Future-Proofing Data Strategy

The Role of Apprenticeships in Empowering CDOs

CambridgeSpark

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The strategic role of the CDO

The share of leading global firms with a CDO has been rising, growing to 27% in 2022, up from 21% the previous year, according to a Statista report.

This trend is even more pronounced in Europe, where over 40% of top firms look to a CDO for data leadership. And a NewVantage Partners survey shows that 65% of large, data-intensive firms have a chief data officer, further highlighting the role's rapid growth since its establishment in 2002.

Chief data officers (CDOs), or chief data and analytics officers (CDAOs), aren't just another title in the C-suite. They're the linchpins holding the data-driven future of their organisations.

And in today's digital age, data is more than just a byproduct of business operations. It’s the fuel that drives decision-making, innovation, and competitive advantage.

According to a Gartner survey, 72% of data and analytics leaders are either leading or heavily involved in their organisation's digital transformation initiatives.

"I usually just use two words to define the role of the Chief Data Officer, and that's change agent. The aspects of the role that have been changing have to do with what's been happening in our industry. So, for instance, with the advent of AI and the way it's taking off most recently, you can see that there is going to be an impetus for chief data officers to get their companies ready for it."

Inderpal Bhandari, Global Chief Data Officer, IBM

As the role of the CDO has involved, CDOs are increasingly responsible for improving these key areas:

- **Decision-making**: CDOs guide their teams in collecting and analysing data that informs crucial business decisions.
- **Innovation**: They're at the helm of data-driven projects that lead to new products or services.
- **Competitive advantage**: They're tasked with forming and leading a well-executed data strategy to give their organisation an edge over their competitors.

The CDO's need to leverage available data to their advantage is coupled with an equally vital skill in managing change and stakeholders to successfully implement their data strategy.

The importance of data skills to a robust data strategy

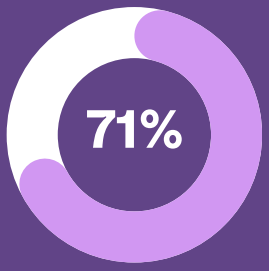
A robust data strategy is essential for:

- **Data governance**: Ensuring data quality and compliance with regulations like GDPR.
- **Data integration**: Seamlessly combining data from different sources for a holistic view and limiting wasteful siloed activity that is common with disparate data sources.
- **Data utilisation**: Leveraging data for actionable insights that align with business goals and translate to meaningful business impact.

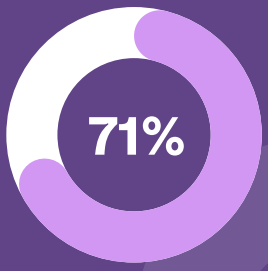
But CDOs hoping to implement their data strategy are facing a growing and pressing need for relevant data skills within their organisation.

According to a 2022 survey from Deloitte, CDOs have identified being constrained by limited data skills and being constrained by data literacy as two of their top three challenges.

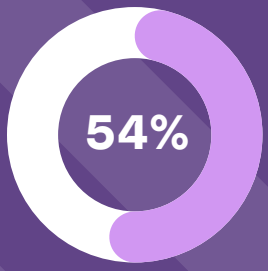
Top 3 Challenges of CDOs



Influencing the Executive Commitee



Constrained by limited data skills



Constrained by data literacy

We know that organisations increasingly have access to an abundance of data. But these organisations need a capable workforce with the right skill set in order to transform that data into meaningful business value.

So how are CDOs leading the way in cultivating a capable workforce?

"To a certain extent, pure technology is meaningless to enterprises. A company that uses technology for the sake of technology and data for the sake of data, which cannot be effectively transferred to business value, cannot survive."

Zhaolong Ma, Chief Data Officer, SUNDA Group

Exploring options for acquiring the right data talent

Hiring new staff is often the most obvious solution to filling a data skills gap in an organisation. Unfortunately, hiring new staff does come at a major cost.

December 2022 data from the Office for National Statistics places the average annual salary for full-time employees in Great Britain at £32,760. And with typical recruitment agencies charging 10% to 30% of an employee's starting salary, your organisation could be paying an average of between £3,276 and £9,828 for each new hire.

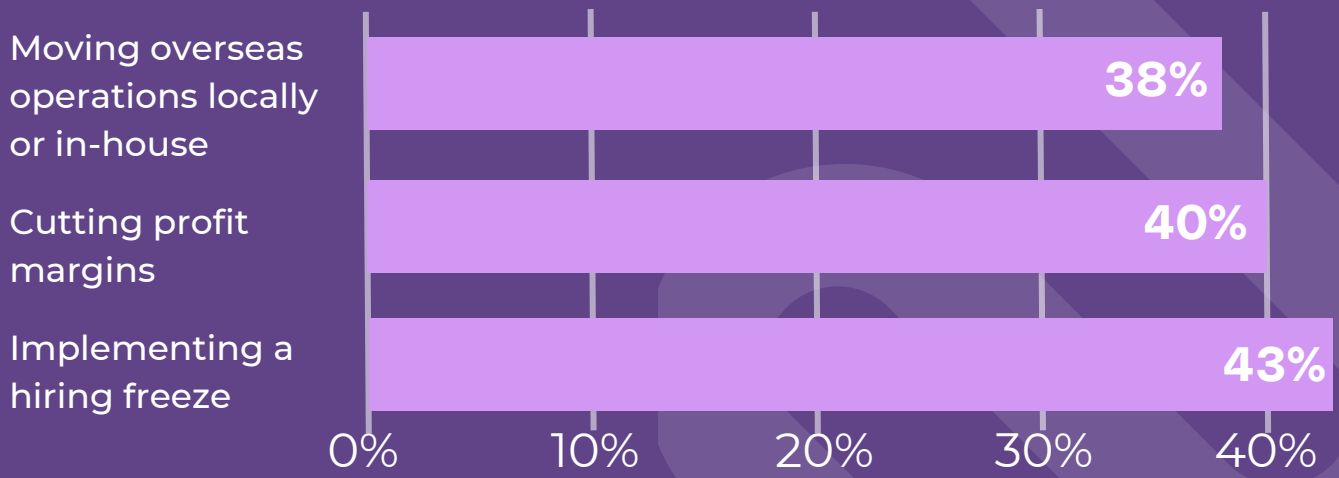
To make matters worse, there's not much assurance that a new hire will remain in their role long enough to demonstrate clear return on investment. Almost half of all new hires fail within the first 18 months.

And a study from the Society for Human Resource Management (SHRM) estimates the cost of replacing a salaried employee at 6 to 9 months' salary, a cost that includes the time spent on job specifications, promoting open roles, and assessing candidates.

Are CEOs prepared to accept these risks of hiring new talent to fill the data skills gap?

A 2022 KPMG survey of 150 UK CEOs suggests that, no, they are not. Of those surveyed, 81% of CEOs expected a recession over the next 12 months. And when asked what steps they'd taken or planned to take, in the next 6 months, 43% said implementing a hiring freeze.

UK CEOs' Steps Taken or Planned in the Next 6 Months



The upskilling imperative for data strategy

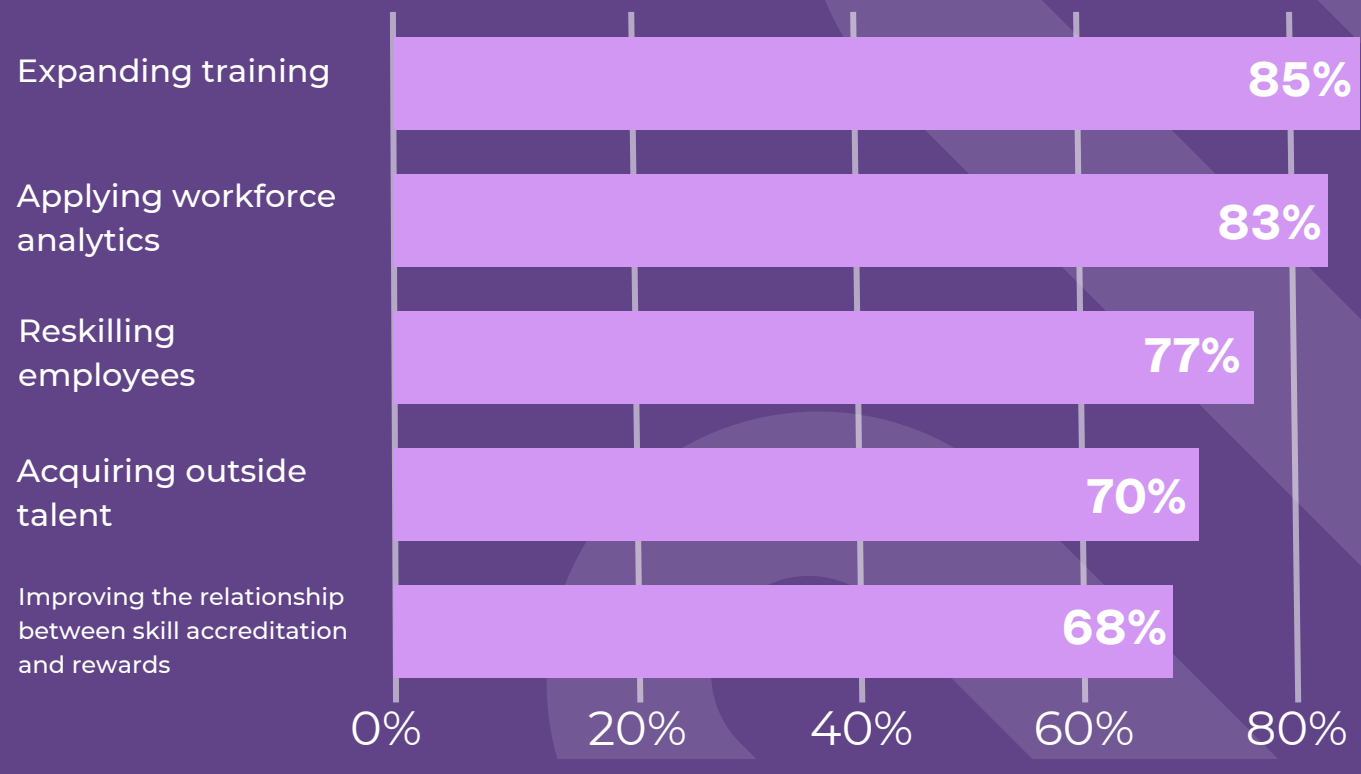
If looking externally to hire data talent isn't feasible, what is?

Organisations are increasingly turning to upskilling and reskilling existing employees as a means of cultivating the requisite talent without bearing all the costs and risks associated with new hires.

In the report titled, *2023 Chief Data Officer Study: Turning data into value*, the IBM Institute for Business Value interviewed 3,000 CDOs. Of these 3,000 CDOs, 8% were identified as “Value Creator CDOs” who spend less on data strategy and management than their peers but achieve equal or greater annual revenue growth.

These Value Creator CDOs cited expanding training and reskilling employees among the five key actions they take to increase data literacy across their organisation.

Value Creator CDOs Top 5 Actions to Increase Data Literacy



Upskilling, in particular, can be an attractive solution to building data skills in your organisation for a few reasons:

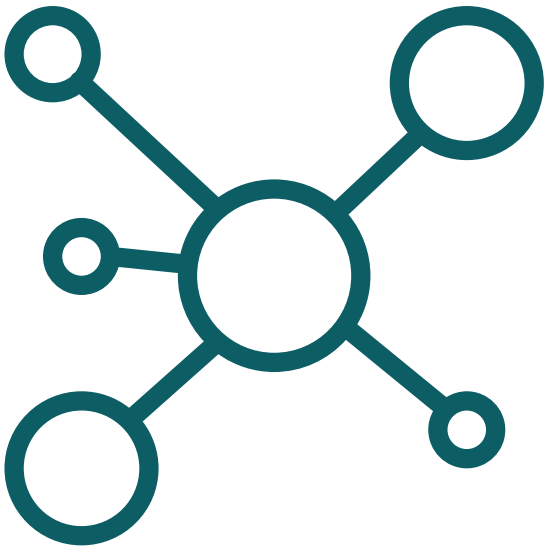
Capturing productivity gains

The skills gap in data science and analytics is not a new issue, but it's becoming more critical. According to a TalentLMS survey, 91% of companies and 81% of employees say that upskilling and reskilling in data-related areas have boosted productivity at work.

Enabling hub-and-spoke models for data teams

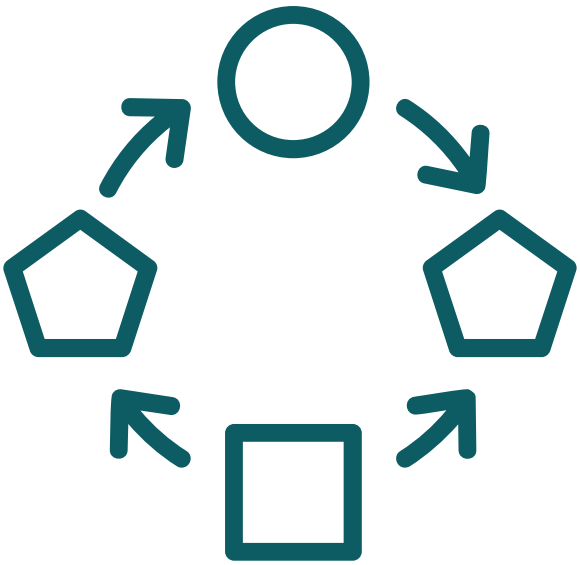
Data upskilling isn't just for employees in advanced data roles. Employees across various functions, including administration, marketing, finance and others regularly work with data and often depend on teams of data analysts and data scientists to support with routine and ad hoc tasks.

By upskilling these employees in data literacy, visualisation and analytics skills, organisations can free up their more advanced data teams to focus on higher-level projects, transforming them from cost centres into value creators.



Adapting to evolving technologies

According to a 2023 report by McKinsey, generative AI technologies are set to revolutionise various sectors, including data analytics.



The report emphasises the need for upskilling to keep pace with rapidly evolving technologies. AI could contribute up to $13 trillion to the global economy by 2030, but this can only happen if the workforce is adequately skilled.

Maintaining competitive advantage

A Deloitte report highlights that the demand for data analytics professionals will likely outstrip the available talent for some time.

Tech companies are ramping up their workforce, focusing on analytical skills such as machine learning, natural language processing, data engineering, and data visualisation. The report suggests that businesses across industries are scrambling to acquire AI talent to increase their data-driven decision-making.

Retaining top talent

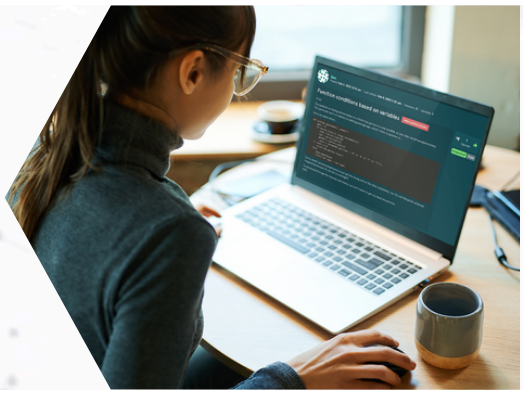
Investing in upskilling isn't just good for employees; it's good for the bottom line. Companies that invest in upskilling are more likely to retain top talent, improve productivity, and ultimately, be more profitable.

According to the same TalentLMS survey, 68% of companies invest in reskilling and upskilling to handle changes within the organisation, and another 65% do so to train employees on new technologies.

The data skills gap is widening. And the future belongs to those who are prepared for it. So, if you're a CDO looking to future-proof your data strategy, exploring opportunities for upskilling and reskilling your current workforce could be your best way forward.

Next, let’s turn our attention to one of the most exciting yet under-appreciated upskilling and reskilling solutions available to organisations in the UK: data apprenticeships.

Demystifying data apprenticeships



When you hear the word "apprenticeship," you might think of traditional trades like carpentry or plumbing. But apprenticeships have evolved, and they're now a viable pathway for upskilling in data science, analytics, product management and many other fields.

At its core, a data apprenticeship is a structured data upskilling programme that combines learning through lectures, workshops and assignments with support and skills deployment in on-the-job, real-world projects.

These apprenticeships are typically 13 to 15 months in duration with curriculum modelled after one of the UK's official apprenticeship standards.

Apprentices learn skills that they will either apply directly in their current role or in a new role they transition into after completing the programme. Best of all, apprenticeships are publicly funded and effectively cost-free for your organisation (more on that ahead).

"Having apprenticeships where people can come in and actually learn on the job is really useful. It's a great way for them to get the skills and the knowledge whilst being paid and also then progressing pretty quickly up the career path to immediately becoming an asset."

Monica Jones, Chief Data Officer, University of Leeds

How do data apprenticeships align with CDO goals?

Offering professional development opportunities to employees is always a nice initiative. But how do data apprenticeships help you achieve your goals as CDO?

Let's look at some of the typical CDO's top priorities:

Building hub-and-spoke systems of data support

Organisations that lack widespread data literacy often come to depend on dedicated data teams for all kinds of tasks—from basic, routine reporting, to ad hoc enquiries into what insights can be drawn from data.

The result is that these data teams, often made up of advanced data analysts and data scientists overqualified for these tasks, take on a support role, bogged down in fielding requests from data customers throughout their organisation. They become cost centres, rather than value creators.

Successful CDOs, instead, are able to achieve a hub-and-spoke model with wider data literacy that empowers employees who work with data across all departments to self-serve. Employees are able to complete 90% or more data tasks autonomously, freeing up the data team to work on the types of higher-level projects that drive the greatest business outcomes.

Consider the case of Exertis, a technology distribution firm based in Burnley England. Exertis adopted data apprenticeships as part of a graduate scheme to hire and upskill new professionals working across marketing, finance and other teams.

One such apprentice, a data analyst working within marketing called Luke Kay, was able to undertake more advanced data science work after the programme without hindering the data science team.

"We're providing input, but we're not taking over that workload. He's able to handle it but knows there's a central support team available from us to help him make progress if he needs advice on better suited tools or approaches to solve a problem."

Dr. Adeala Zabair, Head of Data Science & Analytics, Exertis

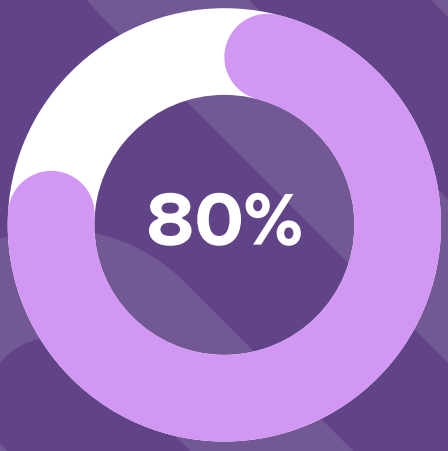
Apprentices at Exertis have gone on to apply their learning in identifying £200M+ in potential working capital efficiencies through machine learning. They've also saved thousands of hours through Python automations.

Developing a data-driven culture

According to a 2023 survey of data executives at 116 Fortune 1000 organisations, 80% of data leaders attribute cultural issues as the greatest impediment to realising business value. And 69% of CDOs spend significant time on data-driven culture initiatives.

We're seeing a shift in the way professionals understand, value and communicate data throughout their organisations once they begin a data apprenticeship.

80% of data leaders attribute cultural issues as the greatest impediment to realising business value



Madhavi Thatikonda, an administrator at Sundridge Medical Practice and a data apprentice, came away from her experience with a transformed perception of data. She collected and analysed patient feedback and then designed and presented an improvement action plan to management.

"My whole outlook has changed. Now I start to think of how to categorise data as we're collecting it and why we're sending data. I can now see the different ways to best communicate with and present data to different types of people."

Madhavi Thatikonda, Aministrator at Sundridge Medical Practice

Building reusable analytics capabilities

Data products can be created to directly contribute to desired business outcomes. But too often projects like these happen in isolation when they could be built for deployment in wider use cases in an organisation.

Todd James, who leads data and AI for the data science subsidiary of The Kroger Co., emphasises that building projects to address specific use cases is not enough. He argues that building reusable solutions with multiple applications is key.

"You've got to be able to scale by having a set of reusable analytical capabilities... With ML, we are moving toward platforms that everybody can take advantage of, with both standardisation and automation. We want to root out arbitrary uniqueness, and get rid of temporary ML platforms."

Todd James, Chief Data & Technology Officer, 84.51°

This approach not only brings cost savings via reusability, but also fosters data democratisation. Such initiatives lead to low-code or no-code solutions that are accessible to a wider range of non-technical stakeholders.

Saad Abdullah, a Data Analyst Apprentice at GSK, realised the effects of this strategy first hand. Besides saving the company an estimated £120,000 a year with a project that halved user efforts for data transcription, he also built reporting dashboards that help more easily analyse data. His dashboards are now being used by 54 colleagues across three global teams.

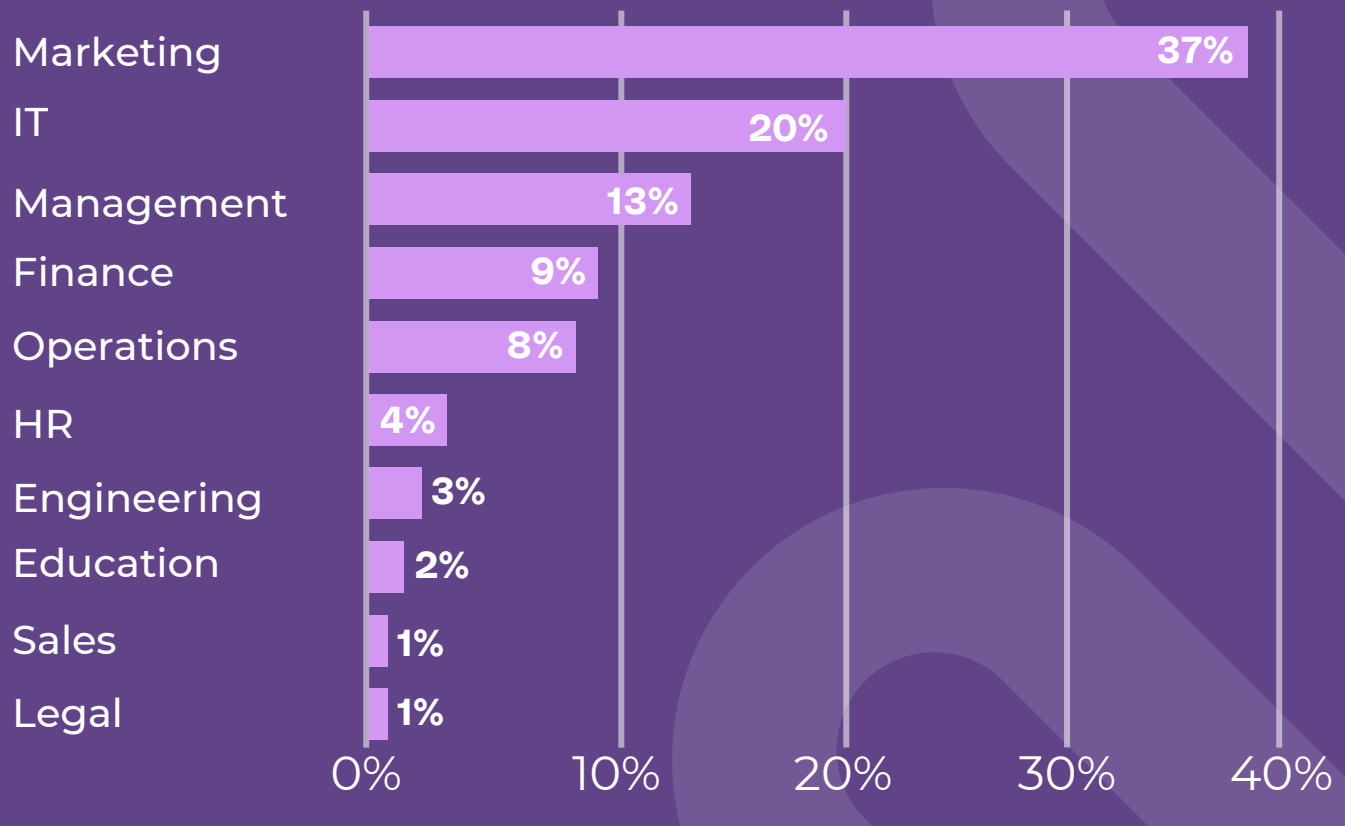
It's clear that data apprenticeships often help CDOs meet their priorities and accomplish business objectives. But to what types of professionals are these programmes relevant?

What roles benefit from data apprenticeships?

One aspect of data apprenticeships that makes them so appealing to senior leaders is their applicability for professionals working across a wide range of job functions.

We analysed the job functions of a sample of over 2,000 professionals who've recently participated in an apprenticeship with Cambridge Spark. Amongst those sampled professionals with clear job functions, 37% came from marketing. Professionals in IT, management and finance followed with 20%, 13% and 9%, respectively.

Top 10 Job Functions of Cambridge Spark Apprentices



Programmes created for different levels of data competence further expand upskilling access to a wider range of professionals. Cambridge Spark's Data Citizen Apprenticeship, for example, is designed for people looking to build data literacy. Professionals on this apprenticeship learn skills like:

- Spreadsheets for data analysis
- Charts and visualisations
- Dashboarding tools
- Storytelling and presenting with data
- Data storage, compliance and security

Through more advanced programmes, like the Data Analyst Apprenticeship, professionals learn analysis and data cleansing through programming languages like Python, Pandas and SQL. There's even an AI & Data Science Apprenticeship equivalent to a Master's Degree, where professionals can learn machine learning, time series analysis, neural networks and more.

Now onto the burning question: where does apprenticeship funding come from?

Funding through the UK Apprenticeship Levy

The Apprenticeship Levy is a UK government initiative aimed at encouraging employers to invest in apprenticeships as a way to upskill their workforce. If your organisation has an annual pay bill over £3 million, you're required to contribute 0.5% of that bill to the levy.

These funds then become ringfenced and available to your organisation to finance apprenticeship programmes. Any unused levy funds expire after 24 months, so levy funding really is a use-it-or-lose-it asset.

What if your organisation doesn't pay into the levy?

Organisations with annual payrolls under £3 million that don't pay into the levy can still qualify for government-funded apprenticeships for their staff.

In fact, the UK government will sponsor 95% of the apprenticeship programme. So your organisation will only ever need to privately invest, at most, 5% toward the total cost of an apprenticeship.

Transferring levy funding

When it comes to budget and funding, the UK Apprenticeship Levy offers more than just a way to fund your own apprenticeships.

Did you know you can transfer up to 50% of your available levy funds to other organisations for funding their own upskilling programmes? This arrangement can be a win-win for both organisations:

Levy transfers as an ESG initiative

If you're a large organisation with a large levy pot, transferring funds can be a fantastic ESG (Environmental, Social, Governance) initiative.

You can choose to support specific sectors, skills, or local areas. This not only helps smaller businesses but also enhances your corporate social responsibility profile.

Levy transfers as a boost to smaller organisations

On the flip side, if you're a smaller organisation without a large levy pot, you can receive transferred funds, extending access to apprenticeship programmes your workforce might not otherwise have.

Levy transfers can be a game changer, both for the larger organisations that don’t want to see excess funds go to waste and the smaller organisations that desperately need upskilling solutions for their workforce.

Closing the loop: How data apprenticeships complete the CDO's strategic vision

CDOs are at the forefront of driving data-centric growth and innovation. While the challenges of data literacy and skill gaps are real, data apprenticeships offer a practical, cost-effective solution.

These programmes enable CDOs to develop in-house talent, mitigating risks associated with hiring new staff and fostering a data-driven culture. In essence, data apprenticeships are an indispensable tool for CDOs looking to future-proof their data strategy.

Key takeaways

- **Data skills gap**: One of the biggest challenges for CDOs is the lack of relevant data skills within their teams.
- **Cost-effectiveness**: Data apprenticeships are a financially savvy solution, leveraging existing resources to develop in-house talent.
- **Alignment with CDO goals**: Apprenticeships offer a direct path to achieving a CDO's objectives, from enhancing decision-making to building a data-driven culture.

- **Future-proofing**: As the data landscape evolves, apprenticeships provide a sustainable way to keep pace with changes, ensuring long-term competitiveness.

The role of CDO is constantly changing. And data apprenticeships will no doubt play an ever larger role in transforming workforces to accomplish data strategies.

About Cambridge Spark

Cambridge Spark is an education technology company that educates the workforce with critical digital transformation skills to succeed in the AI era.

We offer a range of flexible learning solutions to meet business needs, from fast deployment of new skills with bespoke programmes through to longer-term investment in the workforce with apprenticeships. Our current apprenticeship programmes include:

Data & AI	Digital transformation	Cloud & Software
L7 Data Science & AI	L4 Digital Business Analyst	L5 Data Engineer
L4 Data Analyst	L4 Digital Product Manager	L4 DevOps Engineer
L3 Data Citizen		L4 Python Software Engineer

Why Cambridge Spark?

£300m
of confirmed ROI for clients

50% Distinction / Merit grades
vs. 33% industry average

2000+ community
of learners and alumni

550,000+ instant feedback points
provided to learners

Trusted by some of the world's leading organisations

easyJet, M&S EST. 1884, Bloomberg, AVIVA, Royal Mail, NHS, British Airways, NOMURA, BBC, HSBC, AstraZeneca, Cambridge University Press, Microsoft, GSK, compare the market, Pfizer

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