

# Key Learnings from VocTech Market Activity

Quarterly Report, April – June 2023

**Somi Ajibola**  
Analyst, Tyton Partners

**Nick Kind**  
Managing Director, Tyton Partners

A Tyton Partners report commissioned by Ufi Ventures



Ufi Ventures and Tyton Partners are collaborating on an ongoing exploration of the opportunities for investors in the Future of Workforce Development. We are working together to both refine Ufi Ventures' focus over time and to catalyse the broader field of Vocational Technology (VocTech) investing across the UK, drawing lessons and insights from continental Europe and North America.

In this report, Ufi Ventures and Tyton Partners offer their quarterly review of select current market developments and dynamics in a challenging and contradictory time. For more information about the methodology we use in compiling this briefing, please refer to our annual report, [The Jobs Frontier 2023](#).

This briefing is not exhaustive, but covers key developments and issues over the last quarter that we feel are of particular interest to those operating and investing in vocational technology and the future of work in the UK and Europe more generally. It moves from the general to the specific, starting with the broad context and labour market developments, before covering interventions and investments of particular relevance.



# Executive summary

The macroeconomic uncertainty continues. High inflation persists despite easing across Europe and the US. Economic growth has stagnated and, in Germany, regressed.

While organisations have continued to let workers go to protect financial stability, skilled labour shortages persist in IT, cybersecurity, healthcare, education and various sectors in Europe and the US. VocTech companies, notably OpenClassrooms, have had to make job cuts. Organisations and state governments have been pushed to implement upskilling initiatives, find new talent pools, and embrace new ways of finding talent.

Though there has been wage growth, it has not kept up with the rising cost of living, and employees continue to seek better wages, benefits and working conditions. Industrial action and unrest continued across Europe and the US. Although negotiations between governments and unions were successful in some instances, workers have continued to protest for better pay and benefits from employers.

Generative AI has continued its rapid advancement, continuing to disrupt the workplace and the education system – and inspire plenty of predictions. The ramifications are already starting to be felt amongst Future of Work companies and investors: Chegg's share price halved after its CEO acknowledged the threat from ChatGPT, and a series of new initiatives deploying LLM technologies in education have already surfaced. Debate has been rampant about the potential benefits and threats AI could pose to jobs. Issues of privacy, bias, and misinformation have pushed calls for the need for regulation.

Venture Capital investments into EdTech and VocTech slowed significantly during the quarter as investors move cautiously amid an economic climate of higher interest rates, reduced demand, and slow economic growth. The sizes of rounds and valuations have reduced compared to the pandemic boom. There has been a flurry of internal rounds carried out at the same valuation as previous rounds. However, established players raised new funds focused on investing into education and workforce startups, and there were still notable deals.

## Framing Questions

- Q. What reskilling and upskilling initiatives can help adults acquire skills to keep up with the pace of technological advancement in AI?
- Q. What kind of artificial intelligence regulation can promote ethical use of AI without restraining AI innovation?
- Q. When, where and how will education-focused LLM applications prove their efficacy?

# Part I: Context

## Macroeconomic context

Headline Inflation			
Region	Q1 2023	Q2 2023	Source
United States	5%	4%	<a href="#">Bureau of Labour Statistics</a>
United Kingdom	8.9%	7.9%	<a href="#">Office for National Statistics</a>
Eurozone	8.5%	5.5%	<a href="#">Eurostat</a>
Germany	7.8%	6.3%	<a href="#">Eurostat</a>
France	6.7%	5.3%	<a href="#">Eurostat</a>
Spain	3.1%	1.9%	<a href="#">Eurostat</a>

In the UK, the cost of living continues to rise despite falling inflation. [Data from the British Retail Consortium](#) shows that shop price inflation rose from 8.8% in April to 9% in May. Similarly, in the Eurozone, core inflation which excludes food and energy prices, rose from 5.3% in May to 5.4% in June according to analysis from Eurostat. As a result, central banks have continued their efforts to combat high inflation:

- The Bank of England's latest raise in June took interest rates to 5%.
- The European Central Bank [raised interest rates to 3.5% in June](#) with apparent intentions to continue to raise rates in July.
- In the US, the Federal Reserve left interest rates unchanged in June at 5% - 5.25%, though the bank indicated plans for further rate increases before the end of the year as core inflation rose by 0.4% in April and May [according to data from the US Bureau of Labour Statistics](#).

GDP / Economic Growth			
Region	Q4 2022	Q1 2023	Source
United States	2.9%	2%	<a href="#">Bureau of Economic Analysis</a>
United Kingdom	0.1%	0.1%	<a href="#">Office of National Statistics</a>
Eurozone	-0.1%	-0.1%	<a href="#">Eurostat</a>
Germany	-0.5%	-0.3%	<a href="#">Eurostat</a>
France	0%	0.2%	<a href="#">Eurostat</a>
Spain	0.5%	0.6%	<a href="#">Eurostat</a>

In the UK, GDP growth stayed flat as consumption from households remained unchanged compared to the previous quarter.

In the Eurozone, the fall in GDP was largely due to stagnated growth in the Eurozone's largest economy, Germany, which experienced a 0.3% [contraction in GDP for the first quarter of 2023](#) due to reduced household consumption, slow manufacturing output, and high inflation.



Economic growth was sluggish in the US despite [growing by 2% in the first quarter of 2023](#), due to a slowdown in private inventory investment and non-residential fixed investment. However, there was an increase in consumer spending and an increase in the value of exports, [according to analysis from the Bureau of Economic Analysis](#). As we discuss below, all of these macro-economic factors are starting significantly to affect the investment landscape.

## Labour market conditions

These are undoubtedly tough, as the unemployment, unfilled vacancies, and NEET figures demonstrate:

Unemployment rate			
Region	Q4 2022	Q1 2023	Source
United States	3.5%	3.7%	<a href="#">Bureau of Labour Statistics</a>
United Kingdom	3.7%	3.8%	<a href="#">Office for National Statistics</a>
Eurozone	6.7%	6.6%	<a href="#">Eurostat</a>
Germany	3.1%	2.9%	<a href="#">Eurostat</a>
France	7.2%	7.0%	<a href="#">Eurostat</a>
Spain	12.9%	12.8%	<a href="#">Eurostat</a>

Total number of vacancies			
Region	Q4 2022	Q1 2023	Source
United States	10,817,000	10,094,000	<a href="#">OECD</a>
United Kingdom	1,130,000	1,051,000	Office for National Statistics
Germany	1,968,516	1,747,412	<a href="#">OECD</a>
France	n/a	n/a	Similar stats are unavailable
Spain	140,517	145,138	<a href="#">OECD</a>

Number of Youth out of Employment and Education (15- 24yr olds)			
Region	Q4 2022	Q1 2023	Source
United States	n/a	n/a	Similar stats are unavailable
United Kingdom	788,000	770,000	<a href="#">Office for National Statistics</a>
Eurozone	3,453,000	3,374,000	<a href="#">Eurostat</a>
Germany	556,000	591,000	<a href="#">Eurostat</a>
France	833,000	834,000	<a href="#">Eurostat</a>
Spain	994,000	932,000	<a href="#">Eurostat</a>

Due to reduced consumer spending, higher inflation, and an unpredictable macroeconomic environment, organisations across the globe in various sectors continued to shed staff. Examples include:

- BT announced plans to let go almost [42% of its workforce \(95,000 jobs\) by the end of 2030](#) due to the emergence of AI and advanced digital technology.
- Vodafone [announced intentions to cut one tenth of its global workforce](#) (11,000 jobs) in the next three years due to higher energy costs and falling demand in Germany, Italy, and Spain.
- Walmart announced that about [2,300 workers at fulfilment centres across the US](#) were set to lose their jobs.
- Gap Inc. announced plans to [lay off 500 staff from its corporate offices](#) in cost-cutting efforts.
- Meta implemented a round of [layoffs in April and May that affected 10,000 jobs](#).
- Goldman Sachs [announced plans to lay off some employees in efforts to meet its savings target](#). The company president John Waldron cited rising interest rates and dampened appetite for merger and acquisition activity as reasons for the cuts .
- Citigroup similarly cited a prolonged reduction in dealmaking as its reasons for [5,000 job cuts mostly in investment banking and trading](#) roles.
- EY announced plans to [lay off 3,000 jobs from the US consulting side of the firm](#).

## Continuing skills shortages combined with worker unrest in essential sectors

Despite these widespread layoffs, organisations are facing skill and labour shortages. Yet, for individuals, high inflation and rising interest rates have increased the cost of living. Protests and negotiations for better pay and benefits continue. Key developments in significant sectors are detailed below.

### Education

In the UK, staff shortages in education and healthcare are worse than any other sector, likely due to relatively low wages. A report by the CIPD found that [6 in 10 education employers were struggling with hard-to-fill vacancies](#). Despite efforts by the government to negotiate, [the National Education Union rejected a pay offer](#) of a 4.5% pay rise and £1,000 one-off payment: it is continuing with planned strikes and has indicated plans to do so until Christmas.

Germany is also facing similar shortages. There [are on average 1.6 vacancies in each school according to a national teachers' union, Verband Bildung und Erziehung](#). This equates to approximately 51,000 teacher vacancies across the country.

The US remains severely challenged. For example, at the start of the 2022-2023 academic year, North Carolina reported that there [were 5,540 teacher vacancies in the state](#), a rise of 45% from the previous year. Many of these shortages are in elementary math and reading teaching positions. In Colorado, the nonprofit Early Childhood Services Corps is [mitigating these teacher shortages by hiring adults over 50](#) and retirees to help fill vacancies.



## Healthcare

As mentioned above, this sector is negatively affected by shortages, exacerbated by an ageing workforce and union activity. The same CIPD research quoted above found that 55% of UK healthcare employers had hard-to-fill vacancies between March and April. [The government has responded with a £2.4bn](#) long-term programme for additional training places for healthcare professionals over 5 years which could increase the NHS workforce by 60,000 doctors and 170,000 more nurses by 2036-2037. However, many commentators noted that the announcements of this major initiative were silent on short-term pay.

There are consequences. Individuals on waiting lists anticipating treatment reached a record high of 7.3m patients [according to NHS published data](#). About 330,000 scheduled procedures were cancelled due to health worker union industrial action. After [walking out for 4 days in April](#), junior doctors announced plans to walk out for 5 days beginning July 5, protesting for a significant pay rise. Senior doctors have followed suit through the British Medical Association [voting to walk out](#) over demands for higher pay.

In Europe, healthcare providers are also struggling to cope with the demand for care as they have not been able to replace the many healthcare workers who left the sector. According to the president of the European Society of Intensive Care Medicine, [between 15-25% of hospital beds in the EU were out of commission](#) due to lack of personnel. Another major issue facing European healthcare providers is an ageing workforce, many of whom will soon retire. Germany, Spain, France, and Italy respectively have 26%, 32%, 43%, and 56% of their doctors aged over 50 [according to data from the World Health Organisation and analysis from the Financial Times](#).

In the US, healthcare organisations are grappling with high turnover rates for their nurses. [A survey from the National Council of State Boards of Nursing](#) found that approximately 100,000 registered nurses left the US nursing workforce over the past two years citing stress, burnout, and retirement. This is pushing large hospitals in the US to [look towards gig workers](#) and gig-worker-enablement platforms to help manage and fill shifts. [A survey conducted in September 2022 by McKinsey](#) of 368



frontline nurses indicated that 31% of nurses surveyed were looking to leave their roles within the year. The main factors for these decisions were feelings of not being valued, unmanageable workloads and inadequate compensation. The report gives the following recommendations to healthcare organisations looking to tackle this crisis:

- Making employees feel appreciated by recognising them for their contributions.
- Initiating flexibility into their work schedules.
- Investing in building a pipeline of talent (e.g., partnering with educational institutions/ universities to develop new graduates).
- Investing in an onboarding process for new hires.

### Information and Communication Technology (ICT)

Despite a wave of layoffs across the technology sector, many organisations are grappling with a lack of IT skilled labour. Start-ups have recently struggled to hire talent with coding, software engineering, and machine learning skills, [according to a poll of small businesses in the UK](#). 46% of the businesses ranked lack of staff with the right skills, and difficulties hiring, as their top two concerns for the year. Despite widespread layoffs at tech companies in the US, demand for tech talent is still high. 79% of tech workers who lost their jobs found a new one within three months [according to results from a ZipRecruiter survey](#) in October 2022. In addition, the tech unemployment rate is 2.2% below the national average of 3.5% with 316,000 unfilled tech jobs across the US in March according to U.S. Bureau of Labor statistics.





A combination of global geo-political tensions, technological advancement, and rapid digital adoption has seen demand for cybersecurity professionals increase as organisations, institutions, and schools face frequent cyber breaches and attacks. In the US, there are about 770,000 unfilled cybersecurity positions. This shortage of cybersecurity skilled professionals is not limited to the US – [according to Hays' Global Cyber Security 2023 report](#) which consulted 1,000 cyber security leaders in 27 countries, 66% of these leaders are not confident about attracting skilled workers to their organisation.

The US semiconductor industry, which has received a substantial amount of committed funds from the CHIPS Act, would [need about 236,000 new semiconductor workers](#) (computer hardware engineers, industrial engineering technologists, and production workers) for the industry to grow significantly according to estimations from Lightcast.

### Green transition / Construction

Efforts towards a more climate-friendly economy continue as investors and governments allocate funding to the transition to greener sources of energy, for both environmental and national security reasons. According to the International Energy Agency, [spending on clean technologies this year is forecast to reach \\$1.7tn](#) compared with \$1tn on fossil fuels. However, bottlenecks in the form of skilled talent continue to exist and negatively to impact clean technology projects.

In Italy, [a shortage of skilled workers in construction and engineering](#) is causing delays to the implementation of projects under the EU's post pandemic recovery programme. This situation could worsen over the next three years as 630,000 workers will hit the retirement age according to Eurostat estimates.



## Public Sector

The public sector across the world saw waves of union activity as workers demanded better pay, flexibility, and benefits. In Canada, members of the Public Service Alliance Canada union (working at border crossings, passport, and income tax services) went on strike over wages and remote work policies, disrupting and causing delays to services in Canada. In the UK, hundreds of thousands of civil servants have engaged in walkouts over better pay, pushing the UK government to offer a £1,500 one-off payment to junior and mid ranking civil servants. The British military is reportedly struggling to recruit talent with the right cyber security and tech skills which could undermine the UK's ability to fight on modern battlegrounds according to a government-commissioned report.

## Hospitality

Many hospitality organisations remain unable to fill jobs in the long wake of the pandemic. A survey of 200 hotels conducted by the American Hotel & Lodging Association found that 87% of hotels in the US do not have enough staff. Similarly, in France, there have been calls for innovative efforts to recruit hospitality staff to meet summer demand as there are approximately 200,000 unfilled roles in the hotel and restaurant sector.

## Trends, forecasts and debates

The World Economic Forum published its latest Future of Jobs Report. Amongst the key headlines in its 296 pages was the striking prediction:

*"The impact of most technologies on jobs is expected to be **a net positive** over the next five years [...] All but two technologies are expected to be net job creators in the next five years: humanoid robots and non-humanoid robots."*

(Our emboldened, underlined emphasis).

However, it also cautioned:

*"Employers anticipate a structural labour market churn of 23% of jobs in the next five years. This can be interpreted as an aggregate measure of disruption, constituting a mixture of emerging jobs added and declining jobs eliminated."*

Hardly unexpectedly, Artificial Intelligence (AI) remains a key focal point of discussions, notably generative and Large Language Model (LLM) technologies. Debates over the potential impacts on human capital and changes to how we learn, teach, work, and play have continued during the quarter.

According to research by Goldman Sachs, generative artificial intelligence could increase productivity by 1.5 percentage points over a 10-year period. This could explain why workplace AI is already being used by a substantial number of employees for their daily tasks. **in March** found that about 46% of the surveyed workers use ChatGPT

as part of their daily work, while 83% plan to do so in the future – particularly as the technology can help speed up tasks that would take humans longer to complete. This claim is backed by [results from a survey by the Society for Human Resource Management](#) which show that 35% of US workers believe their jobs will become more reliant on automation and artificial intelligence.

Organisations are beginning to embrace these technologies and incorporate them into their processes. KPMG, the hedge fund Coatue, and the VC firm Headline are all reportedly [using AI tools to identify targets for their dealmaking](#). [Analysis from the FT on the impact of AI](#) on the professional services, filmmaking, and coding sectors supports claims of the technologies' potential to increase productivity through writing drafts, producing digital doubles, and suggesting/analysing code for programmers. Forbes offers [this review of generative AI in gaming](#), reflecting on the power of the technology but questioning some aspects of how much human authenticity it can bring to the experience.

Despite the potential benefits of AI at work, its potential to replace jobs through automation is a challenge that could further increase inequality and access to opportunity. Gita Gopinath, deputy managing director at the IMF, made warnings about the [potential for artificial intelligence to cause disruptions to the labour market](#) if workers lose jobs en masse. For instance, if investment organisations increase the use of AI to pick deals or suggest code, the need for analysts or junior programmers who typically do those tasks would lessen. [According to Goldman Sachs economists](#), AI could expose 300m full time jobs to automation. This had led to calls for regulation on the use and implementation of AI at work. The New York City Department of Consumer and Worker Protection (DCWP) implemented a city law to [regulate the use of automated employment decision tools in hiring](#): the use of AI to make hiring decisions must go through bias audits. The Trade Union Congress in the UK has [called on the UK government to implement AI regulation](#) as employers are increasingly using AI technology to make hiring, firing, pay, and promotion decisions. The US federal government announced [plans to invest \\$500m at over 25 AI institutes](#) to fund AI research and responsible innovation in AI with the goals of protecting individual rights and safety, as about 23% of the US workers in the Korn Ferry survey cited above believe their jobs could be replaced by automation in the next 5 years. It remains to be seen how far their





fears will be realised, as there is currently little evidence of this happening.

Investment matched the hype. AI start-up [Anthropic](#), which looks to rival Chat-GPT's generative AI product, [raised \\$450m in a round](#) led by Spark Capital with participation from Google, Salesforce, and Zoom. [Inflection AI](#), another artificial intelligence startup, [raised a \\$1.3bn round](#) led by Microsoft, Nvidia, and Reid Hoffman.

### AI in education and learning

In education, the debate continues about the pros and cons of AI, with thoughtful work from [UNESCO](#), the [World Economic Forum](#) and the announcement of the thought-leadership group, [TeachAI](#). JFF announced its [Center for Artificial Intelligence & the Future of Work](#). Moving beyond worries about computers being able easily to pass high-stakes tests, there is more acknowledgement of the potential for AI to transform education systems both to make learning more equitable and by changing the focus to developing skills that are less likely to be replaced by technology. These technologies can also help teachers enhance teaching, reduce time spent on administrative tasks so teachers can dedicate more time to students, and improve teachers' professional development experiences.

Generative AI platforms geared specifically for educational purposes are already starting to emerge (and we anticipate a flood). One early innovation of interest is [Merlyn Mind's GenAI platform](#), which can be pointed at a specific body of educational content and is designed to be defensive around hallucinations and safety. Much of the code is open-source. Also of note are Chegg's [Cheggmate](#) (see also below) and [Maximal Learning](#). (Disclosure: Ufl has provided a grant to UK player [Teachermatic](#)).

In the US, [public schools in Newark have begun to test out automated teaching aids developed by Khan Academy](#) with the aim of understanding the pros and cons of using AI technology in classrooms. The reviews have been mixed; on one hand, the tool can be a helpful co-teacher by enabling teachers to focus on students that need more attention while self-driven students continue to learn with the technology. On the other hand, AI



bots have completely solved problems for students rather than taking them through each step to improve their critical thinking skills.

The extraordinarily rapid emergence of ChatGPT also caused turbulence amongst education companies as investors and markets acknowledge the disruptive potential of LLM technologies. Chegg's share price [halved in a day](#) due to concerns on how ChatGPT was affecting its earnings, with others such as Pearson, Udemy, and DuoLingo also affected (albeit, less dramatically). At the time of writing, Chegg's stock remains around 50% down on April prices, and they have announced [cuts of 4% in their workforce](#).

## Responses and interventions

The combination of a difficult macro-economic climate, skills shortages, and rapid technological advancement has pushed organisations and governments to rethink their approach to human capital. We continue to monitor where key interventions are taking place, with a particular focus on how the less privileged in society will be given opportunities to upskill and reskill in a such a rapidly changing ecosystem. In June, Ufi VocTech Trust and Learning and Work Institute announced [a £3m program of work and funding](#) to accelerate the adoption and deployment of technology to broaden access to the skills adults need to participate in our transitioning economy.

### Policy, regulation and infrastructure

The UK government's plan to introduce new T-level qualifications for construction, health, science, and business courses, with tougher entry requirements than legacy BTECs, [has been called into question by heads of more than one hundred colleges](#) because of its potential to limit access to education for school leavers.

[The Carnegie Foundation for the Advancement of Teaching](#) and [ETS](#), an educational testing and measurement organisation, [announced a new partnership aimed at transforming education assessment in the United States](#) by creating a suite of assessment and analytic tools to adequately prepare students in the US for educational and career success. Crucially, this is a move away from the long-sacred "Carnegie Unit", which links attainment to time on task, not mastery.

The UK Culture Secretary of State for Culture, Media and Sport, Lucy Frazer, announced the [UK government's intention to grow the creative industries by £50bn in value by 2030](#). These efforts will include support for skills in music, extracurricular activities for students, and bootcamps/apprenticeships for those seeking jobs or returning to the workforce.

In January, the EU adopted the Corporate Sustainability Reporting Directive which requires companies in the EU to disclose their ESG activities. However, in the US, ESG investing is [facing pushback from politicians and lawmakers](#) who argue that applying ESG polices puts constraints on corporations and undermines financial returns. As a

result, there have been at least 49 anti-ESG bills introduced in the US this year compared to 22 in 2022 according to Ropes & Gray, a US-based law firm. This has also resulted in the withdrawal of billions of dollars from BlackRock, the enormous and influential asset manager and backer of ESG investing.

[GitLab Foundation](#) announced its first [grant of \\$2.9m to Jobs for the Future in collaboration with the Burning Glass Institute](#) to expand the Educational Quality Outcomes Standards framework to measure education and training programs based on employment and earning outcomes. The aim is to increase transparency across credential programs in the US to help learners make informed decisions. This is a good example of US foundations and non-profits stepping in to provide a quasi-regulatory quality assurance framework – in this case, the current provision by states and the federal government offers patchy, heterogeneous coverage of upskilling providers.

The Foundation for Education Development (FED) [published its National Education Consultation Report 2023](#), highlighting the need for a new approach to long-term education planning in the UK. The report recommends the following approaches for the UK to deliver a long-term education plan that will help learners and individuals cope with emerging challenges and help the UK thrive as a whole:

- Creating a clearly defined guiding mission for education such that all learners are properly equipped with the skills, knowledge, attitudes, and character needed to thrive in the future.
- The mission should guide the long-term plan for education in England and reduce the disruption that constant political change causes in UK education.
- The plan should be evidenced based and evolve to meet changing needs of learners.
- An independent governing body to oversee the development and implementation of the long-term plan/strategy for education.
- A Chief Education Officer whose role would be to advice political leaders with evidence and insights from the UK on the delivery of the long-term plan.

### Skills-based hiring

One of the ways these organisations are combating shortages is by moving to skills-based hiring policies. These focus on the skills an individual has attained through jobs and training, as well as often removing four-year degree requirements from jobs, and aim to increase access to a broader range of talent. According to an analysis of the US economy from LinkedIn, [skills-based hiring could widen the US candidate pool by 19x](#).

In New Jersey, [Governor Phil Murphy signed an executive order](#) to prioritise skills and work experience over college degree requirements for certain employment opportunities with salaries that could reach \$120,000 a year, to increase access to good paying jobs to individuals without college degrees. The Governor of Virginia, Glenn Youngkin, also announced that [Virginia state agencies will change hiring practices by removing degree requirements](#) from 90% of state classified positions. American Student Assistance, a non-profit that helps students make informed decisions about education and career goals, [announced \\$10.1m in grants to 10 organisations](#) focused on increasing access to post-high school career pathways and work-based learning for young adults from underserved communities. The shortage of cybersecurity workers has led to big competition for capable professionals who are demanding high salaries: as a result, [organisations such as McDonald's Corp removed cyber certifications and degree requirements](#) from many of their job listings to diversify their pool of candidates. The



Society for Human Resource Management Foundation, in partnership with the Charles Koch Foundation, announced the launch of a toolkit aimed at promoting skills-based hiring and increasing access to diverse pools of talent. [Coursera announced a skills-based recruitment service](#) that will look to match talent with entry-level jobs based on their skills (an interesting move into “hire, train, deploy” models for the US player).

### Global recruitment and immigration reform to attract talent

Local labour shortages and the possibilities of remote work have led organisations to look outside their traditional pools of labour for talent, including beyond national borders. Governments are also introducing new immigration rules to attract foreign workers to fill job vacancies.

- Denmark [lowered its minimum salary requirements and expanded its work permit fast track scheme](#) to make it easier for companies to hire non-EU workers. They also improved chances for foreign students to get jobs by extending the job search period after completing their degree.
- In the US, clean energy and semiconductor companies have [called on the Biden administration to relax immigration rules to attract foreign workers](#) and keep foreign students, to help mitigate shortages of labour in the US construction sector.
- In Germany, the labour minister warned that if immigration reform is not implemented, [the country will lack 7m workers by 2035](#). Not long after, [a new immigration law was passed](#) to attract more people from outside the EU to work in Germany.
- In the UK, the points-based immigration system which was put in place to incentivise employers to hire more UK-born workers for low-skilled jobs (particularly in retail and hospitality sectors) has not worked and exacerbates labour shortages, as it does not encourage recruitment of migrant workers, [according to CIPD research](#).

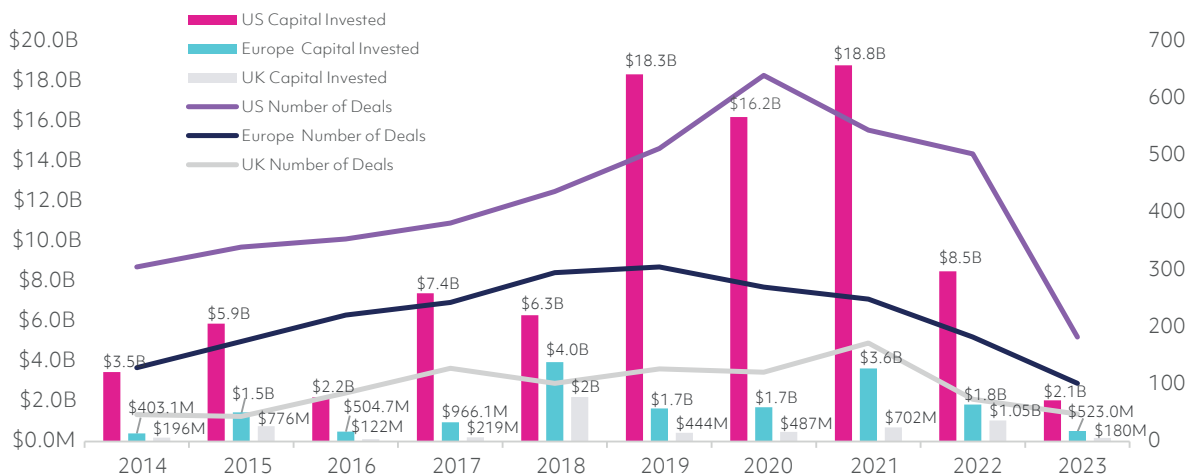
### The renegotiation of work

We continue closely to watch how organisations and workers are coming to mutually acceptable arrangements around where, when and how work is done in a post-pandemic world. [According to research from Randstad](#), 46% of 7,500 non-office workers across the US, UK, Australia, France, and Germany consider flexibility more important than pay. In the UK, an estimated 6% of employees left a job in 2022 due to lack of flexible working arrangement, while 12% changed their careers due to lack of flexibility [according to research from the Chartered Institute of Personnel and Development](#). However, practice varies widely across organisations in the search for productivity and some are becoming more demanding on workers’ physical attendance in the office:

- JP Morgan Chase asked its [managing directors to be in the office 5 days a week](#) and ended hybrid working for executives, while its hybrid staff have to be at the office at least 3 days a week.
- Blackrock similarly announced that starting September 11th, its employees would be [required to work from the office 4 days a week](#).
- Other companies are incentivising workers to move closer to the offices through relocation benefits. According to Ziprecruiter, [job ads that offer relocation benefits have more than doubled](#) from 2020 increasing to 3.8m from under 2m postings in 2020.

# Part II: VocTech Market Activity

Capital Invested in HR Tech Q2 2023



Source: Pitchbook

According to data from Pitchbook and Tyton Partners analysis, the total value of investments (private equity, venture capital, IPOs, and M&A activity) into HR Tech increased slightly from \$1.3b in Q1 2023 to 1.4b in Q2 2023 indicating that investors are moving cautiously in the market due to slowed economic growth, inflation, and higher interest rates. Nevertheless, there were still substantial deals.

There have been layoffs and restructures:

- [Cengage Group](#) announced that it had [signed an agreement where Apollo Global Management will purchase \\$500m](#) of a new series of convertible preferred stock of Cengage Group.
- [Open Classrooms](#), an online learning platform that offers professional certifications and degree courses, which had hired new employees after a quadruple increase in sales between 2019 and 2022, [announced plans to lay off a quarter of its staff](#) due a slowdown in growth in 2022.

However, strong and established venture funds have completed successful raises:

- [Reach Capital](#), a San Francisco-based venture firm, [closed a \\$215m fund aimed at backing early stage edtech companies](#) based in the US, Latin America and other regions.
- [JFF Ventures](#) launched a [new \\$50m fund to invest in early-stage companies](#) (pre-seed to seed) with founders from diverse backgrounds whose businesses offer adult education, workforce, and human resources technology.

- [Brighteye Ventures](#), a Luxembourg-based European edtech VC [announced the completion of its €100m fund](#) to provide capital to European edtech start ups at the seed and Series A stage.
- [Moonfire Ventures](#), a London-based venture capital firm that invests in early stage companies in Europe [raised \\$115m for its Fund II](#). Led by a co-founder of Atomico, it takes a highly-technology-driven discovery approach to potential investments in Capital & Finance, Gaming Community & Leisure, Health & Wellbeing, and Work & Knowledge.

Anecdotally, we are aware of many private equity funds who are sitting on “dry powder” in search of substantial deals in the space but remain circumspect about what opportunities are emerging. However, M&A activity did take place as big players continued to consolidate.

Our lists of selected deals are organised by sub-sector.

### Upskilling and corporate training

- [Careerist](#), a Miami-based platform that offers upskilling and job placement services for individuals pursuing tech careers [raised an \\$8m Series A round](#) from investors including Cathexis Ventures, Xploration Capital, Cold Start Ventures, Grand Park Ventures, Y Combinator, and angel investors.
- [Multiverse](#), a UK-based technology apprenticeship provider announced the acquisition of [EduFlow](#), a Danish learning management platform [for an undisclosed fee](#). This looks like an acquisition of desirable capabilities rather than a change in strategy.
- [Proof of Learn](#), a New York-based Web3 education platform [raised a seed round of \\$15m](#) led by New Enterprise Associates and joined by Animoca Brands, GoldenTree Asset Management, Gumi Cryptos Capital and Infinity Ventures Crypto.
- [Pathstream](#), a San Francisco-based online digital skills learning platform [raised \\$38.7m in a venture round](#) from undisclosed investors.
- [Opus](#), a New York-based training platform for businesses with deskless workers [raised \\$6.8m in a Series A round](#) led by Stage 2 Capital.
- [Hupso Academy](#), a start-up based in Paris that trains remotely and targets trades that are often neglected (such as works supervisors, educators and prison guards) [raised \\$7.89m in a Series A round](#) led by EduCapital.
- [Oneday](#), a London-based platform that offers formal entrepreneurship education, announced it had [raised \\$6.2m in a Series A round of funding](#) led by Ananda Impact Ventures, Brighteye Ventures, Outward VC, Flint Capital and Sparkmind.vc.
- [Whale](#), a Ghent, Belgium-based provider of a knowledge sharing and employee training platform, [raised €2.5m in funding](#) led by Volta Ventures and Peak.
- [Data Masters](#), an online provider of data science, artificial intelligence, and machine learning courses [raised \\$710k from various investors](#) including Zanichelli Venture.
- [Sana Labs](#), an AI-powered learning and knowledge platform headquartered in Stockholm, has [successfully secured \\$28m in a recent investment round](#) led by major Silicon Valley player [NEA](#), with additional support from [Workday Ventures](#). This is a notable and unusual foray into Europe for NEA – perhaps reflecting the AI hype.



- [DeepHow](#), a Detroit-based artificial intelligence powered learning platform for manufacturing, service, and repair [raised a \\$14m Series A round](#) led by [Owl Ventures](#), with participation from LG Technology Ventures, Osage Venture Partners and Foothill Ventures.
- [Go1](#), an Australian onboarding and professional development platform for training employees, [announced a \\$30m raise](#) from Insight Partners as well as the acquisition of [Blinkist](#), a Berlin-based book summarising platform for an undisclosed fee.
- [Develhope](#), a coding school based in Italy, [raised \\$6.46m in a round of funding led](#) by CDP Venture Capital.
- [Revoltrain](#), a Paris-based remote job training platform that offers training in digital skills [raised a \\$3.23m in a venture round](#) led by Kima Ventures, Michaël Benabou, Aonia Ventures and Bpifrance.
- [Kira Learning](#), an AI-powered platform that teaches computer science [closed a \\$15m Series A round](#) led by NEA and the AI Fund.
- [Red 6](#), a Florida-based military pilot training company, [raised a \\$70m Series B round](#) led by RedBird Capital Partners.
- [CyberWarfare Labs](#), a Cambridge-based cyber security firm has [raised a seed round](#) led by angel investor Sumit Siddharth.
- [Frntline](#), a Melbourne-based online training platform for frontline staff in the retail, hospitality, and pharmaceutical sectors [raised \\$4.6m in a seed funding round](#).
- [Tomorrow University](#) of Applied Sciences [raised \\$10m Series A round](#) led by EduCapital, Zanichelli Venture, Mediahuis Ventures, and Sparkmind.vc.
- [Liceo de Farmacia](#), a Seville-based online practical training on patient experience and sales techniques in the pharmacy sector, [closed a €500k pre-seed round](#) led by Brighteye Ventures.
- [IU Group](#), a German higher education provider [announced the acquisition of The University of Fredericton](#), an online university based in New Brunswick. Financial details of the deal are undisclosed. IU group also [acquired The London Institute of Banking & Finance](#) for an undisclosed amount.
- [Docebo](#), a cloud-based learning management system, [announced the acquisition](#) of [EduGo.AI](#), a platform the uses generative-AI-based learning technology to optimise learning paths. Financial details of the transaction are undisclosed.
- [360training](#), an online training provider based in Austin, Texas, announced the [acquisition of ACLS Medical Training](#), a provider of online medical certification and recertification courses.
- [Maximal Learning](#), a Seattle-based startup that uses generative AI to give students personalised learning [raised a \\$5.7m seed round](#) led by Trilogy Equity Partners, a Seattle-based venture capital firm.
- [Velopi](#), a Cork-based provider of project management courses and training was [acquired for an undisclosed amount](#) by [Educate 360](#), a Boston-based provider of instructor-led project management courses.
- [Santé Académie](#), a Lyon-based training provider for healthcare professionals [raised \\$13m of venture funding](#) led by MAIF Avenir, Sofiwest, and Bpifrance.



## VR and AR

- [Wonder](#), a Berlin-based Virtual Reality leadership training startup, [raised €500,000 in an angel round](#) led by [allygatr](#), a Berlin-based VC firm focused on HR Tech..
- [Praxis Labs](#), a New York-based VR learning platform that helps users develop soft skills [received an undisclosed amount of venture funding](#) from Accenture.

## Talent acquisition

In this space, bigger players continued to consolidate by acquiring smaller players that offer regional advantages or add extra services to their range of services:

- [Swing Education](#), a marketplace that connects schools with substitute teachers, [announced a \\$38m Series C round](#) led by funds advised by Apax Partners and Reach Capital.
- [Hackajob](#), a London-based hiring platform for tech workers [raised \\$25m in a Series B round](#) led by Volition Capital with participation from AXA Venture Partners and Foresight.
- [Edumentors](#), a UK-based platform that looks to connect parents and students with tutors from UK universities, [raised £500k in a Pre-Seed round](#) led by angel investors.
- [JobGet](#), a Boston-based job board that connects hourly workers with employers, [acquired Heroes Jobs](#), a Los Angeles-based social networking platform that connects younger workers with retail and hospitality roles.
- [Andela](#), a New York-based talent network that connects companies with engineering talent in emerging markets, [announced the acquisition of Casana](#), a Munich-based network for IT talent in efforts to expand into Western Europe. Financial details of the transaction are undisclosed.
- [World of talents](#), a Belgian-based staffing and recruitment service provider, [acquired Easycare](#), a German-based staffing company focused on medical and nursing professionals for an undisclosed amount.

- [Veritone Inc](#), a US-based developer of AI software, [announced a \\$52m deal to acquire Broadbean](#), a talent acquisition software from UK-based job board [CareerBuilder](#).
- [Instawork](#), a San Francisco-based platform that connects businesses with gig workers, [raised \\$60m in a Series D round](#) led by TCV with participation from 9Yards Capital, Larry Fitzgerald Jr, Benchmark, Spark Capital, Craft Ventures, and Greylock.
- [Engin Sciences](#), a New York-based talent management system [announced a \\$2.5m seed round](#) led by Gotham Green Partners.
- Twitter, through its parent company X Corp, acquired [Laskie](#), a San Francisco-based recruitment platform for a broad range of sectors including engineering, design and finance [for an undisclosed fee](#).

### Workforce management

- [Neobrain](#), a Paris-based HR tech platform that offers workforce management services, [acquired Flashbrand](#), a US-based employee engagement platform as the company looks to enter the US market. Financial terms of the deal are undisclosed.
- [Jet HR](#), an Italian pay roll and staff management platform [announced the closing of a \\$5.1m Pre-Seed round](#) led by Exor Ventures and Italian Founders Fund.
- [Paycor](#), a human capital management platform [announced the acquisition of Verb](#), an online leadership development, microlearning platform for business skills.

### Talent and skills assessment

- [Clu](#), a UK-based skills-based hiring platform that looks to connect companies to talent, [raised \\$1.5m in a funding round](#) from an undisclosed investor.
- [Spotted Zebra](#), a skills-based talent assessment platform [raised \\$2m in a seed round](#) of funding led by Playfair Capital.
- [Hire Vue](#), a candidate assessment and video interviewing company based in the US, announced the [acquisition of Modern Hire, a candidate assessment and video interviewing platform for \\$375m](#).

## Final reflections

This quarter feels like the one in which AI really started to disrupt the VocTech sector as well as the Future of Work landscape more widely. Whilst the summer may offer a brief respite from the accelerating pace of change, we anticipate a fascinating and surprising period when most in the Northern Hemisphere return to work and study in Q3.



