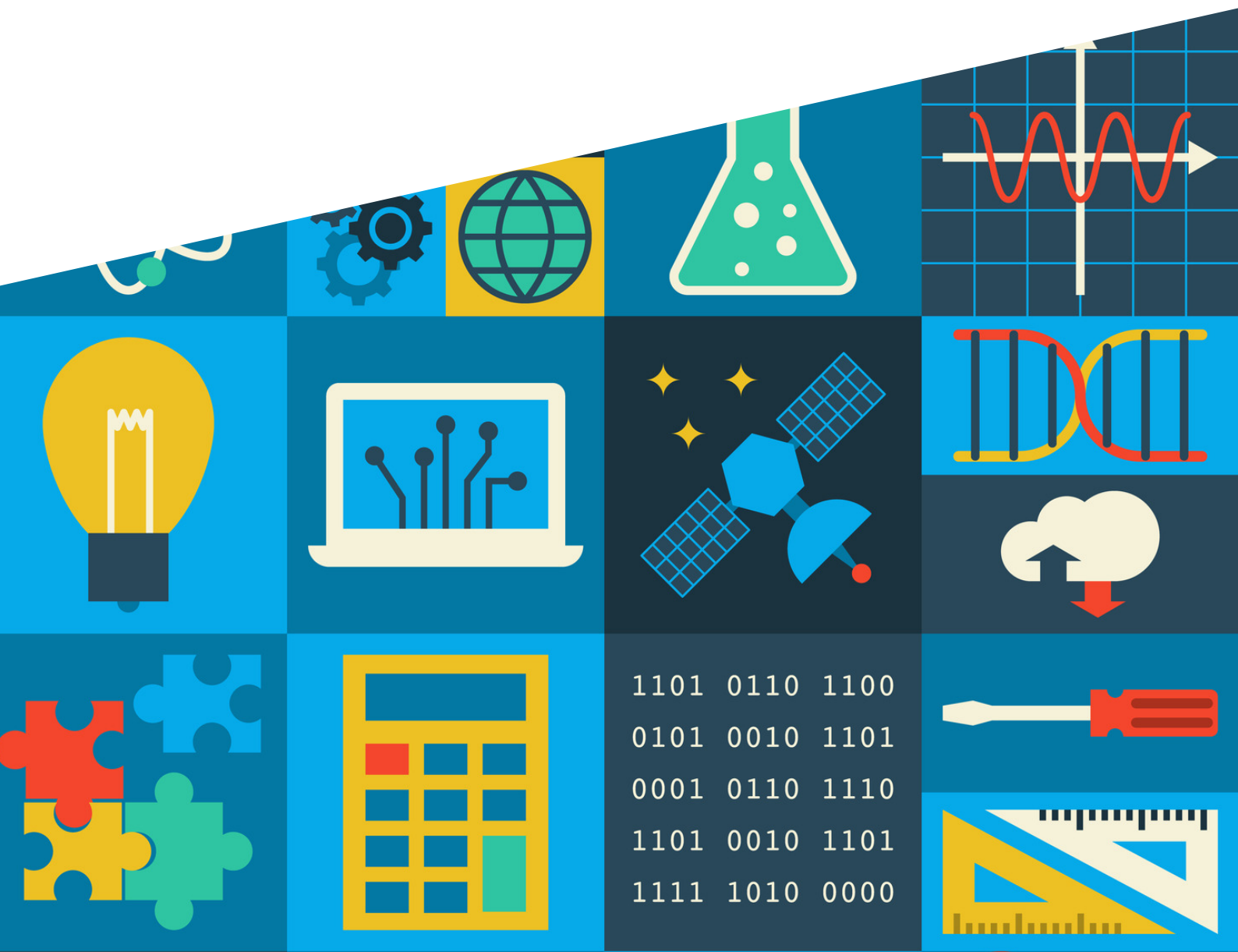


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# Attract, engage and grow: how to develop **tomorrow's** **STEM** talent



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# Introduction

Hardly a day goes past that you don't hear or read about the STEM (science, technology, engineering and mathematics) skills shortage - and for good reason. The gap already costs the UK an [estimated £1.5bn per year](#) and 89 per cent of STEM businesses find it incredibly challenging to recruit the right talent. Which is a worry when research from [EDF Energy](#) predicts that jobs in STEM disciplines will increase at twice the rate of other sectors.

A study by STEM Learning reveals the existing shortfall totals about 173,000. This equates to 10 vacant roles per business, on average and well over half of the businesses questioned said they expected the situation to worsen, fearing that the UK's reputation and technological advancement might be detrimentally impacted as a result.

Some of the biggest recruitment issues faced by the STEM industries are low awareness of the diverse jobs available, the perception these jobs and a lack of meaningful work experience opportunities – all of which mean that the gap will only widen as time goes on, unless action is taken at an earlier juncture.

## The education landscape

STEM within education is at its highest level right now. The Department for Education says that maths continues to be the most popular A Level subject and enrolments in STEM subjects generally have risen since the start of the decade. Encouragingly, the DfE also reported an increase in the number of STEM A Level entries among girls.

However, studies show that students lose interest as they get older. An IET study, examining engineering specifically, discovered

that at 11-14 years, 70 per cent of boys and 46 per cent of girls considered/wanted a career in STEM. Yet by the time they reach 17-19, only 52 per cent of boys and 25 per cent of girls still feel that way. Plus many undergrads drop out of university courses as they're unprepared for the challenging field of study or, for females, because of the lack of other females in class.

Figures from 2016 show that just 24 per cent of the 75,000 students that graduated with a STEM degree had a job in a STEM field and almost three-quarters of female graduates left the sector altogether. It's clear, therefore, that there's an urgent need for more STEM activities to take place at school and to increase awareness of non-degree routes into it.

So what can you do to help develop pipeline sustainability and prevent any leaks?

ARM held a STEM event in conjunction with technology and engineering clients [Semta](#), [adi Group](#), [Air Products](#) and [GetMyFirstJob](#), where the message was evident: there are three main areas that companies need to consider in order to develop a long-term, holistic STEM engagement strategy - attract, engage and grow.

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# 1. Attract

Attraction is a vital part of the recruitment process regardless of industry, but awareness of the full range of STEM roles is seriously lacking. The perception is of dirty, manual jobs that simply don't attract enough of a varied candidate base. Fortunately, there are many ways to start reversing these problems. Here are some examples of action you can take:

## Launch your own STEM initiative

Engineering UK [research](#) found that there is limited access to STEM careers activities among young people aged 11-14. Just 28 per cent had taken part in such an activity in the last year, highlighting the need for 'STEM outreach communities to work together to make such activities available to all.' That's what our event collaborators do:

- Semta: The science, engineering and manufacturing technologies alliance brings employers and education together to focus on skills. Sarah Dhanda, Semta's Head of Employer Engagement and Partnerships told

us they launched an [Engineering Talent](#) matching service, which 'connects the oversupply of [apprenticeship] applicants to SMEs / supply chain'. Essentially, it enables large employers to redirect candidates who have been 'pipped to the post' to smaller businesses, keeping interested candidates within the STEM sector, retaining and training them.

- adi Group: in the ten years to 2015, adi Group's workforce quadrupled, James Sopwith, Group Strategic Account Director, told us. He added that it will more than double again by 2020, hence the urgent need to take action to create a sustainable talent pipeline. So, in addition to its successful apprenticeship scheme, adi Group created a [pre-apprentice programme](#) to equip 14-16-year-olds with practical hands-on skills and qualifications, and get them ready for a STEM working environment. Designed to 'raise the aspirations of young people' by offering a different learning experience whilst still at school, the scheme

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*"The shortage is a problem for employers, society and the economy, and in this age of technological advancement the UK has to keep apace. We need to be in a better position to home grow our talent but it cannot be left to government or schools alone – businesses have a crucial role to play too."*

- Yvonne Baker,  
Chief Executive, STEM Learning.

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has created 48 pre-apprentice placements so far. At the first pre-apprentice cohorts' graduation in 2018, five students were offered and took up full time engineering apprenticeships with adi, including the first female mechanical apprentice.

- Air Products: the leading global industrial gas manufacturer places a big focus on STEM engagement, especially within school to pre-college age groups. As part of this, the company offers work experience (one recent participant secured an apprenticeship at Bentley Motors), attends career fairs, has involvement in student projects, sponsors awards and events, and trains Science Ambassadors. One of the most exciting activities is [Space Camp](#), where sixty 11-13-year-olds from across the UK spent a week learning about space and science. "It's also thinking smart about how to reach those students that might otherwise go under the radar," says Lynn Willacy, Community & STEM ambassador for Air Products, UK & Ireland.

There are many, many ways to get involved: mentoring, campaigns and fairs, hands-on activities, competitions, visits, the creation of STEM ambassadors. The choice is yours!

### **Focus on diversity**

At our event, David Allison, Managing Director at GetMyFirstJob shared data from the ONS that reported the biggest proportion of unemployed economically active people are

what they call 'other than white' ethnic groups – meaning that businesses are missing out on a significant amount of potential talent. This statistic emphasises the importance of getting the message out to everyone, using channels that reach young people in all socio-economic groups.

Taking engineering alone, minority backgrounds account for just [six per cent of the workforce](#), and women for 10 per cent. These are both weighty issues that will be further examined in subsequent blogs, but it highlights how much talent could be slipping through the STEM net.

Naturally, diversity should be considered at recruitment stage (i.e. not passing hiring managers an applicant's personal details to remove unconscious bias), but especially at the attraction stage. Get involved with schools that might otherwise pass under that aforementioned radar.

Use augmented writing tools such as [Textio](#) to help produce neutral, appealing and unique job adverts (not copy and pasted versions of the same thing), to attract a wider talent pool. Then post those job adverts in places where there is an equality of access and make clear that a university degree isn't the only way to achieve professional success and fulfilment.

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## Find out where your talent is

It's impossible to attract early entrant STEM talent when you don't know where it is - how can you be sure whether you're advertising in the right places? Understanding your target market: what they want, what interests them and - importantly - where they are, is crucial for filling roles.

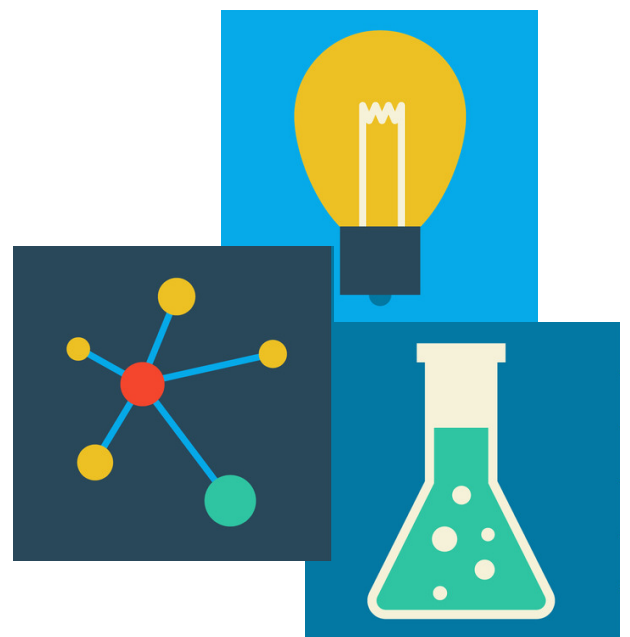
Possessing comprehensive [market insight](#) enables you to map which educational institutions and competing businesses people with the skills you need attend / are employed by and where they are geographically. This allows you to target your advertising more cost-effectively to the right areas, or gives the opportunity for you to create a partnership with a relevant college or university.

## Humanise your careers page

Your careers page is a huge advertisement for your company and should be interesting, appealing and relevant. People want insight into team dynamics and company culture, so include inspiring stories and videos about other early entrants' career journeys. Include short videos of the building to give a better sense of the working environment.

GetMyFirstJob recommends using images that resonate with younger applicants, displaying pictures of 'people like them' in both professional and work social situations. Site analytics will show if your tactics are working, so keep measuring and make changes when necessary.

Additionally, ask your employees to write testimonials for you on platforms like Indeed or Glassdoor, as increasingly, candidates turn to review sites for additional information about the business and how it treats its staff before deciding to apply. Employees are far more trusted than the business, so encouraging them to do this could boost your reputation and attractiveness ten-fold.



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## 2. Engage

The STEM talent pipeline is leaking at various stages, from school right through to graduate schemes and beyond. [Indeed](#) claims that two-thirds of us look at other jobs within 91 days of being hired at a new company, so keeping talent engaged in the early part of their career, as well as later on, is of vital importance. Rest assured, there are plenty of steps you can take to encourage retention:

### **Refresh your on-boarding**

The first is to examine your on-boarding process. It's a well-known fact that the longer it takes, the less likely your applicants – your future talent – are to stick around. That's point one. Point two is to make it interesting. Invite candidates for a tour of the facility, let them speak with employees to get a feel for the culture and enable them to get excited about their possible career – a [recruitment open day](#) is a great way to achieve this.

Small things, such as keeping in touch during the on-boarding period and inviting them to team events, can really help engage your new starter. Provide them with easy-to-digest information rather than a 200-page staff handbook. Introduce them to a 'buddy' ([research by Indeed](#) reveals that people who have a best friend at work are more engaged and loyal, and that 'the strongest workplaces are marked by human connection').

Ultimately, think about enhancing their on-boarding experience, both before and after they walk through the door.

### **Nurture a 'family' culture**

To keep your early entrants engaged, create a culture and reward system that matches millennial expectations – and maybe pleasantly surprises your current workforce, too. Younger people don't work the same way as their parents and grandparents did. Numerous studies have found that they most value flexibility, even over compensation. Being able to choose their hours or work remotely, where possible, is a huge draw if you can offer it.

Promoting your company values can also maintain engagement. Nurture a 'family' culture which includes awareness around mental health, wellbeing and recognition of a job well done – then demonstrate it. An Air Products' video, placed on its careers page, showcases employees from around the world, saying: "I am Air Products / This is my company," and emphasises the family feel.

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Communicate your CSR initiatives, such as volunteering, charity endeavours and working with the community to boost STEM. adi Group features on its website photos of the team while on various volunteering activities, bringing it to life for the user. Examples like these not only enhance your reputation, but help you to be seen as an employer of choice. Obviously, a competitive benefits package is also helpful in engaging early entrants, aligning the options with employee preferences – so offering a suite of benefits should appeal to all.

### **Manage talent**

Engage your talent by setting them objectives and goals to reach as part of a performance management programme. This gives direction and can boost morale especially if it links to an incentive. The advantage to the business is that through these programmes, it's easier to identify and measure potential. It also better enables succession planning, as it'll be evident which skills exist in the business.

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*“For businesses to capitalise on new opportunities they will need to put talent development & future workforce strategies at the forefront - talent pipeline and workforce is essential.”*

*- Senta*

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## 3. Grow

At our event, Semta's Sarah Dhandu gave us a sage warning: "Tomorrow's products cannot be delivered by today's capabilities". It shouldn't come as a surprise, as there is a major divide between new entrants and the experienced workforce in terms of ability and skills. Here's how to grow your early entrant STEM workforce:

### **Offer a defined career path**

Essential for your future talent pipeline, ensure that your younger workers can see a clear career path, giving them something to aspire and work towards. Some 78 per cent of employees say they'd stay within a business if they knew they had a clear career path. Doing so allows the individual to understand the sorts of skills they may need to develop (informing training plans) and lets businesses improve their pipeline management. Career paths are motivating – after all, one of the biggest reasons for leaving a company is: 'there was nowhere for me to go.' Progression is a huge motivator, plus it keeps talent in the business.

### **Mentoring and development**

A [Gallup survey](#) looked at what different generations look for when applying for a job; in the case of millennials, the most important factor was 'the opportunity to learn and grow'. The provision of training and development should be a given, therefore. Employees like to feel they're being 'invested' in, valued and viewed as a long-term prospect. Consider even offering a fast-track management development plan for exceptional talent.

Taking that a step further, you could create your own 'university', where learning takes place in structured classroom and/or self-paced scenarios. Air Products runs such a [university](#), aimed at going 'beyond traditional training to capture informal learning, best practices and the exchange of knowledge and experience.' Not purely academic, it also helps employees to develop through connecting with other people.

Mentoring is another hugely beneficial provision, enabling the early entrant to gain insight, receive coaching and to learn from an experienced colleague. Sometimes this works best where the mentor and mentee don't do the same role, and can meet to talk instead about professional development rather than the specifics of a job – such as building confidence, growing valuable networks and talking through any work issues.

### **Upskill your existing workforce**

No doubt your workforce comprises employees that are early on in their STEM career, that haven't come from a related background or completed a relevant qualification. That doesn't mean they can't be upskilled and develop the skills that your newly-recruited STEM grads possess. Capitalise on the talent already in situ and open up development opportunities for all. To do this successfully, you need to recognise the skills that are lacking, and what you're going to need in the future.



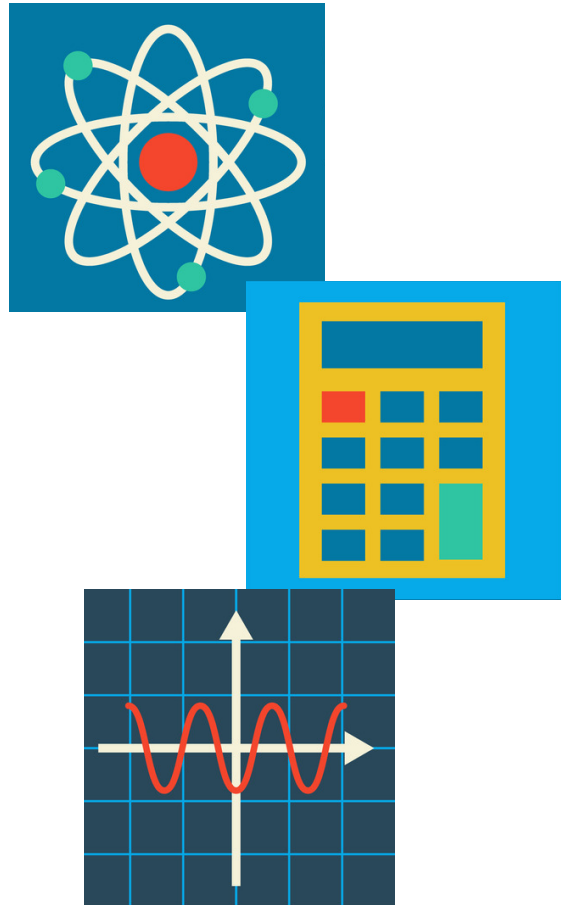
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# Final thoughts

Developing a STEM hiring strategy and ensuring pipeline sustainability isn't something that can wait; it's not happening in the future, it's happening now. We'll need geotechnical design engineers, intelligence consultants and robotics engineers before we know it. Hence the creation of a holistic plan must be a priority.

For a strategy to be effective, the entire organisation must possess the right mindset - not just HR, but hiring managers and the whole workforce too. Ensure everyone in the business is aligned to and involved with your overall approach, each one acting as an ambassador for the business and for STEM - that will help to attract, engage and grow your STEM talent.

To discuss any of the themes mentioned or to talk about how to promote your STEM expertise to potential talent, please [get in touch with Chester Boothe, Client Relationship Manager, ARM and Optamor.](#)



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*“Finding efficient ways of securing a solid supply of talent is a priority for every industry.”*

*– Engineering UK 2018*



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