THE NEW STATESMAN

The Report

Digital Defence Helping to build an innovative and diverse sector

David Meads A digital strategy relies on people, process and technology

Al Lynn In times of crisis, perfection is the enemy of survival

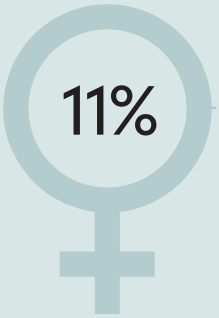
Angela Owen How to improve gender representation in the Armed Forces

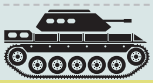
Demographics of defence

Representation of different groups within the Armed Forces as at 1 April 2021

Gender

More than a tenth of all UK Regular Forces are female





9.8% of the Army

10.2% of the RN/RM*

15.1% of the RAF

Ethnicity

Nearly a tenth of the UK Regular Forces are from Black, Asian and Minority Ethnic (BAME) backgrounds

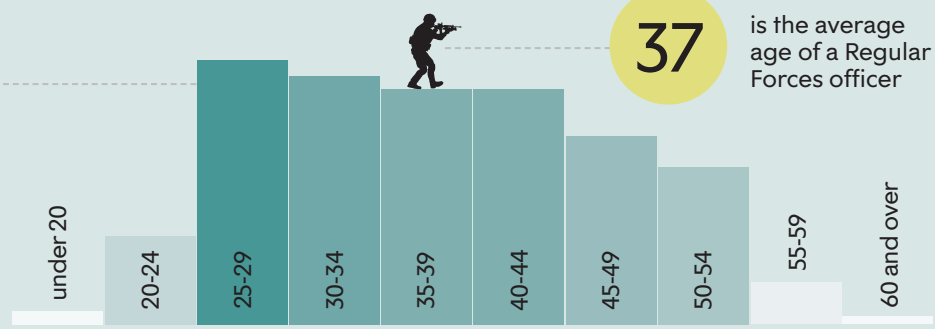
13.4% of the Army

3.3% of the RAF

Age

Most UK Regular Forces officers are aged 25-29

93% of 2020/21 intake were under 30



37 is the average age of a Regular Forces officer

* ROYAL NAVY/ROYAL MARINES. DATA SOURCE: MINISTRY OF DEFENCE. IMAGES: SHUTTERSTOCK

Introduction

David Meads
Chief executive at Cisco UK & Ireland

"The defence sector must invest in its workforce to truly harness the benefits of new technology"

The conversation on digitisation and the role it plays in society has no doubt been expedited these past 18 months, so it was a great privilege to spend time with industry and military experts at a round table earlier this year to discuss its purpose for the Ministry of Defence (MoD).

During the session, it was fascinating to hear about the latest happenings in the defence world and how it has reached an inflection point, with attendees acknowledging that there is a necessity to embrace digital change and encourage innovative thinking through the Integrated Operating Concept (IOpC) 2025. Setting out a new defence strategy, the IOpC signals a required pivot towards further digitisation so that data can be used for more innovative, agile and integrated decision-making.

Achieving a successful implementation of this digital strategy relies on three things: people, process and technology. Technology enables the creation, collection and extrapolation of information, and the business processes must be in place to ensure efficient distribution and utilisation of it. However, from my experience, I know that the people and organisational culture are also crucial to adopting and embedding a new digital path.

When embarking on its digital transformation, MoD leaders will not only have to consider how it supports its people and builds their skills, but how it will make its people feel present and a part of its new digital environment. As the IOpC points out, it is vital to observe diversity of thought, behaviour and practice within this new framework.

That is why company culture is the "secret sauce", especially as we all evolve our hybrid working models as an outcome of the pandemic. The future of work will need to be more dynamic and flexible with a greater focus on the culture so that everyone is included and at the heart of decisions, whether these are made in person or remotely. For MoD employees to buy into the new strategy, the organisation has to contemplate how to make everyone feel connected, heard, included, empowered, recognised and an integral part of their community.

All organisations are currently going through a transitional work experiment with their employees. This means allowing for a period of adjustment where we listen, learn and adapt to our employees' preferences and needs.

We are exceptionally fortunate that we – and the wider defence industry – already benefit from the formidable skills of former MoD employees. As a Gold status UK Defence Employer, we're incredibly proud of the heritage of our people who have served or still serve as reservists. Our military personnel not only bring a recognised pipeline of talent to Cisco, but their experiences and the ethos embedded within them is particularly inspiring and positively impacts their colleagues. People working in defence come from all walks of life – we must nurture their diverse skill sets to see the benefits of technological change.

CISCO

"Perfection is the enemy of survival"

Al Lynn on his love for inventing, the need for collaboration, and rebuilding Iraq's IT infrastructure from scratch

Defence research is often associated with military hardware: tanks, naval ships, planes and drones. Rarely is it noted for breaking new ground in information technology, from early iterations of the internet to modern-day applications of artificial intelligence (AI) and augmented reality (AR).

But as Al Lynn, vice president of emerging tech at Cisco, explains, the industry has always been at the forefront of digital innovation, with Lynn himself at the helm of creating real-life applications for the latest developments.

Lynn has had a remarkable career: he worked in the US military as a brigade commander, and served in Iraq in 2004 and 2005, where he had the huge task of building the country's new IT and network infrastructure from scratch.

"Imagine being told to build an entire network from the ground up," he says. "It was truly one of the biggest challenges I've ever had. And we had to do it in only six months."

Managing a team of 3,000 people, he built everything from generators, satellite systems and cellular networks to news centres, videoconferencing systems, and humanitarian projects such as schools and gyms for the Iraqi population. Many of these systems were life-saving, enabling troops to communicate with helicopters quickly so they could bring injured people to hospitals. Others were simply joyous: in a time before Netflix, his team set up film and music streaming to boost troop morale.

After his time in Iraq he was promoted to a one-star then two-star general, becoming responsible for all US army communications and running its IT and Cyber University. He was promoted to three-star and became head of the Defence Information Systems Agency (DISA) and commander of the Joint Force Headquarters-Department of Defense Information Network (JFHQ-DODIN), overseeing all IT and cyber security for the Department of Defence (DoD).

He joined Cisco in 2018. Having reached the top two jobs in IT, cyber and innovation in the US military, he wanted to use his tech skills and his experience to do "good in the world". "I knew it was time to transition to the private sector," says Lynn. "Cisco's teams were there for me when I was in combat, and the

Al Lynn (second from left) with a Cisco reconstruction team in Iraq

company has a military ethos that really spoke to me. I also knew the CEO, Chuck Robbins, and I found him to be an amazing human being who really cared about people."

His previous experience has not been wasted – working in the military has given Lynn a unique set of skills, from the ability to think on his feet to impeccable team leadership. "Ex-military people bring critical thinking," he says. "Imagine a world where seconds count and your life depends on getting a solution right. The outcome is people who are very focused and who want to build high-performing teams. And, of course, they want to win – war is competition and they are trained to win it."

Today, his role is less out in the field and more in the home office, but it is extremely multi-faceted. Day-to-day tasks include, but are not limited to, talking to pioneers of the internet, evaluating new technology, advising government on digital innovation and developing new inventions. "I think I have the best job in the world," he says. "Very few days are the same. The projects I've worked on just this month span digital identity, firefighting, drones, gaming, intelligent data systems and AR."

A big part of Lynn's remit also entails helping people more broadly – he regularly tackles real-world problems through Cisco's Technology for Good programme, which looks at issues such as disaster relief, economic development and education. He also develops products that aim to make a far-reaching positive impact: his team recently developed a prototype to remove the need for passwords on devices, making logging in more seamless while also increasing security. This is apt for defence but also has "great commercial potential", he says.

When looking to the future, it is perhaps surprising that Lynn is not excited about a specific digital advancement, but more about how product acquisition is changing, with a shift from the physical, such as ships and planes, to the more intangible, such as data and identity systems. He is also interested in the potential for commonplace items to be re-invented and given a new life.

"At DISA, we used commercial mobile phones to create top-secret ones," he says. "They were just slightly changed to meet that purpose; a soldier does not need much training on how to use it. When you take something that's readily available and familiar and add a military application to it, that's when magic happens."

Resourcefulness will be a crucial component of the future military, he says. Digitisation strategies such as the Integrated Operating Concept (IOpC) are an opportunity for Western military powers to accelerate product prototyping and decision-making in times of crisis.

"Our enemies can make cheap but effective innovations within a year," he says. "We must speed up, and not centre on the ten-year cycle of development we've been used to. With data properly digitised, the military could also be much better at anticipating threats and options. Perfection is the enemy of survival – getting there first with an 80 per cent solution is what wins."

Collaboration between military, industry and academia is also essential. Cisco has its own innovation hub with a cross-section of experts, and the UK government's Ministry of Defence will soon launch a Digital Foundry, where tech can be built and tested robustly prior to roll-out.

Hubs such as this result in diversity of thought and expertise, Lynn says, leading to positive global outcomes. There are several examples of tech originally designed for military purposes that went on to change lives. The ARPANET – Advanced Research Projects Agency Network – was developed by the DoD in the 1960s and was a forerunner to the internet, while GPS – Global Positioning System – was invented in the 1970s for spacecraft and is now a crucial navigation tool.

These inventions prove just how much influence digital innovation in defence can have – and how the military has a responsibility to ensure its implementation makes a positive impact. "Technology can be for good and for bad," says Lynn. "It's all in how you develop it and use it."

Angela Owen: We must move the dial on gender diversity

The founder of Women in Defence UK discusses the importance of increasing female representation

Why did you set up Women in Defence UK?

I set it up in July 2011, purely as a LinkedIn networking group. I'm an ex-Army officer myself; I left in 2008 to join PA Consulting, focusing on defence and security. I went from one heavily male-dominated industry to another, and when I went to conferences I'd walk in the room and often see 100 white men and half a dozen women. So I decided to set up a group, just to meet and chat. We now have 5,000 Twitter followers, 1,500 on LinkedIn, and 2,400 people have been nominated for our awards. It's an incredibly active community.

To what extent have attitudes changed in defence, and is diversity improving?

I believe there is now a realisation that diversity is essential for properly functioning teams. Ten years ago, Women in Defence UK was almost a pioneering group; there was still some risk attached to putting your head above the parapet. But there has been progress. All the services – Army, Royal Navy and Royal Air Force – now have more women at higher ranks compared to ten years ago. Progress has been slower in other areas. In 2012, women comprised nearly 10 per cent of the UK Regular Forces and today it's only 11 per cent. The Women in Defence Charter has an ambition of 30 per cent by 2030 – we recently published data on gender split, showing that the sector (including the Armed Forces, Ministry of Defence and wider industry) is currently at 19 per cent. This sits beneath technology, logistics and energy, so there is a lot to do.

In your opinion, what does diversity bring to defence?

I think it brings the same as it brings to any sector – diversity of thought. There is a story from Matthew Syed's book *Rebel Ideas,* which illustrates this well. In 2016, the chairman of the National Football Centre invited a diverse group to join the Football Association's (FA) Technical Advisory Board. They were there to advise football experts, including England national men's manager Gareth Southgate. They included a British Asian founder of tech start-ups; an administrator in Olympic sports; Matthew Syed himself; and the first female college commander at [the Royal Military Academy] Sandhurst, Colonel Lucy Giles. This group was

Left: There has been a drive to attract more women to defence engineering Above: Angela Owen, founder of Women in Defence UK

chosen because football experts' frames of reference would have overlapped with each other, and with Southgate's too. This could have led to mirroring – inadvertently re-inforcing latent assumptions that are already present. The same thing can, and does, happen in all industries, including defence.

Which women working within digital defence inspire you?

Lindy Cameron, CEO at the National Cyber Security Centre (NCSC). Her role includes overseeing NCSC's response to cyber incidents, improving the UK's cyber resilience, and identifying risks and opportunities in emerging technologies. She joined the NCSC with over two decades' experience in national security and crisis management. This includes being director general for programmes in Africa, Asia and the Middle East at the Department for International Development (DfID), and working at DfID's Baghdad and Kabul offices, at the Cabinet Office on development in Africa, and at the Foreign Office leading on reconstruction in Afghanistan. Whatever your gender, that's an impressive career.

How do you think the Integrated Operating Concept (IOpC) will impact diversity of the workforce?

The IOpC talks about how moving beyond a "closed-loop", "base-fed" approach will mean the industry has a better chance of accessing the best talent and skills. The challenge that the Armed Forces face is that they are bottom-fed with limited lateral entry, except for some professional officers, such as vets, lawyers and medics. The Armed Forces are looking at widening the scope of entry – perhaps engineering or technology could bring in more experienced hires. Aligned with the Women in Defence Charter, the Armed Forces have set the recruitment ambition of 30 per cent inflow of women by 2030. That won't be easy but it does show commitment to move the dial on gender.

What are the biggest barriers to attracting women to the industry?

The biggest challenge seems to be recruiting new women into the sector rather than recycling the few women who already work in it. Lots of effort is being put into schools to attract more women to defence engineering in particular, with some success. But I think we need to make even more of the fantastic female role models who work at all levels and in all areas, not just the Armed Forces. We need to get the message out there that it's a brilliant job and show the type of people who do it.

Can you see a future where Women in Defence UK does not need to exist?

Yes, please! Our long-term aim has always been to try to write ourselves out of business. The simple answer is to recruit more women. We also need to focus on equality of opportunity by improving working life, culture, and expectations on everyone. In the Armed Forces women can take up to a year's maternity leave, with generally up to six months of that on full pay. But paternity leave and pay is just two weeks. Policy for other types of parental leave such as paternity, surrogacy and adoption just hasn't caught up. This institutionalises the idea that women are the main childcare providers. While it might sound counter-intuitive, men need to be given the same choices that women have.

For women looking to move into defence, what are your words of wisdom?

The opportunities are endless. If you're an engineer, I defy you to find another sector with such diversity of equipment, from satellites to aircraft carriers to submarines. And it's a sector where you really can make a difference. Like the story of the cleaner at Nasa who said they were working to put a man on the moon, you really can see how your work helps to defend the nation. And speaking of rockets, don't forget that the first Brit to be blasted into space was a woman: Helen Sharman. So, my advice would be, if you're interested then go for it. Dare yourself to do it. ●