Executive Summary

- Makers Academy is a private training company offering vocational courses in software development leading to employment with the UK’s top companies (“coding bootcamp” model)
- There is a significant unmet demand for software developers in the UK that is not being addressed by the education system or the apprenticeship scheme, which will likely be exacerbated by Brexit
- Makers Academy has trained nearly 1,000 students from diverse backgrounds who now work at top companies like BBC, FT or the government at an average starting salary of £32,500
- The course costs £8,000 and takes 3 months of full-time, highly intensive training
- Despite impressive employment results, our students can’t go through the apprenticeship scheme or use student loans
- We’re asking the government to recognise coding bootcamps at a national level, update the requirements of the student loan scheme, improve how the apprenticeship scheme works and prepare a range of measures to address diversity issue in the tech industry.

Introduction

1. Makers Academy is a private company providing vocational training and career services to adults willing to switch their careers to become software developers. We’ve been operating since 2013 and have made significant progress addressing the shortage of junior software developers in the UK.

2. We are submitting this evidence to highlight the solution we’re offering to the software development skills shortage in the UK, discuss the results we achieved, and make a few recommendations to help address this problem on a national level.

Problem

3. There’s a widespread consensus that the UK is facing a STEM skills shortage, as evidenced by recent Science and Technology Committee enquiries. There is strong unmet demand for software engineers in the UK. This will only be exacerbated by Brexit if EU citizens won’t be able to freely move to the UK.

4. According to Adzuna, a leading job search engine, there currently are 25,000 open vacancies for software developers. [1] This unfulfilled demand is one of the reasons why the average salary for software developers is £45,553, 38.3% higher than national average advertised salary of £32,939. [2] [1]

5. A particularly pressing issue is the lack of diversity among software developers. The industry is grappling to overthrow the traditional image of a tech organisation, with 61% of UK tech companies made up either entirely or mostly of men. [3]

6. The current education system doesn’t help to solve the problem. Around 85% of people studying for a Computer Science degree are male, presenting an immediate imbalance in the demographic of qualified people. [4]
7. Furthermore, current Computer Science graduates often struggle to find employment, despite significant demand for technical skills. [5] This is a sign of a significant mismatch between the demands of the industry and the skills of Computer Science graduates. Despite explosive growth of the software industry in the last two decades, the number of Computer Science graduates in the UK has dropped considerably since 2002 [4], as students increasingly recognise that universities can’t always prepare them for successful careers.

8. As an indication that degrees cannot be relied upon to screen candidates, EY, the global accounting firm and one of the leading graduate recruiters in the UK, announced that they would no longer consider degrees when assessing potential applicants. [6]

9. The apprenticeship system, designed as a way for young people to kick start their careers, has not become a major source of junior software development talent yet. Many of the created apprenticeships focus on low-skilled jobs, e.g. in cleaning or construction industries. [7] As of today, there are only 229 apprenticeships in England that have “software” in their description, as advertised on the government website. [8]

10. As difficult as the current situation is, it will likely be exacerbated by Brexit, which will put additional strain on current educational systems, prompting businesses to relocate their development teams to Eastern Europe where there’s a better supply of affordable but highly qualified technical talent.

11. To sum it up, despite significant demand for technical skills, there are not nearly enough people ready to fill those jobs. The lack of diversity in the tech industry, combined with inadequate technical training offered by universities and through the apprenticeship programme, makes the problem particularly acute.

Achieved results

12. Since the launch in February 2013, Makers Academy trained over 700 complete beginners with little to no experience in software development, making them job-ready.

13. We helped hundreds of career-changers with no commercial experience in software development to start working as software developers at companies like the Financial Times, BBC, Ministry of Justice, Government Digital Service, Parliamentary Digital Service, British Gas, HSBC, Compare The Market, The Economist, Deloitte Digital, BSkyB, Atos etc.

14. The average starting salary of our developers working as junior software developers is approximately £32,500, with a nearly 100% retention rate. Nearly everyone who is accepted on the course and wants to get a job, finds one shortly after completion.

15. We help complete beginners to start a new career in software development with top technology companies, by taking them through a highly intensive and highly selective 12 week course on our campus in East London.

16. We are taking the diversity problem in the tech sector seriously. We’re proud that on average 35% of our developers are women, with the latest class achieving a majority
51% proportion of female students while keeping the admissions standards the same. We provided around £100,000 of our own funds through Women in Tech scholarships. We also partnered with IBM, Thoughworks and Skimlinks to offer full scholarships for women from underprivileged backgrounds to enter the tech industry. We host Mums in Tech, BlackTechies, Code of Colour, Black Girl Tech, Muslimic Maker events at our campus as another way to support and promote diversity in tech.

17. Our students come from all sorts of backgrounds. We have successfully trained and placed students who worked in low-skill occupations or were unemployed before joining Makers Academy. The overwhelming majority of students had never had any training in Computer Science or related disciplines before joining Makers Academy.

18. One particular example is Simon Legg, a 23-year-old school dropout who was working as a paint salesman in Lewisham. Through the Tech City Fellowship, we sponsored his tuition and he doubled his salary, now working as a junior software engineer at the Financial Times. [2]

19. We are proud that Makers Academy training is listed in software development vacancies alongside Computer Science degree, despite it being significantly shorter and cheaper. We estimate that a Makers Academy student starting work 3 months after graduation will have cumulatively earned £80,000 net over 3 years, taking into account the tuition cost. At the same time, a Computer Science student will have graduated with approximately £40,000 debt after three years of study.

20. To sum it up, we developed a highly efficient course that helps alleviate the demand for software developers in the UK, while addressing the diversity problem in the tech industry. Crucially, we learned how to train complete beginners to the level that makes the UK's top employers to compete for them.

Costs and sources of funding

21. The course that we offer costs £8,000 (£4,000 if taken remotely). Additionally, we charge businesses £5,000 when they ask for our help in matching them to our developers. The clear majority of the students pay using their own means, with the minority borrowing through the Professional Career Development Loan scheme or private education finance providers. Our students do not have access to student loans.

22. The cost of running the course (highly qualified staff with recent and relevant experience in both technology and education, premises, etc) is the biggest barrier preventing more students from benefitting from our services. When we offer full scholarships like Tech City Fellowship [9] or ThoughtWorks [10] scholarship, they are vastly oversubscribed.

23. If we assume that it costs £8,000 (inc VAT) to train a highly employable student at Makers Academy who will get a job at an average of £32,500, they will pay £7,232.8/year in income tax and national insurance contributions, returning the cost of their education in tax and NI alone in just 13 months.
24. If the government allowed Makers Academy students to access student loan system, we estimate that the student loan would be repaid in only 7 years with very few defaults.

Apprenticeship training at Makers Academy

25. We have considered helping businesses work with us through the apprenticeship scheme. However, we found the format of the scheme very restricting.

26. The first challenge is that apprenticeships require adhering to a given qualification. Our business is highly incentivised to make our developers employable since we are paid when they are hired. Therefore, our course format and curriculum are updated on an ongoing basis based on the feedback from employers. This makes it very difficult to commit to a specific programme of training as required by the apprenticeship scheme.

27. The second challenge is that the apprenticeship scheme requires to mix training with on-the-job experience, which reduces the chances of our graduates getting jobs. The employers are interested in hiring software developers who can hit the ground running immediately. We deliver it by running a short, very intensive course that doesn't fit into the apprenticeship scheme.

28. The third challenge is that from employment perspective, it makes sense to deliver as much training as possible at the beginning of the apprenticeship. Our developers meet the government Software Development Apprenticeship Standards [11] after only three months of training. However, as a training provider we would be paid over a long period, taking the risk that the apprentice switches to a more lucrative job and effectively providing credit to the student. This is an unacceptable level of risk for us.

29. These three challenges make it difficult for us to help significantly more students to become software developers through the apprenticeship scheme.

30. At the same time, our hiring partners, large and small, tell us that the current format of apprenticeships doesn't work for software developers. It passes some training responsibilities to employers, which puts pressure on their existing software development teams that are usually under heavy load. They would prefer to outsource training to external providers, like Makers Academy, but we find it difficult to do for the reasons described above.

Recommendations

31. We would like to ask The Committee to consider the following recommendations.

32. Recognise the importance of highly intensive software development courses (often referred to as “coding bootcamps”) at the national level, following the example of the White House [12]. In March 2015 Barack Obama announced TechHire initiative, a new campaign to expand local tech sectors, by acknowledging the role coding bootcamps play in training the workforce and pledging $100M in grants to students nationwide. [13]
33. Change the student loan system to enable coding bootcamp students to access it. The current accreditation requirements of the student loan system favour educational institutions focused on awarding degrees rather than those helping their students become highly employable.

34. Update the apprenticeship system to enable employers to spend their apprenticeship levy on short training courses that don't mix training and employment, and that are judged on their employment statistics rather than adherence to a specific qualification.

35. Prepare a range of measures to address diversity issue in the tech industry, e.g. by publicly acknowledging the issue on a national level on a regular basis or offering targeted training or funding schemes that explicitly favour minorities who could join the tech industry.

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Bibliography


Written evidence submitted by Makers Academy (GAP0061)


