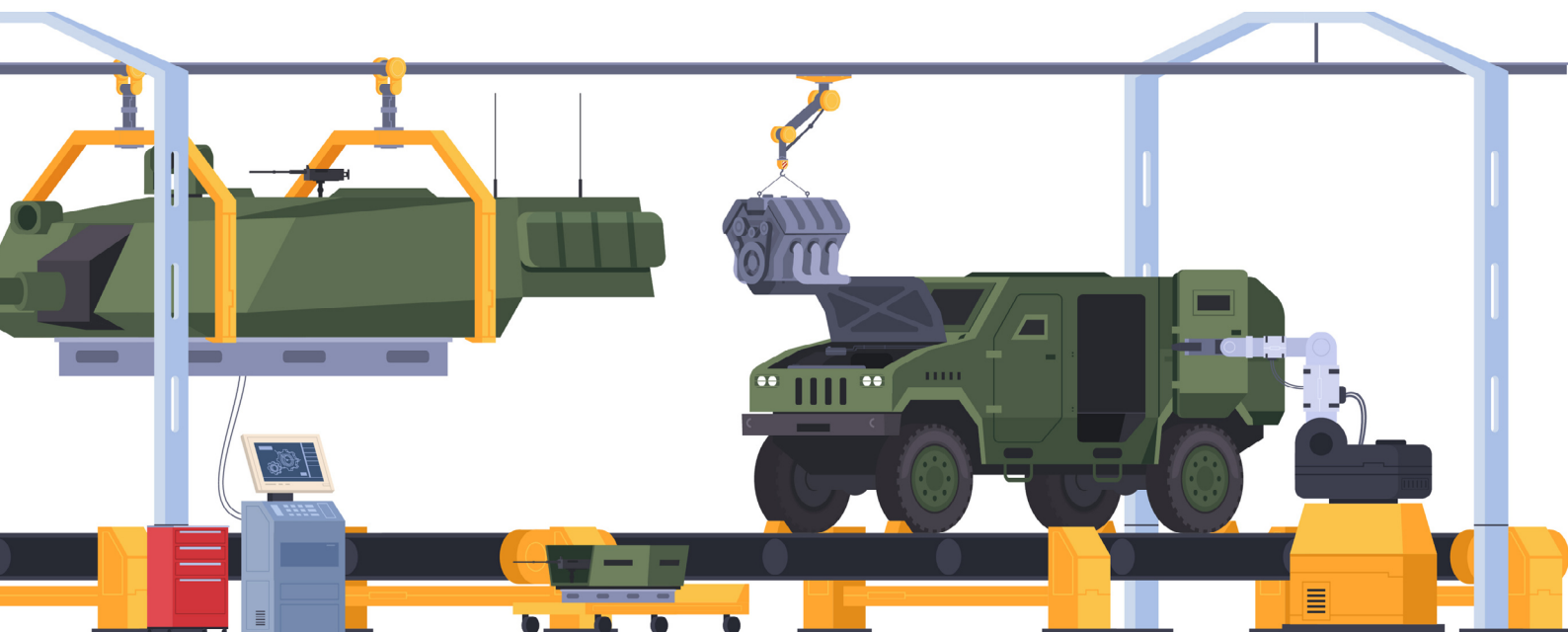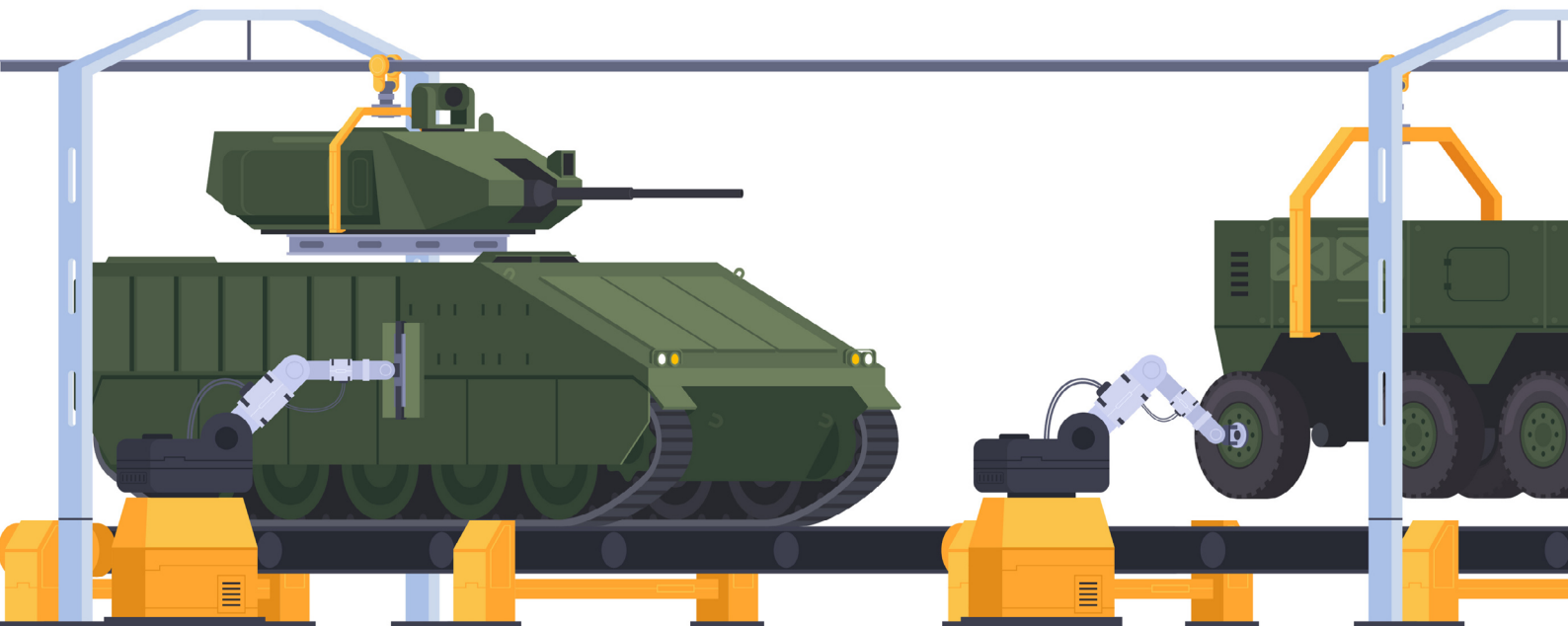
Directorate for future capabilities, i.e. those that are in the pre-concept phase, by the Programmes Directorate for capabilities in development prior to entry to service or for initiatives to deliver through life capability management, and by the Field Army/Joint Helicopter Command for those capabilities that are in-service. It is therefore clear that the responsibility for ensuring the delivery of the right capabilities into the hands of our soldiers in a timely fashion is the responsibility of not just the Field Army, but of the three two-star leads from these organisations, hence why this foreword is co-authored.

Recommendations
The conference was well supported by colleagues from industry, from the wider defence enterprise (notably MOD and Defence Equipment & Support) and from across the Army; we are very grateful for your engagement and your insightful contributions. When discussing the question, it became evident that we need to define what we mean by 'agile'. 'Agile' does not mean creating a 'free for all'-style bandit country, but must focus on getting rid of silos, removing overly complex bureaucracy and ensuring there is a real clarity around the purpose of the procurement.

Agile was used interchangeably in discussions to describe a requirement to do things faster as well as doing things better. During the first panel Mike Sewart, the chief technical officer at QinetiQ, drew on lessons from the IT sector and outlined a model of 'fast' and 'slow' procurement. This neat encapsulation of two operating models bound by one culture separated programmes with substantial risk profiles that must be subject to enhanced scrutiny from those with lower risk profiles where processes should be quicker. We will come back to risk, but we must recognise that some aspects of our Defence Lines of Development are simply much less able to be agile than others, for example changing training programmes can often be done at the stroke of a pen, vice the provision of new infrastructure which may take years.

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The Army isn't standing still. We have recognised the issue and last year re-invested over £1 billion of underspend in key 4+1[2] capabilities. This year's Equipment Programme Balance of Investment is seeking to create further headroom to allow greater freedom for us to target what we need; we now need the processes to support this intent. We have begun to see the impact of the Programmes Directorate's Rapid Acquisition Team with Archer 6 x 6 and the c.500 logistic vehicles that are being procured in-year. However, both of these are 'major' projects; we also need to focus on easing some of the bureaucracy that surrounds much lower cost purchases where we can 'fail fast', or as Matt Odell, chief executive officer of MilUX, said "learn fast". While the lessons from Archer are being folded into subsequent major projects, the same team is also exploring alternative routes to acquire low-cost, high impact capabilities at speed. The acquisition of Scytale routers to provide the Deep Recce Strike Brigade Combat Team with the ability to transmit Bowman communications over 4G – essentially globalising our current communications system – in less than two months is a great example of innovative approaches to procurement in partnership with industry. If we look at how the defence enterprise has supported Ukraine we need to ensure the lessons identified in the provision of equipment and capabilities are being drawn through into our routine processes; it can sometimes appear that the Ukrainian Armed Forces are disposing of capabilities that we are still trying to procure.

Throughout the conference the golden thread linking almost all discussions was trust. Building trust takes time. You can surge increases in resources but you cannot surge trust. We must develop a way of having candid conversations between those parties who understand how to define the problem,

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[2]*Long range fires, Electronic Warfare, Air Defence, UAS + Logistics.*
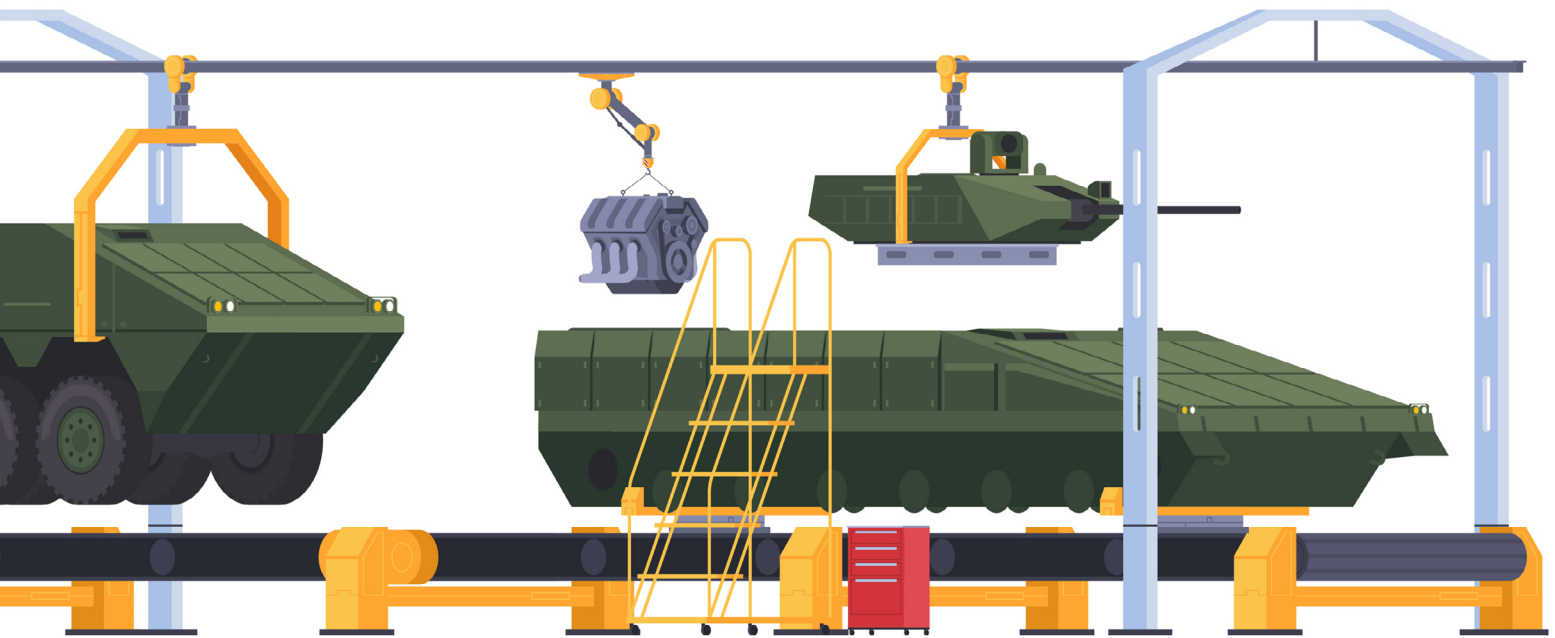
those parties with the ability to offer solutions, and those parties who are empowered to act. This conversation must be based on mutual respect and be undertaken with a view to building short and long-term benefits for all parties. As Emma Wilkinson from Adarga described, we need to build ecosystems that are based on trust and led with a sense of purpose. We need to move away from the sense that all interactions are transactional and towards one where we have a better collective understanding of what benefits each party is seeking. This closer relationship with industry is already happening – the Land Industrial Strategy heralded our intent to do more with rather than to industry, and we have already made significant successes just by having built relationships early and better understanding the art of the possible. The analogy of dating became a theme in several conversations throughout the day; we must start by understanding what interests each party and build from there. Establishing a common purpose is a critical component of bridging between the different motivations of each party. We collectively need to look at how we could use schemes such as secondments to build longer term trust between us.

We need to look at how we remove, or at least mitigate, the fear of getting something wrong that is adding layers of bureaucracy to our processes. This requires buy-in from both sides as threats of legal challenge are deeply unhelpful. To help with this process we need to ensure we have the right people in the room to make decisions and enact them. We undoubtedly have a challenge to understand how we can empower people while ensuring coherence across our organisation, but Defence is not unique in this regard. Fewer decision makers may provide greater top-level buy-in, but if access to them is too difficult the process will only become slower and less agile.

Earlier in the article we said we would return to risk. Several

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exchanges challenged how our system was able to react in a crisis to supply equipment more rapidly, such as to the Ukrainians or as urgent operational requirements, but is unable to replicate this for routine business. There is no doubt there are lessons to be drawn from when there is a clear imperative that drives focus, trust and goodwill. A Defence Equipment & Support colleague noted this drives us to sprinting rather than running a longer race, and can only be sustained for short periods or at the expense of other activity. Too make a faster approach sustainable we need to allow our people to solve problems rather than fight processes; too many well-intended regulations are outdated or counterproductive.

As part of this process, we need to be clear on what risks we are addressing. Statements such as 'imagine what the *Daily Mail* headline will be' create the sense of fear referred to above and are unhelpful. While reputational risks certainly need addressing the weight of effort given to them can often be out of kilter to that given to addressing the risks around delivery, including those relating to the legal and safety issues. Reputational risk matters, but so does risk to mission, and risk to life. We must do more to ensure we align the impact of projects failing with the processes required to acquire capabilities; for 'fast' capabilities we can afford to take more risk and 'learn fast' to speed up our delivery timelines.

The overriding sense from the conference was one of a useful forum to continue, or in some cases start, the conversations that need to occur more frequently and in a more collegiate manner that reflects the mutual benefits we are seeking to achieve. Only by working together more closely within the Army and Defence and with our industry partners will we make the changes we require to modernise our force and give our soldiers the capabilities they require.

The threats to our nation and allies demand nothing less.

AGILE PROCUREMENT – TEAMWORK, TRUST AND TIMELINESS?

Maj Gen Dr A R D Sharpe
Director, CHACR

The opening article in this *Ares & Athena* explains the imperative to make the procurement of military capability much more agile, responsive, time-sensitive and flexible: it is a cornerstone of effective performance on the battlefield for a twenty-first century army. It also explains why the Field Army asked the CHACR to spend some time looking at the subject, as a 'critical friend', in order to help with as many views from "outside, but close to, the Army" as possible.

This *Ares & Athena* may, therefore, feel unwelcome and over-critical of those who put so much endeavour into providing the Army with the capabilities that it so desperately needs. It is not meant in that spirit. For the last eight years, the attendees on the annual Army Generalship Programme (those senior officers newly appointed to major general rank and those equivalent Senior Civil Service personnel from within the Army) have, course after course, alighted upon this subject as one that needed their collective attention, as 'curators of the Army', regardless of their actual appointments. This has been a hardy annual of a problem, returning year-on-year with vigour. This *Ares & Athena* aims to help to move that discussion forwards.

Within the Army, especially in the more senior ranks, there seems to be two fairly distinct camps in the approach to this apparent problem. One camp is of the view that the system is not good enough, out-dated, ponderous, inefficient, obsessed by cost-driven competition, and generally not fit-for-purpose, and therefore needs root-and-branch reform (but, as often as not, those in this camp are unable to offer a view of what, exactly, that reform might be, nor how to implement it). The other camp is of the view that the current process works perfectly well, it is just that most of the Army, outside those with Defence Equipment & Support, programmes, acquisition and commercial experience, do not understand how to use the system to advantage. When we need to, they argue, we can get what we need rapidly, cost-effectively and efficiently simply by making the best of the current systems available to us. (Just look, they will say, for example, at the speed and efficiency with which Archer 6x6 has found its way from a good idea into the field artillery.) As with every debate such as this, there are truths on both sides of the fence.

The point, however, that Commander Field Army made to us at the CHACR when this project began, is that achieving these results "when we need to" is no longer the exception – it is now the norm. The exponential rise of the technology curve, alongside the increasing instability and unpredictability

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of the global context means that we have to step away from allowing ourselves the luxury of time, the search for enduringly exquisite capabilities, and the desire to seek certainty and safety against criticism. The modern context demands that a strategically agile and flexible Army will need a fast, safe and assured way of providing soldiers with effective, and cost-effective, capabilities at a rapidly-evolving rate. All of the time.

At the same time, the Chief of the General Staff has directed that the Army needs to understand, even if the rest of the nation doesn't, that it needs to mobilise, properly, to fulfil its purpose: to protect the United Kingdom by being ready to fight and win wars on land. And he understands full well that for an army to mobilise it must be supported by a defence industrial base that is equally ready and capable of meeting the demands of mobilisation. For this to be so, British defence industries will need both the capacity and processes in place to meet the demand immediately that they are called so to do, which, in turn, means that that capacity and those processes will need to have been nurtured over time, in advance, to help the defence industry to be ready when required.
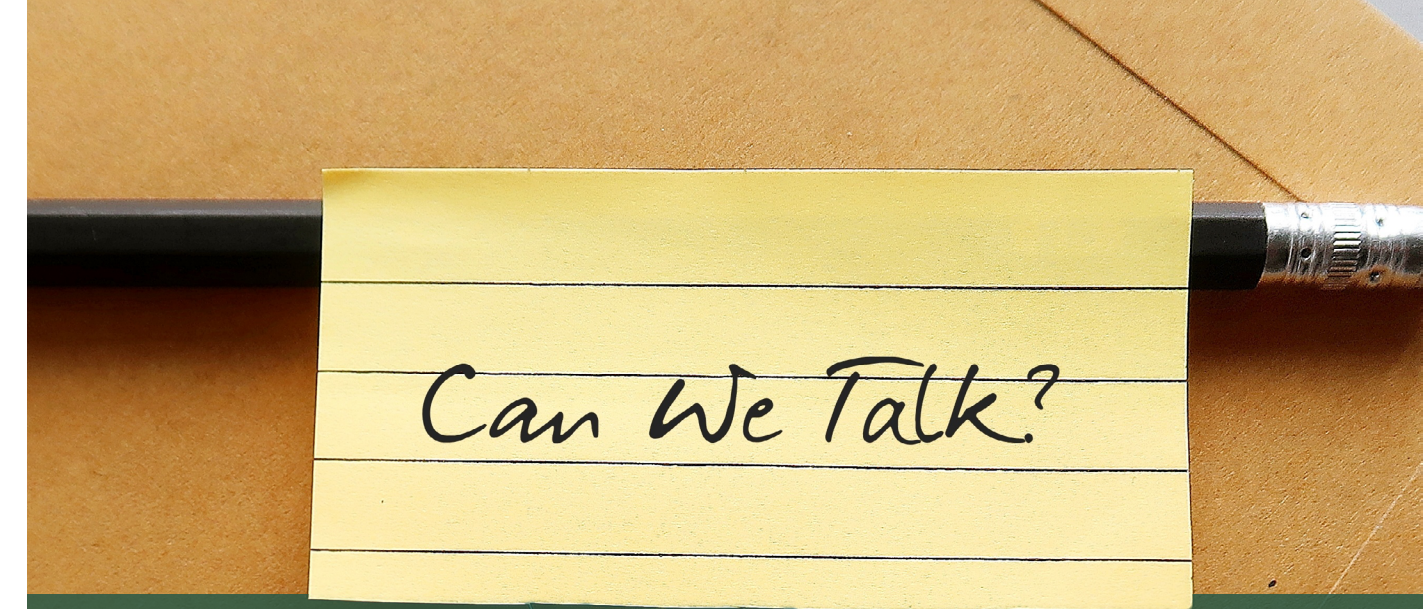
With all of the above in mind, this article offers some food for thought in the shape of four anecdotes, and a few short closing thoughts, garnered over the last few months as the CHACR engagement with this project has progressed. They offer no useful answers, I'm afraid, but, it is hoped, provide a basis for thought and debate.

Partnership
At this year's RUSI Land Warfare Conference, during the last session of the first day, a high-powered panel was asked to address the subject of 'Mobilising Industry'. Lt Gen Sharon Nesmith, the Deputy Chief of the General Staff, spoke first, with a positive view of how much closer industry and the Army were becoming, and needed to continue to become, as the ever-increasing speed of technological advancement and the volatile security context demanded an agile and positive partnership approach. Armies can't mobilise, in any meaningful way, she said, without the support of their defence industry. The other speakers, from Babcock, Thales and Defence Investment in NATO, did not disagree. The two industry speakers, did, however, offer some thoughts on the different perspectives of the notion of 'partnership'.

Louise Atkinson, the Managing Director of Defence Equipment in Babcock, offered an analogy. She asked the audience to consider the term 'partnership' in the romantic or personal sense, and then to put themselves in the place of a party to that 'partnership' who had been addressed by their other half, on one knee, saying something like this: "I'd like

Can We Talk?

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Relationships depend upon empathy, trust, openness, give-and-take. And, as often as not, relationships thrive or falter based on the perceptions of both parties.

to propose to you: let's form a partnership; but, let's make it just for five years, as it would be seen as unfair to others if I committed to you for longer (well, I say 'five years', I mean for three years with a 1 + 1 option depending on how well you perform); and I'll have a performance regime put in place for me to evaluate your performance and give you feedback; but you, of course, will not be welcome to evaluate me and give me feedback on my performance; I'll be likely to change my mind often in what I expect of you, and will want you to be flexible in how you respond to my needs; I will, of course, give you housekeeping money to keep us fed and clothed, but will try to ensure that I give you as little of that as possible and will watch, carefully, how you spend every penny; and of course, at the end of the five years I shall be actively seeking alternative partners in an open competition to see if there is anyone better than you out there. So, will you marry me?" That, she suggested, is a little bit how it feels when one engages in a commercial partnership with the Army or wider Defence. Why, one was moved to wonder, would the defence industry invest long-term resources, structures, commitments and approaches in such an environment? Why, under circumstances like that, would anyone sensible commit any more than the minimum required to meet the exact specifications of the 3+1+1 relationship?

Like all analogies it was, of course, full of flaws and not 'fair'. But it was not the facts or details of the analogy that mattered, because the point that was being made was not what it is like to be in a commercial partnership with the Army, but what it (sometimes, or, perhaps, often) feels like. This analogy was not, surely, about the details of fact, but about perspectives and perceptions. And the interesting thing, for me as an observer of both the Army and defence industry, is not the detail of the analogy itself, but the two very distinct and very different reactions to this analogy. Watching the reactions in the hall, and then chatting with delegates of all sorts over the next couple of days (and, indeed, for weeks afterwards), an interesting pattern emerged.

Almost without exception, although to varying degrees, the Army's soldiers and civil servants bridled at the analogy: it was not fair, not accurate, rather one-sided, not the full story. It was certainly, the soldiers and civil servants said, neither welcome nor helpful, especially after the Deputy Chief of the General Staff had offered such a positive approach to partnership. It was, many said, rather ill-judged or, at best, amusing but a bit of a cheap shot. And, inevitably, a number of the critics trotted out the time-honoured riposte along the lines of "she missed out the fact that they want paying to be in the partnership".

The almost universal reaction of the representatives of the defence industry, again to varying degrees, was, however, equally clear-cut. That was spot on, they opined – that is exactly what it feels like to do business with the Army. Great analogy! We're not trusted. We're not respected. Competition and short-termism always trump relationships. They don't see this as a partnership, but as a distrusting master-servant, or, at best, as a transactional customer and retailer relationship. And, sanctimoniously, they think that we shouldn't be asking for money to do business with them (or, at least, not making a profit) – as if they all turned up for work and didn't expect to get paid, but served for a higher purpose and sought no financial reward for their services.

The reaction of neither party was logical, well-thought-through or empathetic with the other party's position – the responses were emotional, sometimes illogical, visceral and tended to pick out small snippets of counter-argument as if to demonstrate that their opposite party's entire argument was flawed and thus fell apart as a result of this single counter-point. In other words, these were the sort of reactions that one gets when a relationship has broken down and neither party is able to be dispassionate or empathetic in their engagement with the other. (So maybe it wasn't such a bad analogy after all!)

But, surely, none of that is the real point. Relationships depend

upon empathy, trust, openness, give-and-take. And, as often as not, relationships thrive or falter based on the perceptions of both parties. Louise Atkinson's analogy was all about perceptions. The reactions, of both different parties after the analogy had been offered, were also perceptional. The detail was irrelevant. This was about long-term predispositions. The old saying "you can't surge trust" applies here.

For me both the analogy and the reaction to it demonstrated one vital point. It is no good Defence, or the Army, periodically stating that they (both sides) need to build stronger partnerships as if partnership behaviour can be 'surged'. The perceptions that drive behaviours that build or undermine trust and collaboration are long-term. And they are as much in the mind as they are in the structures, rules and processes. If partnership behaviours are desirable (and they surely are) then amending rules and practices will help, but they will never be enough. Changing process can happen rapidly, if there is sufficient appetite so to do. Changing mindsets needs much harder work over a much longer time.

Risky business
The second thing that struck me (or, perhaps more accurately, re-struck me repeatedly and not unexpectedly) as the CHACR set about this project for the Commander of the Field Army, was how reluctant all parties (soldiers, civil servants and the industrial and business community) were to offer their views publicly, especially in print.

A fairly common answer from those in the business and industrial community who were approached was that they were happy to offer a view, including in a personal face-to-face exchange with individuals, and even to be panel members at workshops or seminars, but not to commit their thoughts to print. There was a fairly universal concern over being, at best, misconstrued and, at worst, even 'blackballed' by certain organisations or individuals as a result of offering an attributable stark or frank view without the ability to explain nuance in person.

Similarly, but for different reasons, soldiers and civil servants were uncomfortable with committing any thoughts on the delicate business of commercial relationships to print. "I suspect that I won't get clearance on that", or "even if I did, I'd have to be very careful", were common replies. At best there was a sensitivity and cautiousness about engaging, publicly, in this important debate that is not shown elsewhere. Soldiers and civil servants are perfectly happy to commit their thoughts to paper on such subjects as doctrine, tactics, the conduct of operations, the development of future capabilities, recruiting, equality and diversity, 'jointery', the relative importance of the three Armed Services, morale and any number of other subjects from the strengths and weaknesses of the regimental system to the future of the tank. But procurement, acquisition and commercial practices and relationships remain uncomfortable subjects for open discourse.

In short, no-one seems to want a robust, and open, discussion on the subject. Why the taboo? What is everyone so concerned about? I am not sure that I can offer any wise insights to this, but unlocking this particular log-jam may be

helpful. Part of the answer may be found in the readiness of the media to leap upon any example of perceived procurement or commercial malpractice (the "imagine *The Sun* headline" test applies in this case). But the reluctance to engage in this open and progressive debate means that these media headlines are often based upon shallow, incomplete and muddled understanding. Those reporting such things often feed, in a circular way, on their own, quite frequently ill-informed, discussion. But Defence is not blameless here: if the media is ill-informed it may be as much our problem (as the informers) as it is theirs (as the informees). A richer, more open debate by the Defence community (military, civil servant and industrial) might well turn off some of the more lurid and less-well-informed headlines. That, in turn, might begin a more virtuous circle of positive discourse by all parties.

In short, if this perceived problem is going to move from cautious internal discussion into a phase of positive reform then all parties will need to feel free to conduct an open and constructive debate.

The nature of time
My third anecdotal observation as a result of the CHACR's engagement in this project is on the nature of time. Earlier this year I was invited to take part in an online workshop with a panel of very senior representatives from Defence Equipment & Support as they prepared to present themselves to the House of Commons Defence Committee. I was one of a largish 'group of experts' (although in my case it was 'opinion-holder' as opposed to 'expert') who joined the call. The Defence Equipment & Support panel provided an excellent update of processes and performance, of major projects and of progress reports. The 'experts' were invited to offer views, advice, insights and suggestions to allow the Defence Equipment & Support team to better prepare for their engagement with the Parliamentarians. It was a very constructive and positive session, open, honest, realistic and frank, but at the same time very clear on areas for improvement, on potential for major change or rethinks, and on a genuine desire to re-address the hurdles and obstacles of the acquisition process.

One early remark, however, made a deep impression upon me. In the panel's opening statements it was observed that not all was doom and gloom – for example, a very high percentage of acquisition projects were, we were told, delivered on time. I was, later on when my turn came to offer a view, moved gently to challenge the panel on this statistic. "What distinction" I asked, "do you make in this respect between something being 'on time' and something being 'timely'?" I was asked to expand my point. I explained: if a project to deliver, say, a new vehicle platform was scheduled to take 17 years from concept to capability delivery and delivered the said capability in only 16 years that would be considered to be a success – 'on time'. ("Yes, of course" came the answer.) But, what, I asked, if the march of technology meant that it was out-of-date by the time, 16 years after concept, that it was delivered? Or if the demands of operational reality called for its delivery earlier? Or if the expected theatre of operations, or operational context, or conceptual or doctrinal framework had dramatically changed by then? That would mean that its 16 years delivery time was

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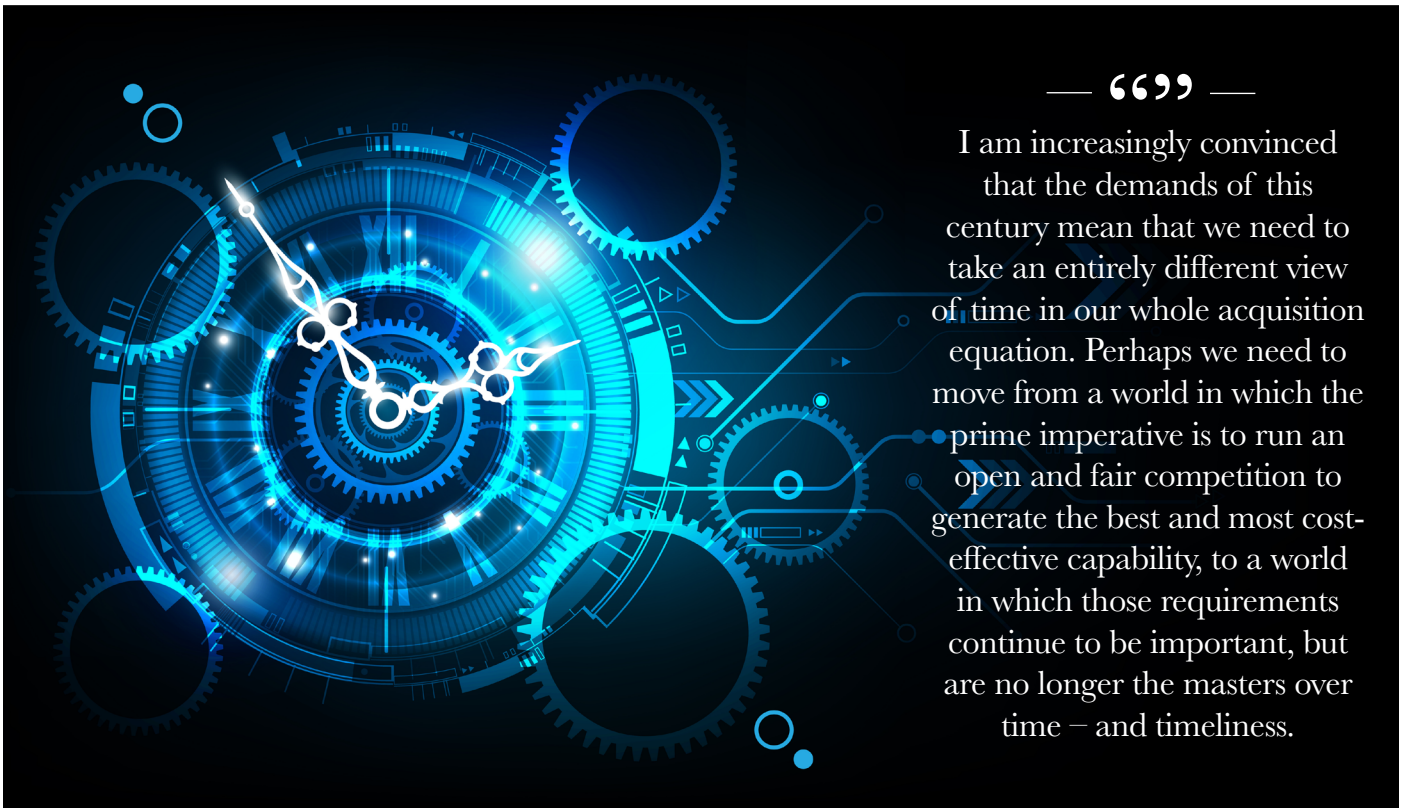
> I am increasingly convinced that the demands of this century mean that we need to take an entirely different view of time in our whole acquisition equation. Perhaps we need to move from a world in which the prime imperative is to run an open and fair competition to generate the best and most cost-effective capability, to a world in which those requirements continue to be important, but are no longer the masters over time – and timeliness.

'on time', but certainly not 'timely'. The key measure, I argued, should be timeliness, not an artificially-decided estimate of development and delivery expediency.

In short, I am increasingly convinced that the demands of this century mean that we need, really need, to take an entirely different view of time in our whole acquisition equation. Perhaps we need, genuinely, to move from a world in which the prime imperative is to run an open and fair competition to generate the best and most cost-effective capability, to a world in which those requirements continue to be important, but are no longer the masters over time – and timeliness.

Professionally enthusiastic amateurs

The fourth, and final, anecdote comes from a workshop held early on in this project. During a closed event in Robertson House, a group of staff officers from a mixture of concepts and capability acquisition desks were in discussion with a handful of representatives from the defence industry. The engagement was open, honest and largely positive. As the discussion progressed, however, it became increasingly clear that the majority of the Army officers (of lieutenant colonel to one star level) were becoming uncomfortable with the honest views of one industrialist (while being very comfortable with offering their own honest views in return!). The remark that had caused disquiet was made by a senior and very experienced individual, and was roughly as follows:

"Without being too unfair, when it comes to inventing and making stuff we, in industry, are the professionals and you, in the Army, are what I would call 'professionally enthusiastic amateurs'. As a result, you tend to tell us what solutions you want to your problems. What would be of most use to us, in industry, is if you told us what your problem was and allowed us to offer you the best solution. Who knows, we may already have one on the shelf for you!" And, after a little toing-and-froing in the group, he clarified: "I may be wrong, but the impression of what you do is that you identify

a problem and then hold whiteboard sessions, amongst yourselves, staff your thinking thorough multiple layers (with everyone feeling the need to 'add value'), and come up with your idea of the exquisite solution required, and then write a resulting statement of requirement. Thereafter, you get cross if we try to offer a view of how it could be done better. Your commercial processes seem to prevent you from talking to us, the experts, before you issue your statements of requirement or invitations to tender. Maybe you can't change that – but, if you could, you would be more likely to generate the sort of constructive partnerships that mean that the professional soldiers could identify the soldiering challenges and the professional inventors can do the inventing; together."

It occurs to me, as I write this last anecdote, that it returns, with a neat circularity to our start-point on partnerships.

Concluding thoughts

The agile procurement issue identified by the Field Army is not a new issue. The anecdotes above have, largely, been about two things: process and, above all else, behaviours. These are things that are within the gift of Defence, the Army and the Civil Service to change. If we are wise, and change is deemed to be necessary, then whatever changes are made will be done in close consultation with the defence industry (for all of the reasons explained above).

One thing, however, is certain. The speed of technological evolution is unprecedented in our history. Acquisition evolution must keep pace with that curve if it is to be fit-for-purpose. Laborious, risk-averse perfection-seeking will become the increasingly significant enemy of the good on time.

So, there are two messages contained in this short piece: build trust between industry and the Army (you can't surge it) and make sure that whatever you, together, design as an agile acquisition structure, it can deliver capability to the Army not just 'on time', but in a timely way.

AGILE PROCUREMENT? NORMS AND CHALLENGES TO THE INTEGRATION OF NOVEL SYSTEMS INTO LEGACY FORCE DESIGN

Dr Paddy Walker
University of Buckingham

Commentators cite a portfolio of drivers that may be accelerating change in military affairs. Several can be traced to newly available means of waging war, while others owe their origin to their quite broad second-order effects; a hastening in Great Power competition, democratisation of weapons and their use, the blurring and hybridisation of participants' roles in battle as well as the ongoing emergence of more disruptive technologies. All of these factors influence procurement strategies, and all give new urgency to understanding the degree to which these influences are pushing actors to revise how they undertake conflict. To understand these new norms of warfare we will have to understand the issues driving procurement over the coming two decades.

This is not straightforward. New means and methods undoubtedly show promise in the world's research and development laboratories, offering militaries the pathway to a selection of innovations, from artificial intelligence, lethal autonomy and hypersonic weaponry, to nano- and bio-engineering and human augmentation. But this coin has two sides. On one side, these developments suggest that a generational step-change in current capabilities is required. On the other side, Russia's invasion of Ukraine reminds us how little the battlefield really changes, and that technical innovation is just tinkering around with conflict's character and the passing means of waging war. The nature of war remains immutable.

This piece arises from a forthcoming book on war's norms.[1] The authors' aim is to remind us that decisions on how to engage with these many developments are required well before policy choices are made. The research question has been to consider whether change is taking place at a rate hitherto unseen, and to undertake this analysis in light of recent advances in technology, shifts in societal attitudes, and through the contextual lens of actors' perceived disruption in their strategic and risk calculi. How is procurement to be managed at scale when warfare is now able to be conducted at machine speed? While this work may suggest a new speed in the pace of change in war's character, it is incrementalism that is likely to remain the overarching pattern in war's prosecution.

Procurement and the shaping of norms

This article is therefore derived from the book's analysis of the challenges of novel systems' integration into legacy systems.

*Dr Paddy Walker
& Professor Peter Roberts*

Novel technologies present a particular set of challenges. Claims and deployment assumptions made for these systems' procurement have long proved contentious, and usually disappointing relative to projects' initial cost and performance projections. The capabilities of novel weaponry have routinely been overstated and then extrapolated by politicians and military staff alike to create transformative narratives without proper regard for the challenges posed by the delivery, deployment and integration of those systems. Indeed, the complications involved in introducing new weapons to the battlefield hide several (and usually under-appreciated) points of friction.[2]

The invariable headline is that delivery is often late, prone to political interference, complicated by a multiplicity of parties and, over the long procurement timeline, by fraying lines of accountability. Systems are then upended by technology, either by subsequent technical developments or by unsolvable technical difficulties that unexpectedly appear. Moreover, once signed off by decision-makers, these same technologies often gain inappropriate and gravitational power that stifles meaningful subsequent debate about how, when and where new systems should be deployed. At one end of the argument, the scale to which transformative technologies are expected to bring about change rarely

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[1] *Walker, Patrick and Peter Roberts, 'War's Changed Landscape? Forms and Norms of Warfare', Howgate Publishing, November 2023.*

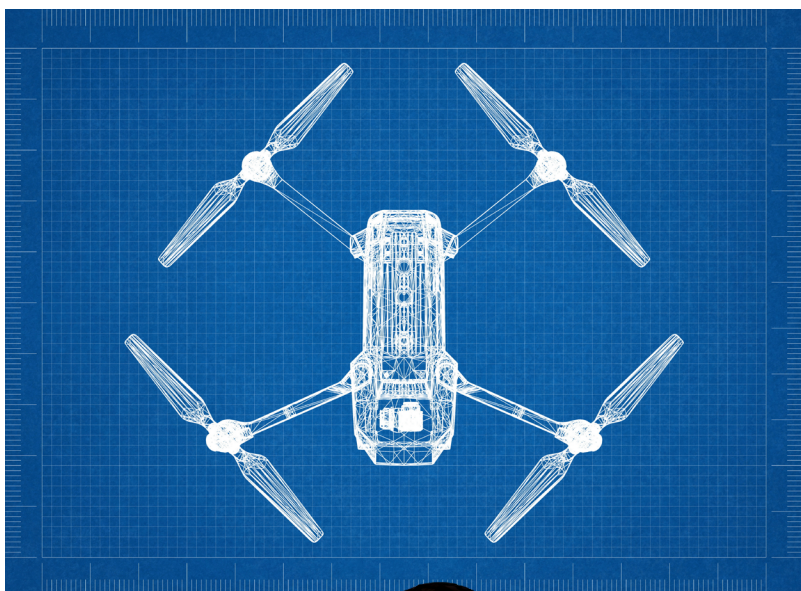[2] *Retter, Lucia and others, 'Persistent Challenges in UK defence Equipment Acquisition', Rand Corporation, 2021.*

Picture: UK MOD © Crown copyright 2022

Acquisitions of novel systems and their integration are precisely complicated by the volatile nature of the relationship between new technology and the maintenance of current operations, between available assets and evolving doctrine, budget constraints and the cost of new programmes

accords with the reality. At the other, intricate systems then fall short of being the intended wholesale replacement for current platforms.

Investment in novel systems is driven by a complicated equation of factors. Empirically, it is disproportionately shaped by debate around new domains, for instance around cyber and space as the new frontiers of warfare, and the degree to which existing land, air and sea platforms remain relevant and fit for purpose given changes in likely adversaries' force posture and capabilities.[3] Procurement is generally not a question of substitution but one of amelioration, of upgrading, amalgamation and integration. Acquisitions of novel systems and their integration are complicated by the volatile nature of the relationship between new technology and the maintenance of current operations, between available assets and evolving doctrine, budget constraints and the cost of new programmes and, latterly, a renewed debate over the requirement for combat mass in future operations.

Second, it is governed by the connections that must exist

between incoming hardware, current practices and the available cohort of trained (and training) operators available to settle new kit into existing arrangements. All of this requires intricate cross-domain coordination in order that programmes can be tested, validated and then integrated across the whole force. At the same time, procurement often takes an age, is very process-heavy and involves considerable 'technical debt' (the consequences of poor design, changing architectures, commercial pressures, the difficulty of testing combat assets in peacetime environment, the eventual merging of procurement pieces into a deliverable product and, lastly, the trials of configuring new assets to account for the often-disparate service priorities of the receiving parties). Moreover, acquisition practices must factor in that developments in one domain require lock-step advances in others if they are to translate into proper effect. None of this is new.

Currently, it is data's presumed underpinning of the battlespace that has testing ramifications on procurement practices. Data is a pivotal and, for the author, an enduring pinch point in novel systems' integration. The effects, after all, on operations of partial, duplicatory, obsolete and contradictory data (through spoofing, disinformation and other adversarial measures) must be factored in the procurement and deployment of any new platforms.

[3]*UK Thoughts on Defence, 'Retiring Sunset Capabilities in the Integrated Review', 12 March 2021, onukdefence.co.uk/military-capability/retiring-sunset-capabilities-in-the-integrated-review-you-have-to-trust-someone*

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That China has been acquiring new weapons 'five times faster' than its Western adversaries must inform Western practices, not least because passing assumptions of China being a struggling technological laggard are clearly outdated

Procurement of smart kit that can readily be rendered dumb will mean that soldiers must still fight with their knuckles to win the battle.

The fact remains that assets in space, assets operating in the electronic ether or upon remote platforms may be the new forms of warfare, but do not yet constitute a reliable new norm. They must therefore be introduced on the basis that users are thoroughly prepared to fight blind, without data and without connectivity.

Weapon advantage also depends upon often shifting technical hurdles, on reliability, on easy use and maintenance, on upgrades and seamless integration with colleague assets, on flexible configuration and modularity, upon that same resistance to adversarial meddling and, again, appropriateness for the task in hand. It also depends on an understanding of how adversaries are operating, the projected frailties of their systems and, as above, an acceptance that operators must train for their own systems' degradation in hot use.

In considering how novel systems will affect procurement, it is useful to construct scenarios, to role play and then to think about the issue through this lens. For example, swarming and loitering munitions as a platform technology remains in its infancy, but with credible and disruptive promise and with du jour relevance to armies' procurement executives. An understanding of the likely pitfalls in swarm deployment helps to provide a transferable general context. Unmanned systems require those same seamless data links discussed above and, in a communications-denied environment, will need seamlessly to backfill for partial, incomplete or hyper-sensitised data (and, in time, moreover, to do this without a human in the loop). Procurement's long to-do list must cover resilience and on-platform routines that automate, manage and optimise performance. It needs to factor for expert and malleable configuration (boundaries, permissions, fail protocols etc.). And novel systems will need to do this while conforming to the dynamic nature of both battlespace and colleague assets (both manned and unsupervised).

While sensors may be able to provide a degree of situational awareness, swarm technologies must also include priority setting, feedback loops that monitor as well as on-platform processes to set goals (in line with the mission rule of law and rules of engagement). Further procurement obstacles include systems' procedures to undertake attribution and forward planning. In the particular case of their targeting, swarm deployment will still be complicated by terrain considerations, the moving parts of a battlefield, by adversaries' actions (camouflage and other obfuscation) as well as by the need to reorganise after contact with the enemy's own defences and systems. In an unsupervised mode weaponry requires targets to be labelled, classified and allocated in real time if their procurement is to add a new layer of effectiveness. And then the planner must remember that their remote platforms will still be subject to the same restrictions on size, performance, weight, cost and stealth constraints as their manned alternatives. This is a long list, but these are the component parts of successful procurement and integration of such systems. And these observations on the acquisition and use of swarming and loitering munitions can be applied much more widely.

Ramifications from procurement processes

Geo-politics, domestic politics and political positioning all influence the acquisition process, the recent passage of the CHIPS and Science Act being a case in point.[4] The activities of adversaries and the prerequisite for governments that the country is kept safe are just two factors in procurement's equation. Complexity also arises from politicians' reflexive response to particular adversaries and the passage of time that exist between concept and delivery of weapon systems.

In short, procurement cannot be undertaken in isolation. It remains a national endeavour and, while its processes may

appear to ebb and flow, this is rendered irrelevant given very long timelines and its long-dated drivers (such as state security, permanent competition, fulfilment of useful alliance commitments, maintenance of advantages, leveraging others' weaknesses, or the demands arising from political and force posture) from which a whole set of behaviours may subsequently be driven. It is the over-arching framework (East versus West, China versus America, democratic versus illiberal) which then has three ramifications for procurement. The framework moves slowly, even at generational pace. It is quite well telegraphed. It is also a mechanism that seeds a host of tactical and incidental behaviours along the way, each of which that may have deep consequence, have quite different durations and may or may not then make the transition from evolving to new norms. That China, for instance, has been acquiring new weapons 'five times faster' than its Western adversaries must inform Western practices, not least because passing assumptions of China being a struggling technological laggard are clearly outdated. Similarly, any degree of Western technical complacency has quickly been recalibrated by a broad recognition that its procurement requires material overhaul if it is to match Chinese resurgence.

Negative developments in procurement also drive behavioural change and this may not always be constructive. In the US, for instance, public shortcomings and high-profile examples of egregious conduct mean the defence industry is unhelpfully lumped together as a single suspicious entity and, as a generalisation, held at arm's length. Contrary to the Cold War period, America's public-private procurement relationship is one of strain and distrust.

'Technical debt' in weapon procurement

Consequently, perceptions of inefficiency and mismanagement pervade defence acquisition.[5] This is unsurprising, in that complex systems require ever more complex manufacturing processes. The increasingly asymmetric costs of totemic programmes have become increasingly disproportionate proportions of the country's overall defence budget (for example, submarine, aircraft carrier and aircraft programmes in the UK).[6] These represent an expanding portfolio of not only historically larger and longer-term commitments. And all in the face of the rapid development of possibly disruptive capabilities (artificial intelligence, predictive machine-learning, rapid manufacturing techniques), all with the potential to upend current assumptions. Shorter production runs of 'exquisite' novel systems also mean that production efficiencies will be ever harder to achieve and updates that would otherwise arise from experimentation and adaption will be correspondingly hampered.[7]

Unsurprisingly, therefore, acquisition programmes have long represented a demanding series of cliff faces and, given that these have traditionally been measured over decades, this is unlikely to change soon. There are, moreover, many degrees of separation between personnel specifying, coordinating and delivering new systems against the cohort of individuals tasked with then accepting, bedding in and then using these assets. Biases around 'not-invented-here' are

difficult to remedy. Three issues reinforce the point. First, novel platforms often risk obsolescence at the very point of delivery, given the long timelines required to deliver systems, iron out configuration issues and factor for the fast-changing character of war. Second, the variability of that change across sectors, geographies and categories complicates integration procedures.[8] A third matter is again behavioural and is rooted in how forces have traditionally procured their capabilities. Inter-service rivalry is still a factor in procurement. So is traditionally siloed thinking that persists between navies, armies and air forces, the more so given that tactics and doctrine are key enablers in the integration of new systems and must set down the ground rules for these systems' successful deployment across arms and services.

Similarly unsurprising is the contradiction posed by the legacy forces that are still held in states' arsenals, and the notion that new technologies can be procured to address requirements and shortfalls that often date way back to earlier generations. New platforms are never specified, procured and deployed unencumbered. The erratic pace of innovation (and the random traction that hallmarks novelty in military equipment – today's purported 'revolution in military affairs' is often tomorrow's old news) tends to frustrate development in 'use' norms. This is not helped by the febrile set of drivers that often characterises procurement (government interference and point-scoring, changing personnel, muddled responsibilities etc.). Increased transparency in procurement heightens, furthermore, the fear of missing out on that new disruptive technology.

Procurement contradictions therefore abound, not least as Western militaries' pivot from counter-insurgency operations to conventional operations and the degree of obsolescence that this has already entailed. Nevertheless, while Ukraine has demonstrated that platform design and doctrine require fundamental change to be fit for new means of warfare, this does not equate to a new norm. Two observations arise. The case here for the UK has been that political expediency and inadequate investment has led to a long-dated reduction in the warfighting capabilities of the British Army. It is noteworthy that the requirement to 'adapt and leverage remaining advantages' – which underpins the *2021 Integrated Review* – is

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> There are many degrees of separation between personnel specifying, coordinating and delivering new systems against the cohort of individuals tasked with then accepting, bedding in and then using these assets. Biases around 'not-invented-here' are difficult to remedy.

[4]See, generally, mckinsey.com/industries/public-sector/our-insights/the-chips-and-science-act-heres-whats-in-it

[5]Retter, Lucia, and others, 'Persistent Challenges in UK defence Equipment Acquisition', Rand Corporation, 2021.

[6]UK Government, 'Defence Equipment Plan, 2022 to 2032', assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1120332/The_defence_equipment_plan_2022_to_2032.pdf, accessed 12 June 2023.

[7]Tegler, Eric, 'Russia may be showing it is running low on precision guided munitions', Forbes, 24 March 2022, forbes.com/sites/erictegler/2022/03/24/from-debuting-hypersonic-missiles-in-ukraine-to-hinting-at-chemical-weapons-russia-may-be-signaling-its-short-of-munitions

[8]White, Olivia and others, 'War in Ukraine: 12 disruptions changing the world', McKinsey and Partners, 9 May 2022, mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/war-in-ukraine-twelve-disruptions-changing-the-world

Picture: Soldier Magazine © Crown copyright

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Once kit has been delivered, the embedding of new assets and their attendant practices is fundamentally an exercise in behavioural science

not in itself a fresh clarion call but instead the repeat of a very often stated refrain.

Battlefield empirics of novel systems

Disruptive technologies may enable new models of engagement, but they may also dislocate existing practices and devalue existing arsenals. Planners have always factored for threats that upend current practices, but it is the breadth of procurement openings that today appears noteworthy. Planners must judge the importance and longevity of new assets on the unfolding battlefield whilst understanding enduring challenges; sensors require satellite bandwidth, sonar acoustics rely on vulnerable fibre-optic cabling and, ultimately, seeing is not the same as understanding.

Similarly, while new technology promises us game-changing capabilities, this may be particularly relevant for smaller and non-peer parties. Well-directed investment in these same innovative weapon systems might quite quickly overcome (or at least offset) the advantages of the well-resourced opponent. The planner's conundrum is then that less resourced actors can now harness asymmetric advantages and exploit their own weaknesses through innovative and often low-cost means.

The primacy of integration in deploying new technologies

Battlefield outcomes are very rarely dependent upon hardware procurement in isolation and there is now less requirement simply to kill the greatest number of one's adversary's

population. Instead, victory is much more of a managed process, shaped by getting the right narrative accepted by key audiences and maximising available assets by ensuring appropriate integration. On the battlefield, victory is achieved only by breaking the adversaries' combined will and, in operations, by being more resilient and more durable than one's enemies. These are not uniquely procurement issues. Procurement, alongside doctrine and tactics, may define battlecraft and war's character, but rarely its nature or the long lists that govern war and warfighting.

It is integration that remains the accompanying key to ensuring that novel systems are additive in legacy force design. Multiple sources of inertia still discourage efficient integration, whether from issues around user motivation and apprehension, through risk aversion by commanders and operators, to cultural and other behavioural calculi. Integration is undone by users' fear of failure, criticism and career impact. All of these traits are natural characteristics of service life but they have combined to work against the embrace of change. Integration, moreover, is often ambiguous, requiring bold bets in the face of uncertain outcomes. The integration of novel capabilities requires a willingness to persevere in spite of setbacks, self-doubt and, germane to military settings, an acceptance of risk and a likely loss of control. Planners, moreover, understand that technologies do not necessarily become capabilities.[9] Integration comes about through collaborative, well organised and well telegraphed systemic action throughout an organisation. It must be systemic in scope and reach, matching available human capital with leadership practices. Once kit has been delivered, after all, the embedding of new assets and their attendant practices is fundamentally an exercise in behavioural science.

One further point around recent asymmetry bears note. While well-trailed procurement challenges facing the West usually revolve around cost, uncertainty and long timelines, capabilities now readily available to non-state and non-peer competitors can be inexpensive, irregular and innovative. And non-state actors are not constrained by state procurement processes. There would seem to be an almost inverse relationship between complexity in new weapon systems and the 'low-tech', 'good enough' characteristics from off-the-shelf capabilities that can be pitched against them. Examples include spoofing, jamming, signal fratricide and denying one's adversary the means of parallelism. It is these characteristics that really agitate for material change in practices. Western procurement still relies on stringent request for proposals and open manufacturer competition. Its processes can be byzantine, riven by political interference, and increasingly unsuited to the fast-paced flexibility required from today's force acquisition environment. Change should also be accelerated by the emerging gulf between institutionally sourced weaponry and commercially available technology which is ubiquitous, cheap to acquire, needs minimal bespoke integration and which can readily be repurposed for the battlefield. All of this suggests that keeping procurement unchanged will instead see parties increasingly compete around rather than against the novel systems being fielded by the West.

[9] breakingdefense.com/2019/10/vehicle-platform-integration-where-technologies-become-capabilities

LESSONS FROM SOUTH KOREA AND POLAND?

Trevor Taylor
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Sadly, the starting point for any discussion of the British Army's equipment acquisition efforts since before the turn of the century is that performance has been poor. Projects have not been completed and the defence industrial base neglected. As an illustration, the Army began its pursuit of a new reconnaissance vehicle (Tracer) as early as 1992 and established a collaborative project with the US.[1] However, when the US pulled out, the UK also abandoned the work and returned to the need only in 2014 when it chose General Dynamics to build what is today the Ajax family. The UK was a founder member of the international consortium to develop and build the wheeled Boxer family of vehicles but then opted to leave the programme (at a financial cost) in 2005, apparently because it would exceed the 17-ton limit for transportability by C130.[2] Fourteen years later, after a failure to agree terms for the Piranha vehicle from General Dynamics' Swiss supplier in 2008,[3] the UK opted to re-join the Boxer programme with British production starting in 2023. In terms of the delivery of tracked vehicles, Challenger 2 was delivered in 1998 and the combat engineering vehicles Terrier and Titan were in service in 2010.

As the Sheldon report on the Ajax programme and other reports have noted, the shortcomings in land equipment acquisition are not solely down to the Army. The MoD, the Treasury and, of course, industry have all played their part.[4] But Lady Bracknell's observation from *The Importance of Being Earnest* is pertinent: "To lose one parent, Mr Worthing, may be regarded as a misfortune; to lose both looks like carelessness." The Army managed to lose Tracer, FRES, Boxer and Piranha before retrieving Boxer (pictured below).

Looking for others who have fared better, one case would be South Korea which surprised most when it announced a $5.7 billion sale of tanks and armoured vehicles, plus 49 KA.50 light combat aircraft, to Poland in August 2022.[5] Seoul was in a position to make this deal because it has been seeking to reduce its dependence on US systems since the late 1970s and has increased its efforts this century. Significantly in 2005 it created the Defence Acquisition Program Administration which has responsibility for procurement, the development of the arms industry and

[1] publications.parliament.uk/pa/cm199899/cmselect/cmdfence/544/544w05.htm / thinkdefence.co.uk/british-army-medium-weight-capability/tracer-mrav-and-project-bushranger / hansard.parliament.uk/Commons/2000-06-28/debates/87b5d078-931f-4f61-9e85-4adfbe93a37c/TracerProgramme

[2] defensenews.com/land/2018/04/02/uk-to-re-join-boxer-program-17-years-after-opting-out

[3] army-technology.com/news/news4756-html / army-technology.com/projects/piranhav

[4] rusi.org/explore-our-research/publications/emerging-insights/lessons-ajax-programme

[5] edition.cnn.com/2022/07/27/asia/south-korea-poland-tanks-howitzer-ukraine-intl-hnk-ml/index.html / thedefensepost.com/2022/08/30/poland-south-korea-tank-howitzer

defence exports. Like the DGA [Direction générale de l'armement] in France, it faces both the armed forces and the needs of the defence industry. Also notable, South Korea does not have internal competition at prime contractor level in its national industrial strategy: Hanwha is the clear leader in land systems and munitions. In terms of specifications, it is generating good but not ground-breaking systems with significant sub-systems from overseas: the Korean tank has a German engine and gun and the Hanwha howitzer fires three rounds in 15 seconds whereas the requirement for the venerable AS90 was three rounds in ten seconds. But seven other countries including Australia have bought the K.9 howitzer which Korea is continuing to improve on an incremental basis.[6] Two other factors should be mentioned regarding Korea's recent success. The first is its readiness to transfer technology and production rights to major customers, such as India and Australia. The second is that, at least in the case of tank deliveries to Poland, it seems likely it has deferred some deliveries to its own forces to meet Poland's demands at pace and it has not made modifications for Polish needs. Clearly in building a societal sense that the generation of defence industrial capability is a joint national endeavour, the Korean Government is supported by the threat situation under which the country lives and the chaebol system of a small number of large conglomerate firms, controlled by individuals and families, that are closely linked to Government.

But speed in acquisition is a function of both supplier and buyer agility. Here the Ukraine war has prompted Poland to display considerable decisiveness. With regard to the Korean deal, Deputy Prime Minister Mariusz Błaszczak explained: *Three months ago, during my visit to Seoul, we started negotiations. Two months ago, after the meeting in Madrid, during the NATO summit, our presidents discussed our cooperation... A month ago, we signed framework contracts, and today we signed contracts for the sale of K2 tanks and K9 howitzers to equip the Polish Army*.[7]

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> Speed in acquisition is a function of both supplier and buyer agility. Here the Ukraine war has prompted Poland to display considerable decisiveness.

In a quite different example, Poland took a period of less than six months to settle on and order the A.149 helicopter in August 2022.[8] With the UK, Poland has committed to the acquisition of three Arrowhead frigates and missiles from MBDA. However, such speed of decision has not always been the case, indeed Poland had been debating and negotiating on helicopter purchases at least since 2014. A decade ago, some in the Polish defence system were regularly frustrated by the time taken by the processes and approvals associated with defence procurement, many of which were meant to reduce the chances of corrupt behaviour. There was a recognised temptation to present some items as urgent operational requirements as these things were subject to less scrutiny and moved more quickly.

Since then Poland has sought explicitly to speed decision-making in part through organisational change: in January 2022 it established a single armaments agency that replaced what had been four separate bodies: the Armaments Inspectorate, the Inspectorate of New Defence Technology Implementations, the Military Standardisation and Quality and Codification Centre, and the Offset Agreements Bureau.[9] This represented the latest step in years of acquisition improvement efforts.[10]

To focus on the UK system for acquisition, especially for land equipment, there is much to consider if the country is to get to the same position as Korea (able to develop and produce its own heavy land equipment and munitions) and that of Poland (with a capability for quick decisions and choices).

UK industrial capabilities for land equipment currently reflect the purchases and procurement practices that the MoD and the Government have used in what can be reasonably viewed as 20 years of supplier neglect. The future will involve deciding on which companies will be key players, what projects will be used to build rather than just sustain industrial competence, what place will be allocated to formal

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People riding in Ajax and Boxer will be using vehicles that cost almost £10 million each

competitions and which overseas industrial partners will be key. There are some positive signs: the merger of much of BAE Systems land business with RBSL of Germany is a potentially important recent change but smooth delivery of the Boxer programme by RBSL and Krauss Maffei in the UK is in the future. Ukraine has brought munitions supply into prominence and the UK needs to decide the extent to which it will continue to rely on overseas supply chains and whether it will seek explicit arrangements with (European?) partners to set up some arrangements for surged production. There is a large land systems agenda to be addressed.

The size and difficulty of this agenda raises questions about desirable changes to organisational culture. Specifically, should the Army reduce its emphasis on being a people-centric organisation and recognise that it is increasingly reliant on expensive and highly advanced technology? People riding in Ajax and Boxer will be using vehicles that cost almost £10 million each. The 50 Apache E helicopters plus all their support items that the MoD ordered in 2016 had an estimated price of $4.86 billion (in round numbers that is $100 million each). The actual cost is not available in light of the depreciation of the pound and inflation since Brexit. For surveillance, data processing and communication, the complexity and costs of secure information technology are rising. Does the Army need its own high-ranking officers who have technology expertise sufficient for them to understand the costs and technical risks associated with the requirements they are considering?

Moving to actual procurement, many current practices such as the preparation and submission for approval of business cases, the generation of documents to enable 'fair competition', the drafting of contract terms that minimise Government liability, and the decision-making on winners to minimise the initiation of protests by losers are among the wider factors that absorb

chunks of time. However, MoD commercial officers lack a reputation for sensitivity to the costs of process or the real risks of the slow progress of a project. The MoD including Defence Equipment & Support is known to be able to move quickly in crises, when urgent operational requirements are in focus, but the reverse is true for routine procurements. Given the rate of technology advance and political developments, is this satisfactory?

It is the military's job to respond to the directions of government and this Government has made clear that it expects defence spending to contribute to national prosperity and enable operational independence as well as front line military capability. Thus acquisition is becoming more multi-faceted and so difficult. This short piece has sought to promote reflection and debate by bringing home to the Army its poor record on acquisition, including its impact on British industrial capabilities; to highlight the progress of another state, South Korea, in implementing a consistent policy of building its defence product range; to point to Poland as a state that has moved from ponderous to prompt in its acquisition decision making and to suggest areas of change in the Army and Defence Equipment & Support that could bring improving change.

[6] defbrief.com/2020/09/03/australia

[7] thedefensepost.com/2022/08/30/poland-south-korea-tank-howitzer

[8] theaviationist.com/2022/07/03/poland-procures-aw149-for-land-forces / janes.com/defence-news/news-detail/poland-signs-for-aw149-helicopters / overtdefense.com/2022/07/28/poland-selects-leonardo-aw149-helicopters

[9] shephardmedia.com/news/defence-notes/whats-in-a-name-poland-revamps-its-procurement-age

[10] defence24.com/poland-launches-a-procurement-system-reform-armament-agency-is-born-analysis

THOUGHTS FROM THE CONFERENCE FLOOR

Attendees at the 7th of September conference and workshop were asked to offer their thoughts to this edition of *Ares & Athena* to provide those who were unable to attend with a snapshot of some of the issues discussed. With thanks to those who did so, and to those who contributed to the thinking and debate on the day.

Moi Watson, a business case manager from within the Field Army HQ, shared the following summary of insights, from a personal perspective.

One of the benefits of agile procurement as a methodology in a civilian commercial environment is the delivery of faster and more frequently delivered value to the end users. The second panel focussed on the delivery of equipment. Procurement of equipment is only one part of the essential value required. The Field Army, the end user, needs capability; equipment, or services, with a considered wrap across all the Defence Lines of Development, supported with a delivery management plan for the proposed 'life' of the procured item providing at least a full logistic support service.

Without the wrap being fully considered as a non-negotiable requirement for the Field Army, there is a risk that, although equipment delivery targets can be reached by Defence Equipment & Support, the full capability development via the Defence Lines of Development adds time, and therefore pressure, on Army HQ. As Chief of Staff Field Army commented, "time is ammunition". The need to deliver to support Defence Equipment & Support milestones and contractual timelines can lead to further pressure on the Field Army which has to tolerate higher levels of risk. There is little advantage of procured equipment if it remains in a garage or on the shelf as it awaits its capability wrap. There is even more risk to software-based projects being stored as they will rapidly become obsolete before they are fielded.

Mike Sewart's concept of "fast IT" and "slow IT" in terms of an operating approach is a concept which could be easily adapted. If the "slow IT" (failure does matter, more risk management) can be adapted in to "fast IT" (failure matters less, more risk can be taken) the processes which govern procurement must be reassessed. This is particularly important if the "fast IT" is to include the iterative delivery of fast-moving projects such as small unmanned aerial systems, counter unmanned aerial systems, surveillance and target acquisition assets and electronic counter measures.

Modernisation now becomes as much to do with a balanced revision of Defence procurement management practices for a "fast IT" approach as it does with the delivery of capability; particularly if the process begins with bottom up, or end user demand, rather than top-down direction which, from current experience, can lack coherence.

In addition to his earlier contribution (see pages 15-17), RUSI Fellow Trevor Taylor submitted the following note on the Army, defence acquisition and technology exploitation.

Defence across the piece needs to generate better expectation management across all stakeholders including the media and the public. There needs to be greater awareness that complex development projects which take years to deliver must carry multiple risks. It is not surprising that many take longer than forecast, especially when a contract has been secured by a firm making time, cost and performance commitments that are at best optimistic.

Additionally investing in technological innovations is inherently a risky business and it is widely accepted in both commercial practices and academic literature that most innovations, like most new business ventures, fail. Delays and even failures are the price of rapid progress, although there are techniques for controlling and moderating risks.

The Army takes too much refuge in asserting that people are its most important asset. This arguably disguises the reality that they rely increasingly on costly and advanced technology for their protection, combat effectiveness and even training needs. If its people are to be effective exploiters of fast-moving technologies, does the Army prepare them well?

If the Army is to be an intelligent customer for and user of technology, it needs a foundational understanding of its trajectories, strengths and limitations in many fields yet it has abandoned most of the technical education that was in place even two decades ago. At a basic level how many senior Army leaders can say that they have read and digested the *Defence Artificial Intelligence Strategy* (admittedly a turgid document) or digested what Government defence defined in 2021 as the key technologies for future capability enhancement?[1]

Disruptive innovations are those that require organisational, behavioural and even strategic change. In defence terms, they have major implications for all the defence lines of development. Historically such changes have often been resisted by military bodies. The British Army does not present as being without sin in this regard. In an age when information and communication are increasingly seen as central to fighting effectiveness, it might be expected that technical sections of the Army, most obviously the Royal Signals and the REME, would be well represented on the Executive Committee of the Army Board (the established expertise of the Royal Engineers in creating and destroying infrastructure is not marked currently by fast moving technology developments). To attract and retain information technology and wider expertise, does not the Army need to become an organisation 'where technical talent is idolised and not seen as back-office function'?[2]

> **"**
> There is little advantage of procured equipment if it remains in a garage or on the shelf as it awaits its capability wrap

[1] Ministry of Defence, *Defence Artificial Intelligence Strategy*, London 2023; Defence Technology Framework, 2021).

[2] Kate Turner (RAF Engineer), 'Artificial Intelligence Primer: Time to Understand AI', *Wavell Room*, 1 September 2021.

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To attract and retain information technology and wider expertise, does not the Army need to become an organisation 'where technical talent is idolised and not seen as back-office function'?

Finally, those with great management skills need to be recognised for their vital contribution in ensuring that technological opportunities are not wasted. The UK has an excellent framework for this in the TEPIDOIL categories coupled with its formal recognition of the importance of through-life costs. But these tools must be used thoroughly and with expertise and here it is helpful to cite Joan Magretta, of Harvard Business School, who wrote: "When we think of all the productivity gains that drive our prosperity, technology gets all of the credit. In fact, management is doing a lot of the heavy lifting."[3] She continued: "Management's real genius is turning complexity and specialisation into performance... management's business is building organisations that work."[4]

Could anyone claim that current culture and organisational structures are generating an Army that is consistently well-managed?

A compilation of additional thoughts are provided below, as bullet points, with no added commentary.

■ *Decision making* – Project teams must get clear direction from the start: Defence Equipment & Support can run any procurement at pace if they have clear direction, a demand signal, and funding. Thereafter, where there is a will there is a way. After all, Defence Equipment & Support is established in order to serve a customer. 'Customer' support and engagement, from the start and at the highest levels possible, will provide both purpose and impetus to projects. (In this

respect, the organisation's strategy refresh will take lessons from support to Ukraine and apply them to wider Defence Equipment & Support where applicable.)

■ *Military off-the-shelf solutions* – There needs to be a willingness to accept that not all key performance indicators may be met, to challenge if they are the right indicators, and/or to question if they exist already as a legacy. Those demanding the procurement of capabilities need to ask: 'can we compromise key performance indicators to accelerate procurement into service?'; and, 'is what is available now good enough?'. In so doing, it would also be wise to pick your battles: there will be some capabilities that benefit from the full CADMIT [Concept, Assessment, Demonstration, Manufacture, In-Service, Termination] approach (slow) and others where we can assess military off-the-shelf solutions (fast).

■ *80 per cent solutions, accept that unknowns can be addressed later* – You will rarely have 100 per cent of the answers that you want, but do you have enough to proceed by accepting that success may come in phases? Can we, for example, contract for iterative development with industry, where final outputs might be unknown at the onset?

■ *Phased approach to procurement* – Phase 1 is to 'procure and secure' an available asset, buying time to assess Phase 2, which is the more 'normal' approach to Defence Lines of Development integration to service. Ownership of assets serves as a driver for integration and will ensure initial operating capability is achieved at pace (it's human nature).

■ *Do a deal* – If you can't get what you want at the first time of asking, then ask what you can get and what it would take

[3] Joan Magretta, *What Management IS: How it works and why it's everyone's business,* Cambridge, Harvard Business School Press, 2013, p.1.

[4] Ibid, p.7.

to seal a deal. And be prepared to change your requirement if the market can't bear it. Be prepared to listen to the capability developers (industry expertise) as much as to capability demanders (military expertise).

■ *'Not to exceed' figure in the business case* – At the Defence Project Delivery Conference, the Director General Finance and Minister for Defence Procurement both advocated telling industry what you do know in a business case. Be prepared to explain a 'not to exceed' figure, which allows you to make early progress, and then update this with an information note. This allows you to access a route to market at pace. If you delay too long the market and Defence changes, and you miss your opportunity.

■ *Tailor your approvals* – It helps enormously if you speak to the approval authority early, plan your Integrated Assurance and Approval Plan upfront, and get buy-in from all stakeholders. Don't assume a traditional route, or a set route for all options: approvals are risk-based; this is the basis of the new SOC [Strategic Outline Case]/FBC [Full Business Case]/OBC [Outline Business Case] model.

■ *Access memorandum of understandings/ government to government agreements* – Don't ignore opportunities to work via these arrangements where possible. Always ensure that the corresponding parties are willing to work at the same pace as you (and/or, indeed that you are prepared to work at the same pace as them); and if not, then don't be afraid of a competition to find the best solution to the problem. It's not always the route to market that is most important; the most important thing may simply be starting the work and engaging with those outside Defence that also have to do work/gain approvals etc. Remember that businesses have their own approvals processes to follow – don't assume that Defence can take as long as it needs to make everything perfect and that industry can then simply 'do what they are told' immediately. Either way, consult CLS [Contractor Logistics Support], make a decision and get on with it.

■ *Approach the market early* – Following on from the comment above, note that Defence has a habit of taking large chunks of valuable time out of a procurement process when the other parties (who have work to do as well) often get squeezed due to our indecision. Remember the old 'one-third two-thirds rule'? Get engaged as early as possible, understand the schedule and agree with all stakeholders what is achievable.

■ *The current situation within the Field Army* – Perhaps it is a generalisation, but it would be fair to say that attendees agreed that there was a lack of knowledge and expertise within the Army when it comes to understanding, profoundly, the range, breadth and depth of technological advance. Against that background, the Army, nevertheless, often seeks to design its own answers to its perceived problems. Furthermore, the Field Army (the 'demander') does not have an ecosystem to face technology and technology companies (in the sense of, as discussed in the conference, an 'ETP': Ecosystem, fuelled by Trust and led

by Purpose). This, coupled with a cumbersome acquisition process, thwarts, or even drowns, dynamism and initiative.

■ *What is not wanted* – Participants were keen to make it clear that an uncoordinated approach to reform, or repeated initiatives without a coherent root-and-branch re-think, were unlikely to deliver useful change. In that vein commentators observed that things that were not required here were: multiple processes and multiple routes to technological development being developed ad hoc, bespoke in isolation, or without clear structure; indeterminate and/or opaque decision-making with too many involved, or in isolation or silos; and, fairly unanimously, more or repeated re-organisation at Field Army level.

The following adaptations were offered by attendees as food-for-thought.

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■ Clarity of ownership and decision-making in developing technological proposals would be most helpful – but not if it resulted in silo-making.

■ Stability of Field Army organisation in force development posts would help. Longer term postings would help in two respects: expertise and understanding; and partnership and trust-building.

■ There is a need to migrate from a traditional platform-facing technological approach to a systems approach, including the use and development of AI.

■ Develop a much better in-house technological advice capability: for example, the Navy and RAF have Chief Technical Officers: the Army does not. The Field Army was not understood to have a single designated figure facing technology, whether military or civilian.

■ Develop the cultural and procedural confidence and trust to engage with technological companies. Regulatory culture towards industry engagement within the Field Army thwarts innovators in the Field Army, weakens technological understanding and mitigates against trust and relationship-building.

■ Perhaps the time is right to conduct a robust exercise to draw up new 'rules of engagement' both with and for industry. Both sides of the relationship would need to work together to build this – not one side work in isolation and impose it on the other. Of course, relationships will still need to be constrained where necessary, but rules that allow freedom of initiative, an innovative approach and relationship-building over time would be most helpful.

■ Exploit the value to industry of the Army experimental programme, such as Army Warfighting Experiment, to gain and foster technological insight and engagement for all participants – military and industry.

■ Consider adopting a more imaginative approach to external attachments into the Field Army. There are

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■ Look critically at training (within the Defence Lines of Development) as a barrier to rapid adaptation. Compare, for example, the Ukrainian F16 pilot training against a more traditional approach; or, the Special Forces' speed and approach in Javelin training compared with sequential and cumbersome prescribed process from concept to capability-wielding trained and equipped soldiers.

■ *Behaviours* – Finally, there was fairly universal agreement that there does not need to be any perceived 'magic' to rapid procurement (or normal procurement come to that). Clarity of purpose, shared across acquisition teams and delivery agents, was key. Trust, genuine trust, built over long engagements was important and could not be 'surged' to

suit specific demands. Examining approaches to make sure that where urgency was required, or where risk through problems or failure had limited side-effects, procurement could be genuinely 'agile'. On the other hand, there was little wisdom in placing such measures against projects where the consequences of any failures were too high to accept. (This was, elsewhere in the conference, characterised as we have seen, as 'fast IT and slow IT,' according to the needs and circumstances.) A new approach to relationship-building and partnerships was required, with less 'fear of *The Sun* headline' and more building of a real 'one team for national good' mentality across all agents involved – be they Defence, Army, Field Army, uniformed or civil service, military or civilian, soldier or businessperson. To keep up with the demands of all of the issues discussed, there was a very strong feeling that a notion of 'One Team Defence' must include, properly, all parties working much more closely together.

ABOUT CHACR

The Centre for Historical Analysis and Conflict Research (CHACR) exists to gather and present a wide range of views and perspectives to inform the British Army. It contributes to decisions concerning strategy, capability and force development and operations whilst challenging conventional wisdom and testing evolving concepts. We do this by conducting and sponsoring research and analysis (both in-house and through a wide network of associates and colleagues across the globe) into the enduring nature and changing character of conflict on land. At the same time the CHACR is an active hub of scholarship, professional enquiry and debate to help to sustain and develop the British Army's conceptual component of fighting power. Importantly, CHACR acts not just as a champion for individual 'soldier-scholars', but the promotion of a 'brains-based' approach throughout the Army. In short, CHACR promotes the notion that it's as important to ensure that the army is not out-thought as it is to ensure that it is not out-fought.

Key services:

● Commissioned research to support strategic planning, deployments, operations, projects, and senior level visits and talks.

● Keynote events (conferences, lectures and debates) by internationally renowned experts to provide conceptual development, in-depth thinking and insight.

● Formal and informal red-teaming and review to enable you to test your ideas and projects with leading experts; either in written form, wargame or in small roundtable discussions. The CHACR network can also source Army, national or international SMEs tailored to your requirements.

● Bespoke briefings on specific countries or issues for operational, strategic or defence engagement purposes.

● Mentoring and advice for Masters and PhD theses and academic and think tank placements.

● Bringing CHACR to regional hubs across the UK to ensure as many of the Army as possible are able to access cutting edge insight and analysis in-person.

● Support to Staff Rides by carefully selected history and war studies experts.

● Defence engagement through visits to, and hosting of, foreign delegations and partnered research coordinated with Army communication and engagement priorities. CHACR provides a nuanced strategic communication messaging platform, neither military nor academic, it can gain insights and provide introductions not easily accessible by serving Army personnel.

● *The British Army Review*, print and online articles. The journal of British military thought delivers high quality academic articles from across the Army and academia, supported by online and print commentaries, in-depth briefings, and summaries of global ideas.
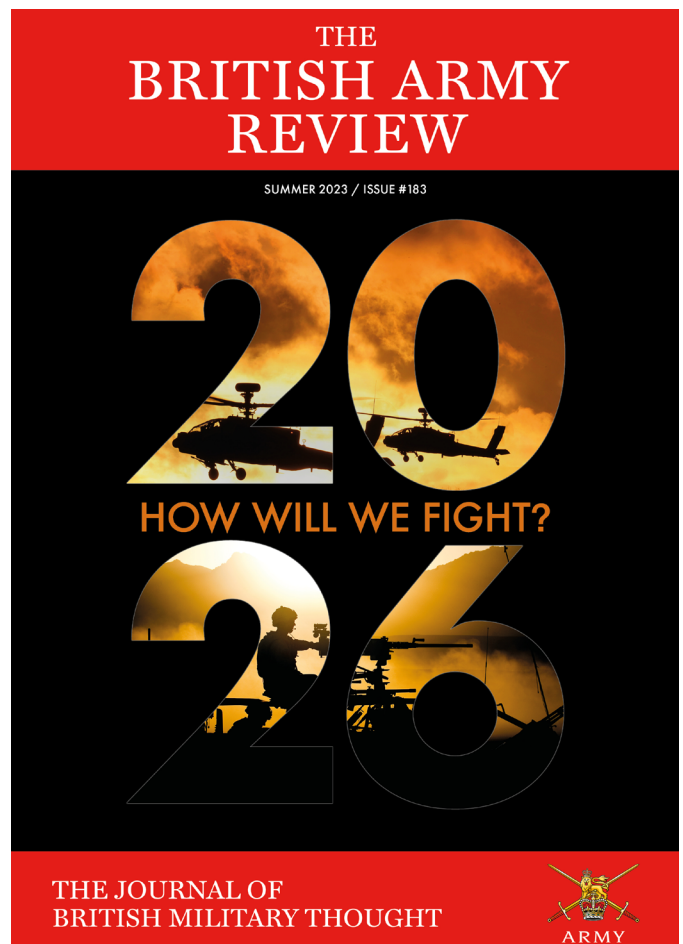
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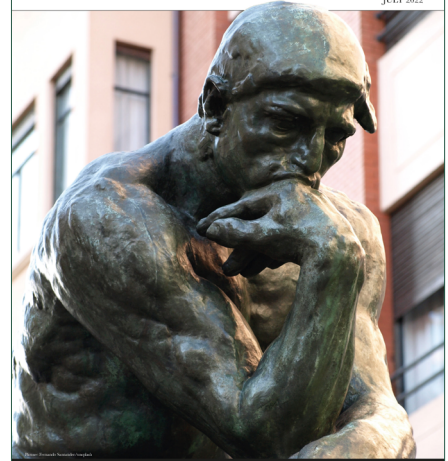
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