

The Urgent Need for a Talent Renaissance in The New Space Age

BAE Systems Digital Intelligence Insights Report



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Introduction

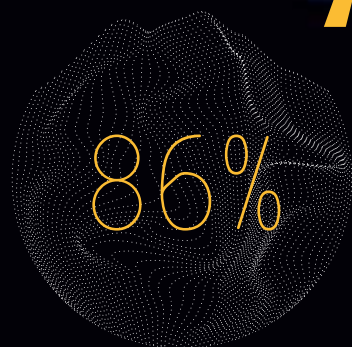
'New Space' has sparked public enthusiasm for space not seen since the Apollo programme. From the first Falcon Heavy launch to the beginning of commercial crewed missions, the space sector has seen massive investment, including microsatellite start-ups and spaceport construction, all over the world. This is not just about investment in technology, but also in the people working behind the scenes to bring these advancements to life. **The UK's space industry alone, for example, currently employs almost 47,000 people, a number that has tripled since 2000.**

As governments are realising the importance of space to the economy as a whole and the advantages of the global perspective for the defence domain, there is an increasing emphasis on growing the sector. Just last year, the UK published its first ever [National Space Strategy](#), followed by the publication of the [Defence Space Strategy](#) in February 2022 pledging to keep space 'safe, secure and sustainable'.

Within today's uncertain, ever-changing environment, the space industry is constantly looking to boost innovation and stay a step ahead of competitors - and digital technology plays a crucial role. [According to new research](#) from BAE Systems Digital Intelligence, 86% of senior aerospace decision makers surveyed say digital is key for enabling them to accelerate innovation and transformation, change processes quickly and keep up with the competition.

Yet, the sector can only be as sustainable and successful as its people - and it is currently facing an uphill battle to both attract and retain talent.

Raising awareness of space and inspiring the next generation of talent is at the top of the agenda for initiatives such as [World Space Week](#). The superstars of our industry are the astronauts, but the next frontier requires far more people than the few who have the opportunity to travel into space. Back on Earth, the space sector needs people with the skills to keep systems online and secure, supporting human spaceflight, but there is a much wider industry of satellites, ground support and applications derived from space data that needs people who are dynamic and adaptable to the fast pace of innovation. In the UK we have a shortfall of thousands of engineers, so attracting and training more is vitally important and requires urgent attention.



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Innovation in space for advantage on Earth

New Space in the digital age has also changed day-to-day life on Earth. Whether you are looking for the day's weather report or solutions to monitor and mitigate climate change, more often than not it will be underpinned by advancements in space technology.

Innovation in space has the potential to deliver more defence and commercial advantages than ever before. Almost all of our research respondents (95%) working in aerospace, for example, agree that their organisation is essential for the day-to-day running of society, while over half (51%) said they create a safe and secure environment for UK citizens.

Fortunately, the fast pace of growth and investment in space is helping to ensure that the sector continues to deliver key benefits on Earth. Worth [£270 billion to the global economy in 2019, space is projected to grow to £490 billion by 2030](#). Driven by cost-reduction in the accessibility of low Earth orbit (LEO) satellites, the global space sector has ushered in a new wave of innovation - and that technological acceleration is set to continue exponentially.

At the same time, however, a number of key barriers are standing in the way of achieving long-term, sustainable success, most notably when it comes to talent.

The urgent need for diverse space talent

To stay ahead in the New Space Age, building capacity and diverse digital skills is essential for ensuring continued secure innovation. Yet, the glaring digital skills gap poses a significant challenge to the future of the space sector.

Digital technology is playing an important role in the dawn of New Space. However, this accelerated digital transformation has added another layer to the high-stakes game of space, where resilience is mission-critical and vulnerabilities are quickly targeted by hostile actors.

Ensuring robust defences and innovation starts and ends with the question of talent, on finding the right people with the correct balance of knowledge, experience and pragmatism.

The sector urgently requires skilled people from all backgrounds to enter and stay in the field, Not just on the hardware side but including software engineers, DevOps talent and cybersecurity professionals. And importantly, they need to be trained to handle highly sensitive data in high trust environments.

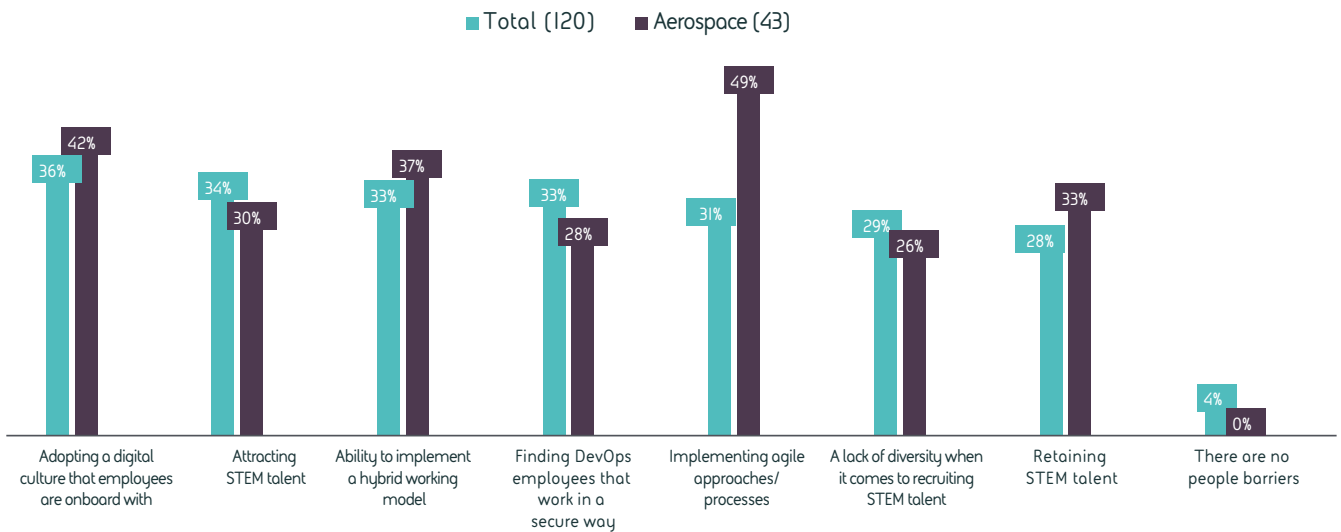
However, for 56% of aerospace decision makers, the combination of attracting and retaining this talent is presenting a major challenge, holding organisations back from becoming more digitally mature. What's more, over a quarter (26%) cited a lack of diversity - including gender, ethnic background and age - when it comes to recruiting STEM talent.

Combined with the pace of job creation versus the uptake of STEM subjects, the digital skills gap is cause for alarm. Without a renaissance in ways of thinking about STEM education and the digital skills required to innovate and stay ahead, the space industry risks losing ground.



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What people barriers have held/would hold your organisation back from becoming more digitally mature?

A skills renaissance for the New Space Age

Only a robust talent pipeline will ensure continued growth, unlocking the digital advantage required for a vibrant and secure sector.

Creating educational opportunities around space is crucial to building awareness. We need people from all backgrounds to recognise that working on space projects is an achievable goal. This requires taking steps to inspire underrepresented groups to pursue STEM careers. Creating role models for minority students, for instance, will help them to develop a greater sense of belonging, by enabling people with similar backgrounds to envision themselves working in fields such as space.

Bridging the STEM skills gap also requires schools, universities and organisations to focus on promoting alternative routes into these careers: Digital training courses, bootcamps, workshops and apprenticeship programmes are effective ways of nurturing high-level talent from an early age.

We also need to do more to retain people when they are in space roles, which means incentivising and empowering employees with opportunities for growth. Without this, the efforts of skilled people can become scattered and less meaningful.



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Conclusion

We have a collective responsibility to inspire the next generation to look to the stars - and fostering opportunities closer to home will get us there. For government, business leaders and the space sector, the urgency of investing in STEM, and equipping young innovators should be at the top of the policy agenda and part of every roadmap to future advantage in space.

Methodology

This research commissioned for this report was led by independent market research agency Vanson Bourne, on behalf of BAE Systems Digital Intelligence. The study, which was in the field between May - June, 2022, surveyed 43 senior IT and business decision makers from aerospace organisations with 1,000 employees. All interviews were conducted using a rigorous multi-level screening process to ensure that only suitable candidates were given the opportunity to participate.

References

- [Size and Health of the UK Space Industry 2021 \(25th April, 2022\)](#)
 - UK Space Agency
- [National Space Strategy \(27th September, 2021\)](#)
 - Department for Business, Energy & Industrial Strategy, Ministry of Defence, and UK Space Agency
- [Defence Space Strategy \(1st February, 2022\)](#)
 - Ministry of Defence
- [World Space Week](#)
 - WSW Association
- [Boost for space clusters across the UK \(1st February, 2022\)](#)
 - UK Space Agency



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We have a collective responsibility to inspire the next generation to look to the stars...



We are Digital Intelligence

BAE Systems Digital Intelligence is home to 4,800 digital, cyber and intelligence experts. We work collaboratively across 16 countries to collect, connect and understand complex data, so that governments, nation states, armed forces and commercial businesses can unlock digital advantage in the most demanding environments. Launched in 2022, Digital Intelligence is part of BAE Systems, and has a rich heritage in helping to defend nations and businesses around the world from advanced threats.

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