

Bridge
Group
research
action
equality



Socio-economic diversity in the tech sector

December 2020

Preface

With special thanks to BNY Mellon for their generous funding and support to enable this project.

This research has been undertaken by the Bridge Group in collaboration with 11 partnering employers.

This research has been made possible by the quantitative and interview data contributed by partnering employers for our analysis. This comprises data on socio-economic and educational background from over 3,400 tech employees and qualitative data from 27 tech employees.

We are also grateful to the Sutton Trust who gave us access to their database of young people. This enabled us to explore the views of over 800 young people aged 16-18.

It is not always intentional but being White, male and middle-class puts me at a significant advantage because essentially there is a large proportion of my peers who are very similar to me which instantly means that there is a commonality of rapport, language, culture. I suspect a lot of people aren't aware that it influences their recruitment practices in technology.

The hardest thing is finding out about the tech sector, once you have found out about it, it is accessible. It's not a case of needing to know the right person in order to get in, it's more that you need to know that the company exists in the first place.

I do think that people are quite influenced by their parents and what they do. I guess if you don't know anyone who works in tech you might not see it as an option. I had an interest in tech because my dad works in the sector and I did some work experience in his company for a few weeks.

People need to stop thinking that they need to have high technical capabilities to work in tech. I work in IT and people think I know how to fix their computers or phones, but I have no clue. When you get into the industry you realise it's not all about coding or programming. You can do any subject at uni and still have a career in tech.

Jobs in tech are primarily in London and I think for quite a lot of people that's not an option. Most big tech companies will have their main site in London. I mean I had to save an awful lot of money to move to London, just to come here.

We need to make sure that the recruitment process doesn't filter out people that have come into tech from different routes. An obvious example is algorithm questions. It's something I have never used in my professional life but it is frequently used in interview questions. That excludes anyone who hasn't come through a fairly classical computer science career path. Also, if companies use university degrees as a proxy for potential, if you are from a lower socio-economic background you are less likely to go to university which is therefore a barrier to access to those careers.

Executive summary

Technology matters. It has transformed the way that we live our lives, impacting the global economy, the shape of the labour market, and the fundamental way in which work is undertaken. It has boosted every industry, creating new employment opportunities and advanced innovative and faster modes of transport and communication. The application of technology has progressed research in all fields, ranging from genetics to economics, and internet technologies have become ubiquitous for us all.

Since technology pervades our social and working lives, it therefore matters which ideas, values, and experiences help to inform its development and application. Considering the workforce in this area (especially relative to many other sectors), there has been minimal investigation into the diversity of those who access and progress in tech roles/the tech sector¹ and the extent to which characteristics such as gender and ethnic group affect this. There is also a growing evidence base in comparable sectors that socio-economic background has a strong effect on these matters, often impacting more significantly than protected characteristics.

This is the first in-depth study to focus specifically on the socio-economic background of those working in tech roles and/or the tech sector. The research has been designed to generate findings and recommendations to inform positive change in this area.

The research has comprised:

- > A comprehensive review of the relevant literature
- > Analysis of macro-data (including national datasets, such as HESA)
- > A review of national policy

¹ We use “tech sector” in a very broad sense to mean anyone working in tech (i.e. in a tech role in a tech firm, in a tech role but not in the tech sector, in a non-tech role in the tech sector etc.). The reason that we take such a broad approach is that (non-) technical roles mean different things to different people. We therefore asked participating organisations in this research to identify their ‘tech’ employees for our survey.

- > Analysis of detailed survey responses from over 3,400 employees in tech roles and 27 in-depth interviews
- > Analysis of survey responses from almost 800 young people aged 16-18 and 10 in-depth interviews
- > Reference to extensive Bridge Group research in other sectors, including professional services, broadcasting and real estate.

While gender is considered to be the primary diversity challenge in tech (both in the wider literature and amongst our interviewees), analysis of roles across firms reveals **a significantly unrepresentative workforce with regard to socio-economic background**. This is more acute in some occupational areas in tech, and in more senior roles.

The qualitative investigation reveals commonplace misconceptions and stereotypes relating to the tech sector, which are considered by those who we interviewed to be the main factors contributing to unequal access. Most tech roles are not 'technical' *per se*: the sector is multifarious and complex, but we identified **a widespread misconception that tech roles require 'hard' skills** such as programming, which we found discourages many young people from aspiring to careers in the sector.

More importantly, we find that that **limited science and technology capital** (a well-established term in the literature and defined precisely herein) contributes significantly to unequal access to the tech sector. **It is not necessarily who you know that facilitates access to the tech sector, but rather being aware of the complex landscape of tech roles and companies, and more generally 'how the sector works'**. The majority of the young people from lower socio-economic backgrounds whom we interviewed could not identify anyone (a friend, relative, acquaintance) who works in technology, and described feeling distant from the sector. Few had opportunities to talk with professionals to understand what it is like working in the tech sector; and this means that **young people's perceptions are based primarily on impressions that are shaped by popular and media discourses**.

Our findings also reveal and explore important ways in which socio-economic background intersects with gender to create a 'double disadvantage' for women from lower socio-economic backgrounds. **In the tech sector it is particularly important not to homogenise ethnic groups under the term 'BAME', since some ethnic groups are significantly overrepresented**. For example, in this study the percentage of tech employees from Asian ethnic backgrounds

was more than double the proportion in the UK workforce (though they are still underrepresented in more senior roles).

We are cautious not to extrapolate findings from this study and apply them across the sector (and we note that the majority of responses from tech employees come from one large professional services firm). However, they are likely to be relevant to the participating organisations and we commend their involvement and appetite for evidence. We also hope that this research will inspire others across the sector to do the same.

Using our findings from this research and considering the context of the tech sector, and also drawing on our experiences across other sectors, we make a series of recommendations. For the tech sector, this includes specific advice on the collection and analysis of employee data, and how to progress more inclusive hiring practices and approaches to workforce culture. In the context of Brexit, Covid-19, Black Lives Matter and more, action is what now counts.

We are grateful to the thousands of colleagues who have contributed their demographic details and views, via surveys and interviews; and to the various groups (including the Sutton Trust) who have helped to inform and steer this research. We are confident that this primary research will build on the existing evidence base and support more progressive approaches to access, hiring and progression in one of the most critical and progressive areas of the labour market.

Key findings

- 1. Our analysis of tech roles across all firms providing data for this study finds a picture unrepresentative of the UK workforce, notably regarding gender and socio-economic background.** While in the literature, there is a lack of clear evidence around the representation of people from lower socio-economic backgrounds, our analysis of tech roles across the firms participating in this study found that the socio-economic background of tech employees is comparable to some traditional professions (as defined by the NS-SEC classifications). 67% of tech employees come from professional/managerial backgrounds, 21% attended independent or fee-paying schools and 31% are female.
- 2. This study finds greater ethnic diversity in tech compared to the wider UK workforce:** 30% of respondents were from BAME backgrounds, compared to 14% in the UK workforce. The percentage of tech employees from Asian ethnic backgrounds in particular was more than double the national average of 8%.² However, our analysis found that the proportion of employees from BAME backgrounds decreases at senior levels. We also found that the representation of ethnic minorities is partly driven by people who attended school outside the UK. In other words, our analysis suggests the ethnic diversity found in this research stems from non-UK national tech employees.
- 3. We find that tech employees participating in the survey were highly educated and international.** The vast majority (87%) of respondents had completed a degree and more than a third (34%) indicated that they had completed most of their secondary school studies outside the UK.
- 4. Our interview findings reveal that tech employees tend to regard gender as the main barrier to diversity within the tech sector.** Overall, gender diversity is seen as the main priority and the biggest challenge: interviewees (professionals working in the tech sector, mainly in large professional services firms) seem very familiar with this topic, discuss

² www.ethnicity-facts-figures.service.gov.uk/uk-population-by-ethnicity/demographics/working-age-population/latest

the challenges of attracting female applicants and regard it as a major concern. Interviewees are much less aware of the issue of socio-economic diversity.

5. **Interviewees think that employers are becoming more flexible and open in terms of attracting candidates with different academic backgrounds** and who have different career trajectories. However, recruitment practices seem to depend on the size of firms and the type of role (e.g. technical vs. non-technical, junior vs. senior).
6. **Interviewees identify misconceptions and stereotypes around the tech sector as the main factors contributing to unequal access.** The employees whom we interviewed argued that most tech roles are not technical, and that the tech sector is extremely diverse. They believe there is a widespread misconception that tech roles require hard technical skills, such as programming, which may discourage young people from aspiring to a career in tech. This was confirmed in our surveys and interviews with young people. Although young people enjoy technology, think computing is an important subject and are confident in their digital abilities, most do not aspire to work in technology; this is partly because they see a career in tech to be reserved for the tech-savvy. Young people are aware of a range of different jobs which exist in tech, but these tend to be highly technical jobs which require hard technical skills (rather than digital skills).
7. **There is evidence from our interviews with tech employees and young people in Years 12 and 13 (16-18 years old) that limited science/technology capital³ contributes to unequal access to the tech sector.** It is not necessarily who you know that facilitates access to the tech sector, but rather being aware of the various tech roles and companies, and more generally how the sector works. The majority of the young people that we interviewed could not identify anyone (a friend, relative, acquaintance) who works in technology and described being quite removed from the sector in this respect. Few had opportunities to talk with

³ Archer et al. (2013: 3) define science capital as “science-related qualifications, understanding, knowledge (about science and ‘how it works’), interest and social contacts (e.g. knowing someone who works in a science-related job).” Archer, L., Osborne, J., DeWitt, J., Dillon, J., Wong, B., and Willis, B. (2013). ASPIRES: Young people’s science and career aspirations, age 10–14. London: King’s College.

professionals to understand what it is like working in the tech sector. This means that young people's perceptions of the tech sector are primarily based on impressions informed by popular and media discourses.

8. **Findings from our survey with young people indicate that there are considerable differences between boys' and girls' attitudes towards tech.** Our survey findings revealed that boys were much more interested in computing at school than girls and were twice as likely to say that they are interested in working for a tech company.
9. **Findings from our survey with young people indicate that less than a third of boys and girls aspire to work in tech.** The majority (89%) of girls and boys think computing is an important subject, that digital/tech skills are necessary for all jobs (78%), feel comfortable using tech (76%), are interested in tech (84%) but less than a third (30%) said they would be interested in working for a tech company one day.
10. **There is evidence from our survey and interviews findings that young people participating in the study have narrow views of the range of careers which exist in the tech sector.** The young people that took part in our study were aware of different jobs which exist in tech, but these tended to be highly technical jobs which require hard technical skills (such as programming skills).

Recommendations for the tech sector

- 1. Measure socio-economic background and publish what you find, to build a stronger evidence base and to inform practice.** Invite applicants and the workforce to anonymously disclose their socio-economic background (e.g. through equality and diversity monitoring forms), following the best practice guidance in our [toolkit](#) published in partnership with the Social Mobility Commission. Provide the rationale for collecting this data. Staff are more likely to engage with a diversity monitoring exercise if they see it as an integrated part of an organisation's strategy for promoting diversity and inclusion.
- 2. Open up the conversation around socio-economic diversity.** While there is considerable awareness around the lack of gender diversity, few comment on (the lack of) diversity in terms of socio-economic background. In fact, the narrative and debate surrounding diversity and inclusion with respect to socio-economic background is not well established within the tech sector. The sector should encourage dialogue around issues of socio-economic diversity and make socio-economic diversity data (more) visible. Firms, professional bodies and institutes should create forums where employees can, and are encouraged to, discuss matters of inclusion with respect to socio-economic background.
- 3. Articulate a compelling case for socio-economic diversity and inclusion** to inform action. Unite the organisation around a shared vision, and address any misconceptions, by crafting a coherent narrative about why this agenda is important to your organisation, what it will do to advance it, and how success will be measured. Socio-economic diversity should feature clearly in communications relating to diversity and inclusion, including a clear rationale for the organisation's focus on this area. It would be useful to discuss D&I initiatives in terms of the business case argument and go beyond the moral/ethical case for diversity to show how certain behaviours may affect cohesion, motivation and by extension business performance.
- 4. Consider the relationship between different aspects of diversity.** Firms should examine intersections between different strands of diversity, both in terms of how employee data is analysed and also in the design of strategies. People do not experience their diversity characteristics in isolation.

Even if gender is one of the main barriers to entering the tech sector, other factors may come into play, such as socio-economic background, ethnicity, age, disability and sexual orientation, which means that some women face multiple compounding disadvantages. An exclusive focus on improving the representation and progression of women in tech means that additional challenges may be overlooked. Organisations should ensure there is understanding internally about intersectionality in relation to diversity and inclusion, and the importance of socio-economic diversity within this.

5. **Diversity needs to be managed throughout the entire talent pipeline and not just at the recruitment level.** There is currently a widespread belief that diversity matters most at the recruitment level and that it will 'trickle up' an organisation. More efforts are needed to retain talent and support employees throughout their career. The presence of under-represented groups in mid-level/senior leadership positions is not in itself indicative of successful diversity and inclusion policies. Proactive policies on managing diversity should be established across all levels and at all stages. Firms should focus for example on supporting employees who are returning from a career break or parental leave. They should also ensure that they understand employees' needs and career plans. Formal and informal mentoring should be encouraged, at all levels.
6. **Match your commitment to diversity with a focus on inclusion. Diversity is a construct of hiring, progression and retention.** Most organisations are committed and determined to improve diversity. However, the prevailing view is that diversity is primarily a 'pipeline problem'. A pipeline problem is the idea that there are simply not enough female, BAME or working-class candidates in the applicant pool to be diverse. In other words, although firms would like to be more diverse, they cannot because there are no qualified candidates. Our research shows that male-dominated work cultures, a lack of diverse role models and poorly written job descriptions/specifications are just some of the factors which may turn people away from the tech sector and deter them from applying in the first place. Pointing to a 'pipeline problem' can distract from addressing issues that contribute to unequal access by socio-economic background, gender and ethnicity. Firms should focus on creating inclusive working environments, they should promote and celebrate role models from underrepresented groups, and work towards more inclusive recruitment processes (see below).
7. **Create more inclusive recruitment processes.** You may have a statement on your job application template saying you encourage applications from all; yet, not receive high quality applications from 'all'. First

impressions count and taking the time to thoroughly review your recruitment process end to end – from the creation of the job description and candidate specification to how you will conduct the interview and selection process – can have a significant effect upon the candidates you attract. Discuss and review job descriptions/specifications and eligibility criteria to ensure that capable candidates who may have taken alternative routes are not excluded. Job descriptions/specifications should be easily understood by those unfamiliar with the internal working culture of your organisation. Consider the language that you are using and how it may deter more diverse candidates. Advertise jobs in different places and target specific technology communities and groups on platforms such as LinkedIn. Advertise flexible working policies (including parental leave for both men *and* women).

8. **Review the essential requirements of tech roles.** Consider whether technical skills and/or having a technical background are essential or desired. It will be hard to diversify your workforce if having a computer science degree is compulsory. Showcase training opportunities so that candidates who do not meet all the criteria will be more likely to apply. This will help alleviate concerns of under-qualification. Use appropriate selection methods which are relevant for the job (e.g. if the job does not involve solving algorithm questions, do not ask algorithm questions in an interview).
9. **Talk at schools or offer school days in your company.** As mentioned above, our research found a lack of awareness amongst young people around the variety of roles and careers that exist in the tech sector. Outreach initiatives may help increase awareness for young people with limited science/technology capital and help them understand what it is like to work in the tech sector and what skill-sets are needed. Talking to local schools and offering one-day tech career experiences can help deconstruct certain misconceptions/stereotypes and inspire young people to work in tech. Target schools in social mobility 'coldspots'.
10. **Make school, college and higher education students aware of the variety of tech roles that exist in your company.** Young people and students should be made aware of the fact that the tech sector is extremely diverse and that there are numerous roles which require different skill-sets. Our research shows that (young) people tend to think of careers in tech as requiring highly technical skills, which is not always the case. Communication, interpersonal and problem-solving skills are equally important for some roles. It appears that a number of people working in tech in this study have come into the sector by chance or by accident. Some explain that they did not realise that a career in tech was even an option for them. To help increase

awareness of the tech sector and potentially make it more attractive, firms could offer more opportunities such as work experience and insight days.