CYBER SECURITY TECHNOLOGIST, HMRC

Introduction

In 2015 HMRC was given responsibility for the cybersecurity apprenticeship programme (Level 4) funded by the National Cyber Security Programme (NCSP). It is cross-Government and is the first of the professions in government to own an apprenticeship programme.

The programme had a target of 25 apprentices to be placed in 2015-2016. This target has been met, with apprentices placed across ten departments, including the Cabinet Office, Home Office and NHS Digital. Going forward the apprenticeship team is looking to extend its reach across additional government departments and develop other standards.

Implementing a new standard

The Cyber Security Technologist apprenticeship is a recently developed standard (June 2016). Therefore, the apprenticeship team had the dual challenge of implementing a new apprenticeship scheme into the Civil Service as well as that standard being completely new and untested. Ensuring quality was important, and the opportunity was taken to work with the learning provider (identified through a Civil Service Learning [CSL] Provider consortia) to create a package that delivered for their business needs and met the standard. The quality of the instructors on the course was also checked, with it being particularly important in such a dynamic and fast-moving area, that they were informed of the latest developments in cybersecurity. The curriculum has been well received, with the breadth and the content of the courses being positively commented on.

> *"The strength and the weakness [is that we were] picking it up from the start with nothing to go on. It meant that there was an ability to mould it the way we wanted with strengths-based recruitment …[but] at the same time, there was difficulty because you really had to start completely new stakeholder engagement."* Lead for the cross-Government cyber apprenticeship scheme

The programme team explored a number of options for the provision of a recruitment service for the apprenticeship including CS Resourcing, CS Specialist Recruitment, CS Fast Track Team, Crown Commercial and the CS Resourcing Framework. Each of these work areas provided helpful advice and guidance but could not assist within the specific requirements of the programme. CS Learning provided further support by scrutinising its existing contracts with suppliers and working with the programme team to negotiate a favourable outcome for appointing a recruitment provider.

Working with a new apprenticeship programme has come with both opportunities and challenges. Dependency challenges had to be managed, as the standards were developed in parallel to setting up the programme. The standard was published in late June 2016 and recruitment started in early July. Central to negotiating these dependencies was establishing trusting relationships and good communication between the programme

team and external bodies, such as the learning provider and recruiters. In addition, it was a challenge to try and sell a package internally that didn't currently exist, therefore had no evidence of success. To overcome this, the potential benefits of the scheme were highlighted while emphasising the support that was on offer from the programme team, CSL, the learning provider and apprentice tutors and mentors.

Inclusivity through strengths-based recruitment

The apprenticeship programme has led the way in innovating the recruitment method to enable a more diverse apprentice cohort who demonstrate the aptitude, ability and behaviours which best fit the apprenticeship requirements, even if they have less experience. This involved no longer requiring applicants to hold STEM qualifications and changing the recruitment method to a strengths-based one. This approach was selected as it delivers the requirements of the Talent Action Plan and supports delivery of the recommendations made in the Bridge Group Report on Social Mobility. In addition, strengths-based recruitment delivers a consistently fair and inclusive recruitment experience, with no discrimination across gender, ethnicity, or social background. The use of this approach enabled a focus on gender balance, and ensured inclusion for candidates who may be on the autistic spectrum and those who are more introverted.

The recruitment company, identified through the Civil Service Learning Apprenticeship Team, promoted the use of strengths-based recruitment. This uses methods to identify candidates who have the strengths required to do the job, placing less emphasis on experience and more on potential,

The recruitment process for the Cybersecurity apprenticeship included dissemination of the advert through multiple channels, including a focus on social media, with the advert itself designed to appeal to a broader spectrum of people. Applicants completed an online assessment, comprising of: an Apprentice Strengths Test, which covered the core strengths identified for any apprenticeship - ownership, learning agility, collaboration, social adaptability, drive and resilience; a Numerical Reasoning Test; and a Technology Mindset assessment, which assessed a number of dimensions of having an aptitude for working with technology.

> *"...strengths-based recruitment really identifies your potential, not your history... it allows people the opportunity that normal, traditional recruitment methods won't."*
> Manager for the cross-Government cyber apprenticeship scheme

If applicants were successful in the online assessment they then had a strengths-based telephone interview where they were assessed on the three strengths identified as core for the Cybersecurity Apprenticeship Standard. Strengths-based interviews are formally structured, with specific straight-forward questions, which are designed to bring out the best answers from a candidate. The final stage was participation at an assessment centre, where they took part in group exercise, presentation exercise and strengths-based interview. Assessment centres were

geographically spread to prevent the diversity of the cohort being restricted, due to inability to attend a centre close to them.

Candidates identified the process as being more of a positive experience than other assessment centres and better for those who could not articulate themselves very well – reflecting well on and enhancing the Civil Service as an employer brand. Candidates frequently enjoy the experience of strengths-based assessment, whether online or through interviews or exercises, because they believe it allows them to demonstrate their best qualities.

The outcome of the strengths-based recruitment was an increase in the number of women gaining a place on the apprenticeship and a high calibre cohort who were a good fit for an apprenticeship in cybersecurity. Not all of the successful applicants had STEM qualifications, something which has been a requirement previously. Positive feedback about the quality of the apprentices has been received from both learning providers and line managers and bids have already come in for apprentices from next year's cohort.

The success of the strengths-based recruitment has led to external organisations adopting it. For example the Critical National Infrastructure scheme are launching a sister programme that will use the same recruitment model. There is also appetite for it to be used more widely within the civil service.

Training and support

There is acknowledgement that for a lot of apprentices, this will be their first experience of work. The structure of the apprenticeship has therefore been designed to allow them time to settle into a work environment before starting their courses. When they do start their courses after every module they should have the opportunity to apply their learning in the workplace, so they can reinforce it.

Apprentices attend an induction day where they are given background information on the cybersecurity industry and the global context. It is explained how they will be working and learning, what is expected from them (a specific list) and what is expected from their managers. They are also introduced to their managers.

Ongoing support is provided both formally and informally. Informal peer support is provided by a named apprentice from an earlier cohort; formal support from their line manager and mentor from the learning provider. The recruitment company create a report for each individual, which includes areas for development. This is given to the line manger as a starting point which can then be built upon. The mentor from the external provider meets with the apprentice approximately every 6 weeks and the line manager will join for some of the meeting. Apprentices are also able to contact the manager for the cross-Government cyber apprenticeship scheme directly if they have any need to.

Benefits to the organisation and the individual

For both the Civil Service and the cross-Government Security Profession, succession planning is fundamental: to bring new people in, to hear new ideas and benefit from different ways of thinking. The apprenticeship offered the opportunity to facilitate this, whilst at the same time being able to develop the apprentice within the culture and organisational values of the civil service.

> *"...the fact that you've got a job, and it's a permanent job, your mindset is very different. That means people can immediately start and immerse themselves into that business. They haven't already got half an eye on the door because they know that this time is short."* Manager for the cross-Government cyber apprenticeship scheme

For the Civil Service, there was also the benefit of creating more diversity - helping to develop a "modern civil service". Most departments offer the apprentice a permanent contract, facilitating long-term change to the diversity of the workforce. Establishing a feeling of permanence is felt to be important, as it helps the apprentice to embed into the team and to develop into the culture, rather than feel it is a transient position and worrying about needing to start to look for a job, rather than focusing on the apprenticeship. Therefore, although each department can choose whether to offer a permanent contract or not, they are encouraged to do so.

Apprentice views

Rowan*, a cybersecurity apprentice, knew that he did not want to go to university - being put off by the debt and wanting to learn on the job - and so researched apprenticeships, seeing it as a merger between a job and a degree. Rowan noticed the Cybersecurity apprenticeship advert on social media and felt that this would be a good option as he liked IT and felt that Cybersecurity would be a prominent sector in the future. A career in the civil service was not something that he had previously considered, and Rowan was surprised that they offered apprenticeships to people who had no experience. From being unaware of the difference between public and private sectors, Rowan now sees a benefit to starting his career in an apprenticeship in the civil service. Specifically he appreciates the choice of career opportunities and the different routes he could take, viewing the apprenticeship overall as a good entry point.

> *"At first, there was thinking that maybe apprenticeships were for the people that couldn't really make it into uni, but that's well out the window now. It's for everyone. Anyone that wants to do it, anyone that has a drive to do a certain job, it's the best thing for them to do, in my opinion."* Apprentice

Rowan feels that an apprenticeship was definitely the right choice for him, as it suited his preference of applied learning. Rowan also feels that getting experience in a workplace is increasingly important, and the apprenticeship allows him to do this whilst learning.

Challenges

There are challenges to the delivery of this apprenticeship due to both the nature of the profession and the civil service requirements for security clearances. All apprentices must go through security vetting clearances and this has led to delays with starts. The nature of the job, and its security element, also means that the apprentice has to be there for some time before they start to develop the knowledge and skills to be able to be involved in cybersecurity work. This poses a risk that apprentices could get frustrated at the beginning and want to drop out. Peer support goes some way in helping prevent this, as the apprentice can hear from others who have passed through that stage and are now more engaged in the work.

As it is a new apprenticeship standard there are not necessarily employees who have the same job as the apprentice, and this could leave the apprentice feeling that there is not someone they can directly learn the role from. This is the disadvantage of being a first cohort and should be mitigated as the scheme is extended. The apprentice has support from their line-manager who is in the same team as them and from the external provider.

The apprenticeship programme is being delivered at the same time as many departments are undertaking workforce planning, which means that headcount is under scrutiny. Departments need to be able to see the long-term benefit of the apprenticeship, as it can be perceived that they are giving up a headcount position and waiting 18 months before they get an employee who is fully capable. In the future, it is the intention that there will be a conversion offer for existing staff, which would help to introduce apprenticeships where there is a skills or succession planning need.

Replicability

The following factors are key to the approach for this apprenticeship:

- **Strengths-based recruitment:** By using a strengths-based recruitment approach, the final cohort was found to be more suitable for the apprenticeship and was more diverse – for example including more women – than in previous years. This also ensured the recruitment approach delivered the requirements of the Talent Action Plan and supported delivery of the recommendations made in the Bridge Group Report on Social Mobility. Feedback from candidates about this approach was also very positive, enhancing the Civil Service as an employer brand. The approach has been such a success that other departments and external organisations are also looking to implement it.
- **Training and support:** The training provider had been engaged for previous pilot schemes; therefore, they had a loose framework of developed knowledge modules which could be adapted to the final published standard. The organisation has developed an induction day for apprentices, which introduces them to the organisation, as well as the profession and the global context of cybersecurity. This gives the apprentice a grounding in the current context before they start their course, providing

them with an understanding of how their work will fit into the wider picture. All apprentices were allocated a tutor and a learning mentor which meant that they received ongoing support during the formal period of training. This support was enhanced within the workplace by assigning a departmental line manager to each apprentice.

- **Gaining internal buy-in:** In developing the apprenticeship it has been important to gain buy-in from the organisation and to achieve bids from departments. In the future, the team will be asking departments to sign a formal agreement if they wish to take on an apprentice.