

ROBOT REVOLUTION

The impact of artificial intelligence on
entrepreneurs and job prospects



A research report prepared by



Foreword

These are turbulent times for young people entering the world of work.

Economic and social turmoil is reshaping industries and markets beyond all recognition. Technology trends are dominating the business agenda, with big data and cybersecurity now board-level concerns. The rise of online shopping has seen established high street retail chains collapse, whilst ambitious start-ups have grown rapidly and asserted market dominance in a matter of years.

New working models like the sharing economy and crowdfunding are opening up fresh opportunities for entrepreneurs, whilst simultaneously raising serious questions around regulations and employment rights. At the same time, the social media revolution has helped make big brands more accountable to the public.

Yet beneath this wave of constant change, deep divisions still remain. Individuals without critical workplace soft skills - which can't be taught by employers in a crash course and which are a key leveller - are continually at a disadvantage. This was reflected in a recent report from social mobility tsar Alan Milburn in which he revealed 51% of 18 to 24-year-olds thought where people ended up was determined by their background and who their parents were¹.

Worse still, the report found that half of young people think the situation is getting worse, with only 30% of 18 to 24-year-olds believing it is becoming easier to move up in British society. Despite record investment in education, young people are still lacking critical skills like communication and confidence, and this often prevents them from reaching their full potential.

With Brexit on the horizon and the rise of Artificial Intelligence (AI) and automation threatening jobs, we must face up to these challenges with practical steps and solutions instead of soundbites.

In the hyper connected global economy, the truth is that academia alone is not sufficient to prepare students for a future world of work. The rise of robots in the workplace will introduce increased pressure on young people to develop the soft skills needed in order to stand out.

This report has been commissioned to examine the impact AI will have on the next generation of entrepreneurs and to offer recommendations for ensuring a smooth transition to this completely new world of work.

Michael Mercieca, Chief Executive

¹ Social Mobility Commission, The social mobility barometer, 15 June 2017 <https://www.gov.uk/government/publications/social-mobility-barometer-poll>

View from Young Enterprise award sponsors

“Throughout his years of building the Disney company, Walt Disney continued to innovate by combining new technology with exceptional storytelling to deliver great and enduring entertainment experiences. Walt always said: “If you can dream it, you can do it!”

At Disney we believe it is our dedication to innovation that sparks the creativity within our business. Creativity will always require the human touch that, in combination with state-of-the-art technology, can deliver new, unexpected experiences. This is why we believe that robotics and creativity are not mutually exclusive – we are constantly exploring robotics and AI for example to help our storytellers make our Theme Parks an increasingly immersive experience for our guests.

We are pleased to support the Young Enterprise Creativity Award – dedicated to those young people who ‘dream it ... and will do it!’”

Jeff Archambault, Corporate Citizenship, The Walt Disney Company EMEA

“The landscape in which young people work today is constantly evolving with technology at the forefront of that change as traditional roles become increasingly automated. It makes the investment in young people all the more important so they can develop their skills to meet the new work environment and ensure they leave education with hands-on experience, strong communication and people skills which are increasingly needed in the workplace today.”

Sumanth Rao, Director International Finance, Delta Air Lines

Methodology and background

The Young Enterprise Insights Panel is made up of 200 finalists from the Young Enterprise flagship 'Company Programme' from all regions of the UK, shortlisted from 20,000 entrants. Finalists were polled online in June 2017.

Young Enterprise's 'Company Programme' regional finalists have been crowned the best student company from their area after setting up and running a company over an academic year. They have made all the decisions about their business, from deciding the company name and product, to creating a business plan, managing their finances and selling their products.

The panel was established to give the next generation of entrepreneurs a voice, enabling them to communicate their ambitions, concerns and recommendations to businesses and government.

As the leading enterprise and financial education charity in the UK, Young Enterprise focuses on ensuring young people have the knowledge, confidence and skills necessary to secure employment – and understand how to budget and save once in employment. Since its foundation in 1962, one million young people have participated in Young Enterprise's flagship 'Company Programme', kindly supported by HSBC.

The rise of the robot

Of all the technology trends reshaping the world of work, the rise of automation and AI is the most prominent. Recent research from PwC revealed that approximately 30% of UK jobs are susceptible to automation from robotics and AI by the early 2030s². The report found that the likelihood of automation is highest in sectors such as transport, manufacturing, and wholesale and retail, and lower in education, health and social work.

A separate report from the Reform think tank suggested that the public sector could lose around 250,000 jobs in admin functions by replacing human beings with robots³.

So what do young people think about the rise of AI and do they feel it will help or hinder their ability to enter the world of work?

Competing with robots

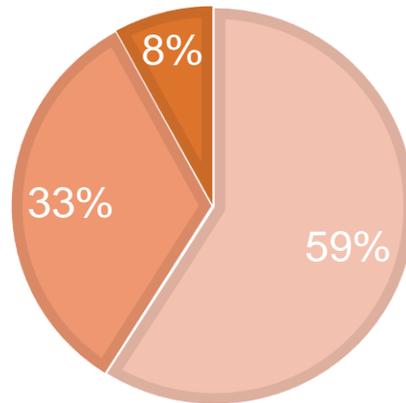
When asked if robots were likely to make it harder or easier to get a job, or if there would be no noticeable change, 59% of respondents said that they thought it would be harder to get a job that a robot could also do, as young people would still be lacking basic work skills such as teamwork and problem solving to enable them to stand out as better suited for the role than a robot. 33% said that they thought the rise of robot workers would encourage students leaving education to get more ready for work, ensuring that they left school with more relevant workplace skills. Only 8% said they anticipated there being no change.

² PwC report into automation, March 2017 http://pwc.blogs.com/press_room/2017/03/up-to-30-of-existing-uk-jobs-could-be-impacted-by-automation-by-early-2030s-but-this-should-be-offse.html

³ Reform think tank report into robots February 2017 <https://www.theguardian.com/technology/2017/feb/06/robots-could-replace-250000-uk-public-sector-workers>

People think that in the future robots will be able to learn and do more of the jobs that humans do today. Today many young people leave school or college without work skills and find it difficult to get a job. What do you think will happen if robots do more jobs?

- 59% Harder to get a job
- 33% Encourage students to get ready for work
- 8% No Change



These findings indicate that young people feel they lack basic workplace skills and that in this scenario, it would become harder to secure employment. Soft skills such as communication, teamwork, problem-solving, creativity and resilience are all vital in the highly competitive world of work, particularly when competing in the workforce with robots.

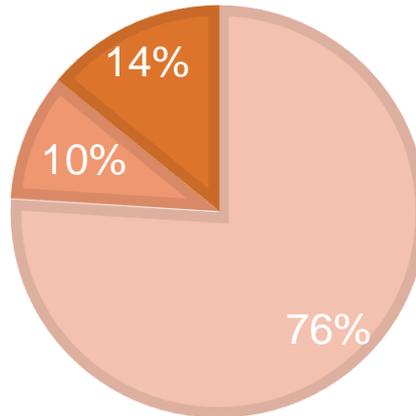
This again raises concerns around the lack of practical workplace skills being taught in schools and colleges, and strongly indicates the need for more focused teaching around preparing young people for the world of work.

Impact on the job market

Our research also revealed concerns around the impact that the rise of the robot worker would have on the number of jobs available.

What will the rise of artificial intelligence and workplace robots mean for job opportunities?

■ 76% There will be fewer jobs ■ 10% There will be more jobs ■ 14% No change

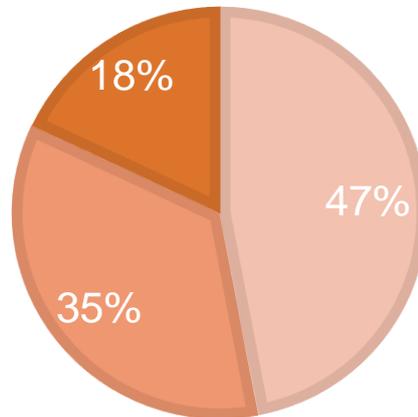


The vast majority of students, 76%, told us they believed there were likely to be fewer jobs available due to the rise of robots in the workplace. Only 10% felt that this trend would lead to more jobs, and 14% said they anticipated there being no noticeable change.

When asked about feelings towards robots playing a larger role in the workforce, young people expressed serious reservations about this trend.

How do you feel about a future in which robots or machines occupy a large percentage of the workforce?

■ 47% Concerned ■ 35% Neutral ■ 18% Comfortable



Nearly half, 47%, said they were concerned at this prospect. 35% said they were neutral, and only 18% felt comfortable. Again, this data points to a culture clash between new ways of working and current expectations of young people.

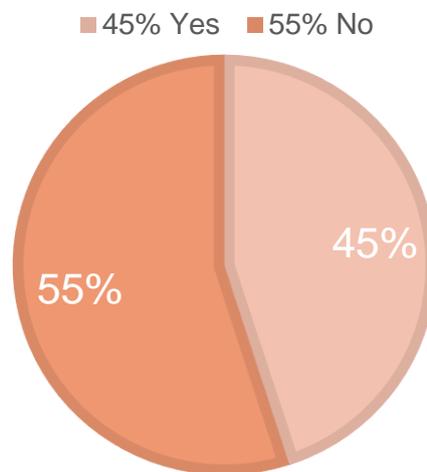
In terms of preparing young people for the robot revolution, we asked our panel if they would prefer more or less work experience. 69% said they wanted more work experience whilst at school and college, 5% wanted less and 28% wanted the current levels to remain the same.

Additionally, we asked our panel how many work experience placements they would prefer to have. The most popular answer was 3-4 placements, favoured by 56% of respondents.

Working for a robot

We also investigated attitudes to having a robot as a boss. We asked our panel if they would accept a job working for/reporting to a robot. 45% said yes whereas 55% said no, demonstrating a stark divide of opinion.

Would you accept a job where you are reporting to/working for a robot?



It's clear that the rise of the robot worker has the potential to cause serious employment problems for those who are not properly equipped with the basic workplace skills needed by employers. It's therefore vital that our education system focuses on improving the soft skills of pupils and on preparing them for an evolving workplace where competition from and management by AI is to be expected.

Recent research from Oxford and Yale University⁴ has suggested that AI will master human skills much quicker than originally anticipated. Their analysis suggests that machines are predicted to be better than us at translating languages by 2024, writing high-school essays by 2026, driving a truck by 2027, working in retail by 2031, writing a bestselling book by 2049 and surgery by 2053.

⁴ Oxford and Yale report into AI, May 2017 <http://www.newsweek.com/artificial-intelligence-will-take-our-jobs-2060-618259>

Conclusions and recommendations

There is every indication that the rise of the robot worker in the work environment will make it harder for young people to secure employment in an already highly competitive market, and worse, the majority of young people are concerned about this fact. Many view AI with suspicion - despite being early adapters of household tech advances, social media and app driven consumerism - and are concerned about its predicted larger role in the workforce.

To overcome these challenges, we believe that it's time for schools and colleges to recognise AI and automation as critical trends which will fundamentally change the world of work, and therefore the way in which they prepare young people for the job market and their future career. We recommend schools and colleges:

- **Increase training for pupils in soft and digital skills** – Increased use of AI looks set to transform many traditional jobs beyond all recognition. To adapt quickly to changing job functions and disruptive new ways of working young people must receive training in both digital and soft skills (such as resilience).
- **Increase employer engagement in schools** – Good exam results will not be enough to secure a stable, well paid job, particularly with automation expected to reduce the number of entry-level admin jobs available in the market. Students need to engage with employers to ensure they have a fully rounded CV and workplace skills. Research has found students who undertake at least three school-mediated employer engagements are 85% less likely be NEET⁵.
- **Instil a culture of entrepreneurship and confidence in schools** – Let's stop focussing all efforts on academia alone and recognise that future entrepreneurs need inspiration from interactive programmes, real business ambassadors and training. Entrepreneurial spirit is infectious, it drives up confidence and encourages young people to start their own businesses.

⁵ Education and Employers, Contemporary transitions: Young Britons reflect on life after secondary school and college, 30 January 2017 <http://www.educationandemployers.org/research/contemporary-transitions-young-britons-reflect-on-life-after-secondary-school-and-college/>

About Young Enterprise

- Young Enterprise is the UK's leading enterprise and financial education charity that empowers young people to harness their personal and business skills
- Every year we work directly with over 250,000 young people, and train 3,200 teachers in both enterprise and financial education, with the help of more than 7,000 volunteers and 3,500 businesses
- We believe that the potential of the UK's young people is unlimited, and an academic education on its own is not enough. Our mission is to empower young people to discover, develop and celebrate their skills and potential
- Through our hands-on employability and financial education programmes and resources and teacher training, we want to eradicate youth unemployment, help young people realise their potential beyond education and empower a generation to learn, to work and to live
- Founded in 1962, we are part of global network JA-YE operating in 120 countries

For more information please contact Young Enterprise on 020 7330 9483 or email james.atkinson@y-e.org.uk