Department for Education National Skills Fund Consultation.

BCS Response.

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1 Executive Summary

This document is the BCS response to the Department for Education consultation on the National Skills Fund[1]

We first provide some overarching comments about the need for the National Skills Fund to be fully integrated with the other government strategies around economic growth that focus on digitally driven innovation. The document then looks in detail at the three key aspects of the consultation:

- Free level 3 qualifications for adults,
- Skills Bootcamps, and
- Meeting critical skills priorities.

In our view:

Digital is different: The National Data Strategy[2], the government report on 'Quantifying the UK Data Skills gap[3]', the AI Council Roadmap[4], the government report[5] on the need for digital skills, and the National Innovation Strategy[6] all emphasise that in a post-Covid, post-EU Britain it is essential that government does all it can to '*support the adoption of foundational digital technologies'* across all businesses.

That means the National Skills Fund should prioritise developing the digital skills capacity and capability in the UK workforce to fulfil the government's ambition that businesses throughout all sectors of the economy successfully adopt such foundational digital technologies.

Developing Vibrant Digital Business Clusters: In the National Innovation Strategy, the government states: "*Vibrant business clusters attract investment and talented workers and enable companies to grow. Strong and innovative supply chains influence the location and success of global corporations. This can all lead to further investment in the skills of local people, quality jobs, and opportunities. Working together in a local cluster or supply chain to innovate and do things differently can improve productivity and enrich local economies*."

The National Skills Fund should be used to develop the wide range of digital skills that will be needed across the digital supply chains that future vibrant business clusters will need. This will require a rigorous analysis of the types of Digital Skills Value Chains such digital clusters need, analogous to the Skills Value Chains that DfE and Gatsby are already exploring with the High Value Manufacturing Catapult[7]. We recommend building on widely used,

[1] https://consult.education.gov.uk/national-skills-fund-consultation/national-skills-fund-consultation/supporting_documents/NSF_Consultation.pdf
[2] National Data Strategy - GOV.UK (www.gov.uk)
[3] Quantifying the UK Data Skills Gap - Full report - GOV.UK (www.gov.uk)
[4] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/949539/AI_Council_AI_Roadmap.pdf
[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/807830/No_Longer_Optional_Employer_Demand_for_Digital_Skills.pdf
[6] https://www.gov.uk/government/publications/uk-innovation-strategy-leading-the-future-by-creating-it
[7] https://hvm.catapult.org.uk/mtfw/

employer-led skills frameworks, such as the Skills Framework for the Information Age (SFIA[8]) which has been mapped to the government's Digital, Data and Technology Profession Capability Framework, (DDaT[9]) to develop similar Digital Skills Value Chain models and methodologies, which then inform how the National Skills Fund targets particular skills needs. See Section 5 for more details.

We believe this is the best way to ensure the National Skills Fund supports business needs that are integrated into a coherent and cohesive funding strategy that delivers against the government's ambitions for wholesale digital innovation across all the UK's businesses.

Digitally Levelling Up: The government mantra of 'Levelling Up' has the ambition of ensuring everyone has the same opportunities of progressing through education, reskilling, and upskilling into good jobs. For that to happen the National Skills Fund needs to support adults of all ages, all backgrounds, all circumstances, and from all locations to get access to the right digital skills training for them. This is challenging to say the least but is of utmost importance for the government to deliver its plan to 'Build Back Better'. In the rest of the document, we outline how the National Skills Fund can address this challenge. This is explained with respect to each of the three key consultation themes listed at the start of this section and key consultation questions within those themes.

2 Consultation theme: Free Level 3 qualifications for adults

In this section, we look at some of the consultation questions concerning free Level 3 qualifications for adults,and provide our feedback based on the three overarching views in the Executive Summary.

2.1 Consultation question: How we can make these free qualifications even more accessible to a wide range of people?

We believe there needs to be a clear, established progression route to access the Level 3 qualifications on the National Skills Fund (NSF) list. Level 2 qualifications need to be recognised and valued as important stepping-stones, which give a broad introduction to vocational areas, as well as specific, transferrable skills. The proposed cuts in funding for Level 2 will eliminate an essential pathway for learners looking to take advantage of these NSF qualifications. Funding has now been removed for all Entry and Level 1 *ICT for Users* qualifications for students aged 16 and above - apart from EDSQs - and the proposal in the Call for Evidence at Post-16 Level 2 and below is to also remove public funding from the Level 2 ICT Functional Skills and Level 2 ICT Users qualifications.

As a first step the NSF entitlement should be extended to all adults to allow them to achieve a first full Level 2 qualification when necessary (from an approved list based on the Digital Skills Value Chain analysis) as well as those at Level 3.

The entitlement is currently only available to individuals who have not previously held a Level 3 qualification. However, this prevents anyone who already has Level 3 access to

[8] https://sfia-online.org/en/tools-and-resources/standard-industry-skills-profiles/sfia-8-skills-for-role-families-job-titles

[9] https://sfia-online.org/en/tools-and-resources/standard-industry-skills-profiles/uk-government-ddat-roles

funding from retraining into a strategically needed sector. Everyone should have access to Level 3 qualifications through the NSF if it remedies skills gaps identified by a Digital Skills Value Chain evaluation (as suggested in the Executive Summary).

The workforce is ageing fast; currently, 32% of British labour is aged over 50 and this is projected to rise to 37% by 2040. Training is often in a format more suited to younger learners. To be truly accessible, the delivery model of NSF courses needs to work for learners of all ages and training providers should have to demonstrate how this will be done.

Access to good-quality careers advice is key in making sure adults of all ages remain informed and realise their potential as effective and relevant members of the changing workplace. This needs to be integrated with the NSF offer, and informed by the Digital Skills Value Chain analysis, so everyone is empowered to know what careers they can aspire and move into.

There needs to be integrated financial support as part of the NSF to make training fully accessible. This could, for example, be in the way of means-tested maintenance loans/grants for adults combining employment and part-time study towards Level 2 and 3 qualifications.

There needs to be a thorough evaluation of whether the 'right to retrain' should include legislation to give employees a statutory right to request a certain number of days for 'learning leave'.

2.2 Consultation question: How we can ensure these free qualifications meet the needs of a range of employers?

As we stated in the Executive Summary, we recommend building on widely used, employer-led skills frameworks, such as for example SFIA[10] which has been mapped to DDaT[11], to develop rigorous Digital Skills Value Chain models and methodologies, which then inform how the National Skills Fund targets particular skills needs.

This kind of systematic, rigorous methodology is essential to avoid being diverted by fragmented backwards-looking anecdotal evidence. For example, the Shadbolt Review[12] of Computer Science Degree courses noted that:

"*We have found that employers disagree on what technical skills Computer Sciences students should be taught, although the balance of evidence points to support for HE providers teaching the fundamental principles of Computer Science and encouraging and enabling students to learn and adapt to new technologies over their careers. This runs counter to an opposing school of thought that has been evident from some employers, that suggests that they want graduates with the skills that reflect the most up to date*

[10] https://sfia-online.org/en/tools-and-resources/standard-industry-skills-profiles/sfia-8-skills-for-role-families-job-titles
[11] https://sfia-online.org/en/tools-and-resources/standard-industry-skills-profiles/uk-government-ddat-roles
[12] https://www.gov.uk/government/publications/computer-science-degree-accreditation-and-graduate-employability-shadbolt-review

technological trends."

Although that review was concerned with higher education, the point it makes about the difficulties of establishing widespread consensus amongst employers on specific skills needs is also valid at the further education level.

SFIA on the other hand has been subject over many years to the kind of extensive open consultation, expert peer review, and evolution recommended in the 'Guide to Evidence for Policy' published by the IPO[13]. It is also used globally. For example, it has recently been licensed[14] by the Australian Government to be used for free by all Australian citizens.

Employers will need access to as wide a pool of candidates as possible, including people with Level 6 qualifications who may need to develop new skills that are at Level 2 or 3. There is often a misconception that a graduate with a Level 6 qualification who needs to reskill to a new career needs to achieve a second Level 6 qualification. However, many could choose careers and occupations that are of national strategic importance and where a Level 2 or 3 qualification or training package is required and so, funded re-skilling at Level 2 and 3 is highly recommended. The NSF should allow graduates with Level 6 qualifications to access funds for retraining if the training helps to remedy skills gaps identified by a Digital Skills Value Chain evaluation. This will ensure such training meets the needs of employers whilst also delivering against the government's national strategic ambitions.

Within FE, the priority is to upskill adults with a first Level 3 qualification and provide progression for all to Levels 4, 5 and 6. However, many adults with a Level 3 qualification could be seeking employment at Level 3 or Level 2 and there could be value in those roles if they map to roles within a Digital Skills Value Chain model. Providing it is consistent with a Digital Skills Value Chain assessment, graduates should be able to access reskilling opportunities at any level, from Level 2 to Level 6 and non-graduates should be able to progress to Level 6 if appropriate, but also retrain at Level 2 and 3.

A large proportion of SME businesses do not have the capacity or internal resources to be able to adopt new technologies or implement transformational change. The smaller the firm the less likely it is to have the resources to invest in training. We know they are asking for support and advice but don't know where to access it. SME employees need a diverse range of transferable, flexible skills and this needs to be recognised as part of the training provision. There needs to be a strategic process to support SMEs in key local sectors to help them design business change/development programmes, which should be enabled through a Digital Skills Value Chains methodology.

[13] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/510985/Guide_to_evidence_for_policy.pdf

[14] https://www.dta.gov.au/blogs/important-step-australian-digital-capability

The British economy has over 75,000 different job roles currently available – the range of courses via the NSF needs to represent that breadth. The 400 courses on the current list needs to be extended to take into account the full breadth of skilled digital jobs that are essential to support the type of vibrant digital business clusters the National Innovation Strategy calls for. In the Annex Section 7, we list over 200 different job titles across a set of digital job roles that are mapped against the SFIA skills framework. Ideally, there should be qualifications, training and Bootcamps that support progression into all of these types of jobs.

2.3 Consultation question: Progression into Level 3 courses and how we can best target the offer.

While fully recognising and supporting the need to increase the proportion of people qualified at Levels 3 and above, this should not be at the expense of the nine million adults who have low numeracy or literacy skills, or those without a suitable technical Level 2 qualification. The lack of early and entry-level digital skills is increasingly a barrier to finding or moving jobs, and to being adaptable to changes in the workplace. The National Skills Fund should have as much focus on increasing take-up of basic and introductory digital skills as it should on promoting Level 3 and above learning. The 'skills progression ladder of opportunity' is still vitally important to maintain despite the DfE policy of removing a raft of qualifications at Level 2 and below.

The upcoming Lifelong Loan Entitlement is aimed at making it as easy for adults to get a loan for higher technical courses as it is for a full-length university degree. This is an opportunity to look at a reformed version of the former Individual Learning Accounts to allow access to subsidized study across all levels. This would widen the opportunity for more learners to progress.

When thinking about progression onto Level 3 qualifications and beyond it is important to consider that for most adults, time and money are stretched and taking time out to study for large, full qualifications will be off-putting, even if possible. Bite-sized chunks of learning certificated through micro-certificates or credits which over time can be stacked and built into more substantial qualifications will enable more people to take up opportunities and is something that should be supported through the NSF.

The recent government response to the Level 3 qualifications review states that the DfE will be defunding 43% of non-A level, Level 3 qualifications by 2025, which accounts for over a quarter of a million Level 3 enrolments, including BTECs. Defunding BTECs will eliminate a key progression route to further study. Studying a BTEC qualification can be an accessible and effective route into skilled employment as students from working-class backgrounds, and with Black and Asian heritage are most likely to use BTECs to get into university – and this reform is likely to significantly disadvantage this group. This decision means that many thousands of students may be left without a viable pathway after they have finished their GCSEs, which would be counterproductive for the economy, society and a significant cohort of young people.

3 Consultation theme: Skills Bootcamps

In this section, we look at some of the consultation questions concerning Skills Bootcamps and provide our feedback based on the three overarching opinions in the Executive Summary.

3.1 Consultation question: How we can ensure that Skills Bootcamps are as accessible as possible.

In our view, Bootcamps need to be flexible enough to allow each region to respond appropriately according to local needs and demands, both currently and in the future. The challenge here is that there needs to be careful monitoring of this to ensure that the provision responds to local requirements, but not so that it is so regionalised that it creates a postcode lottery of support and access. Our recommendation is that Digital Skills Value Chain models and methodologies are used to identify how best to stimulate the growth of innovative business clusters in a region to create growth in the key areas identified by the National Innovation Strategy, which includes as one of the top seven areas AI, Digital and Advanced Computing.

3.2 Consultation question: How we can make it easier for more providers to deliver Skills Bootcamps.

In our view, there is a need to involve smaller, regional providers in upskilling the workforce in their region. The National Skills Fund should be an opportunity to support smaller businesses that may not usually be able to access development and training through more traditional routes. Once again understanding how that can be done may best be achieved through applying appropriate Digital Skills Value Chain methodologies and models.

In our view, the range of schemes and initiatives that have been launched or revised recently (Kickstart, NSF Level 3 quals, Bootcamps, traineeships etc) need to be better aligned so that they provide a cohesive set of initiatives that will develop Digital Skills Value Chains and have the funding that accompanies them simplified. The Bootcamps, for example, involve a new complex funding formula, despite the DfE's commitment in its FE white paper to "*reform our funding and accountability system*" of which "*simplification and streamlining of funding*" was central. We strongly recommend DfE conduct a thorough analysis of the current funding and accountability system to identify where much more fundamental simplification and streamlining can be introduced.

3.3 Consultation question: How we can ensure that Skills Bootcamps meet the needs of a range of employers, and the mechanisms through which employers can make contributions to Skills Bootcamps.

The government's National Innovation Strategy has identified that digital and management skills are of critical importance in the workplace. It is important to note that older workers need more computer and digital skills training than younger workers. The NSF is ideally placed to respond to these skills needs and we strongly encourage DfE to make sure it is flexible enough to allow each Mayoral Combined Authority to respond appropriately in their locality.

In our view, the NSF programmes currently are not sufficiently mutually supportive or cohesive, and in our soundings, with employers, they have said they find them confusing. It is vital to ensure the various jobs and skills initiatives are cohesive to allow as many people as possible to benefit, including employees and employers. In building much greater cohesion across the initiatives it is important to consider that employers need a unified and flexible system that can rapidly respond to their future skills needs.

3.4 Consultation question: How Skills Bootcamps can fit within longer progression pathways.

Fundamentally we strongly recommend adopting a Digital Skills Value Chain approach as outlined in Section 5. This provides a rigorous peer-reviewed methodology for providing a coherent and cohesive set of initiatives, including Bootcamps, that will deliver future vibrant business clusters that drive innovation, in exactly the way called for by the National Innovation Strategy.

Additionally, the Higher Technical Qualifications that will be available from Sept 2022 should be meant as a progression from the NSF and Bootcamps, but in our view, they are large, substantial qualifications that may not suit a significant proportion of learners for the reasons given above. We believe there should also be smaller and modular learning opportunities at Levels 4 and 5, as well as the lower levels. The Skills for Jobs White Paper does not fully explain what will become of courses at Levels 4 and 5 that are not awarded Higher Technical Qualification approval and status. It states that there are plans to 'reduce funding for non-approved higher technical qualifications from 2023', but there needs to be clarity about this, and what the future changes in the distinction between higher and further education will be. To understand how the NSF initiatives fit into longer progression pathways, we need transparency about the breadth and scope of HTQs that will be approved, how they will be funded, and what will happen to the non-approved courses that currently exist.

Currently, Skills Bootcamps courses do not need to carry formal accreditation and adults who complete the course do not routinely receive a qualification. We believe progression would be more meaningful and clearer if the Bootcamps were aligned to the knowledge, skills, and behaviours that the qualifications that surround them adhere to. For example, BCS and QA are partners on a Digital Skills Bootcamp, where BCS provides this type of accreditation with regards to professional progression within the Information Technology sector.

4 Consultation theme: Meeting critical skills priorities

In this section, we look at some of the consultation questions concerning meeting critical skills priorities and provide our feedback based on the three overarching opinions in the Executive Summary.

4.1 Consultation question: Respondents' views on where the skills system could do more to meet priority skills needs.

The report from the Workplace Training and Development Commission (May 2021) identified the '*need to help businesses build high-performance learning cultures and for firms to play a strong role in place-based skills planning*'. In our view the government need to ensure businesses have the support and resource to develop and implement organisation-wide workplace training and development, linked to innovation and improved productivity – with the result that it stimulates recurring investment in skills. This support should be both from the government, but also through the third sector including professional bodies.

In our view, local skills plans need to be scaffolded by robust and thorough engagement with businesses - particularly SMEs who struggle most to navigate the skills system - to address the local economic policies towards sustainable employment opportunities. We know employers need support to identify their gaps and associated training opportunities. As we have frequently commented in our view this should be done through an appropriate Digital Skills Value Chain methodology.

4.2 Consultation question: How much employers and providers are already using shorter courses and for what purposes.

The drive to a net-zero and greener economy, and related emerging technologies, is leading to additional challenges on top of the already existing digital and technical skills gaps, as well as a need for courses specific to new homeworking, such as remote people management.

In our view, there is a clear need for shorter courses and modules to update skills on an ongoing basis. These need to be high value and accredited so they benefit the learner's career progression, not just their immediate job needs. They also need to be mapped against established, widely used, employer-led Skills Frameworks such as SFIA. That would provide the possibility of progression pathways to professional recognition, such as for example Chartered Information Technology Professional or Chartered Engineer status.

5 Digital Skills Value Chain

This short section provides a brief overview of a Digital Skills Value Chain methodology.

The following diagram is adapted from the methodology explained in the High Value Manufacturing (HVM) Catapult 'Skills Value Chain'. The only modification is to highlight how an employer-led skills framework can underpin the methodology to provide strong alignment with established professional practice and with progression pathways to Chartered Status from appropriate professional bodies. Note the HVM work is based on synthesising international good practice across several countries.

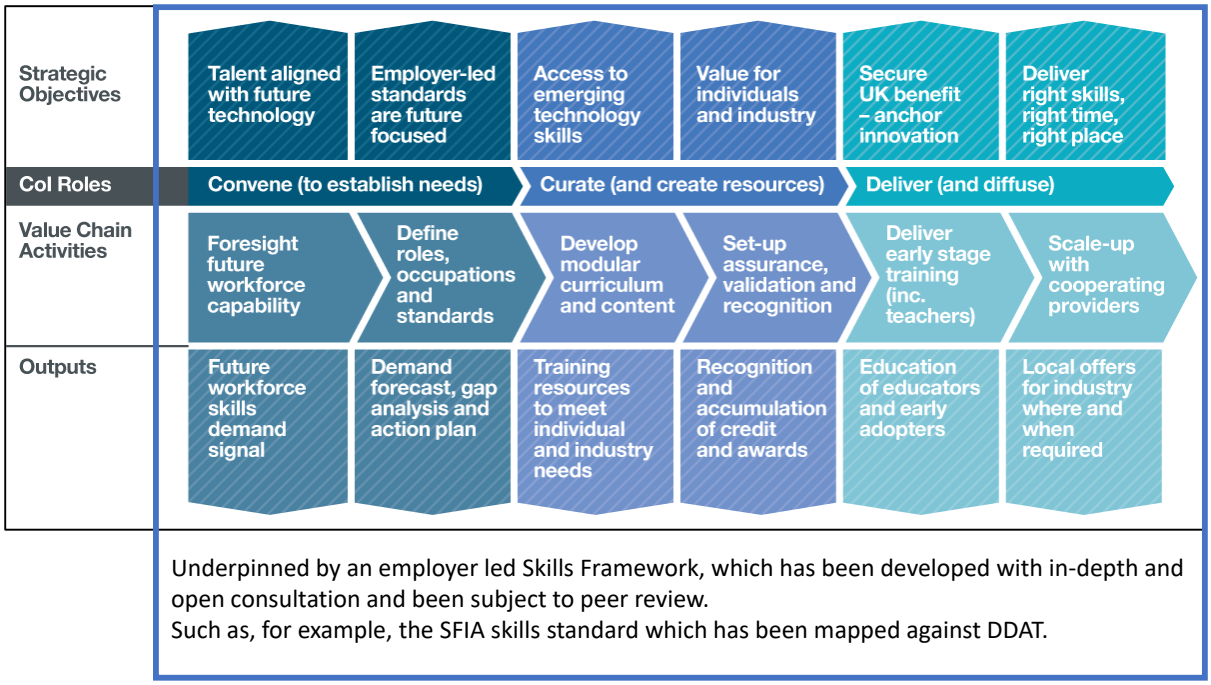

Figure 1: The Digital Skills Value Chain methodology

For more details on the working of a Skills Value Chain, the reader is referred to the High Value Manufacturing Catapult work[15], which is in collaboration with DfE and co-funded by the Gatsby Foundation.

6 Background Evidence

The following background evidence is useful to understand where there are digital skills gaps (soft and hard skills), which helps paint a picture of the need for **developing professional skills** within a recognised skills framework led by employers (for instance SFIA), and which technical skills are needed.

6.1 Existing BCS Data

The BCS 2020 **survey of IT leaders**[16] reported that employer's priorities are

- Continuous innovation (54%),
- Operational efficiencies (52%), and
- Business transformation and organisational change (45%).

When asked to single out their number one priority,

- 22% of participants cited business transformation and organisational change.

The technologies organisations are prioritising are

- Cloud (53%),
- Cyber security (52%),
- Automation (36%),

[15] https://hvm.catapult.org.uk/mtfw/
[16] https://www.bcs.org/media/5498/itleaders-2020.pdf

- IT governance (34%), and agile methods (34%)
- 21% of respondents mentioned artificial intelligence, which is becoming more of a reality for business and not just a piece of horizon scanning.

Figure 2 below shows the result of a **survey[17] on the adoption of AI,** which BCS conducted in 2021 of slightly more than 300 companies of various sizes. The figure shows the different types of skills firms find most difficult to recruit for in the context of adopting AI technologies. 45% of companies reported that data analysis skills were hard to recruit for, with 44% reporting finding people with the technical skills to adopt innovative AI is difficult, and 37% reporting the skills necessary to integrate AI systems into business processes as difficult to recruit.

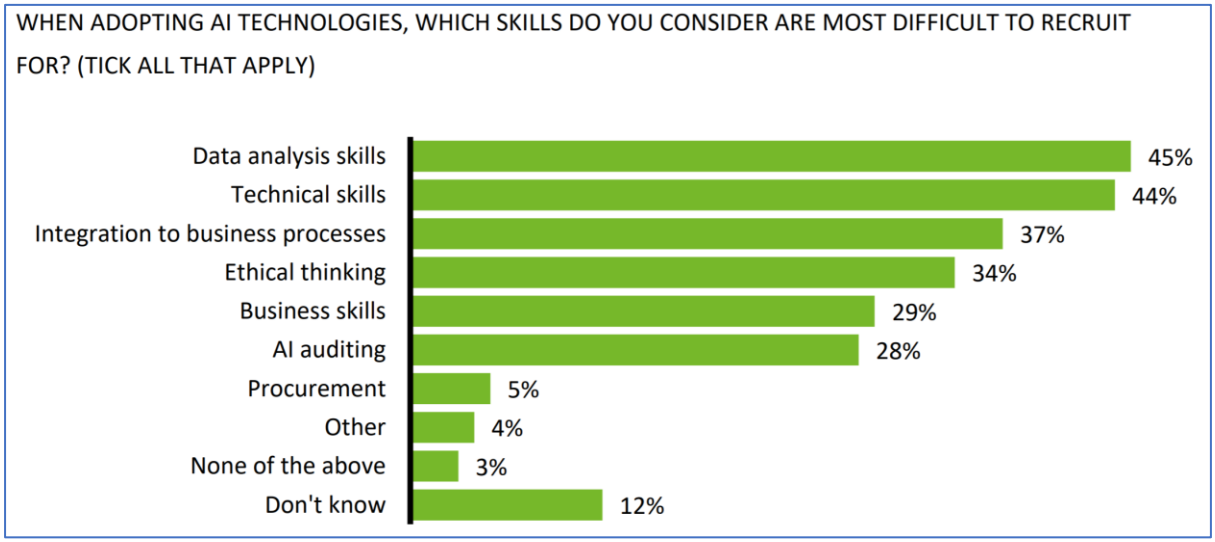

Figure 2

This data helps to paint a picture of where DfE initiatives to fill skills gaps in the UK need to be focused, and where the National Skills Fund needs to play its part.

6.2 DCMS survey of 1000+ firms

This section summarises some of the data from the DCMS policy paper[18] 'Quantifying the UK Data Skills Gap', which is highly relevant to the current DfE consultation**.** It is relevant because it characterises the types of skills that firms need both now and, in the future, which should be met to some extent through the National Skills Fund.

The table below shows the top 5 **data skills** for firms, as measured by the gap between Importance and Performance of 1000+ firms in the DCMS survey:

	Importance	**Performance**	**Gap**
Information management	87%	68 %	19%

[17] https://www.bcs.org/media/6024/ai-report-2020.pdf
[18] https://www.gov.uk/government/publications/quantifying-the-uk-data-skills-gap/quantifying-the-uk-data-skills-gap-full-report

	Importance	Performance	Gap
Communication	89%	71%	18%
Data communication skills	84%	66%	18%
Knowledge of emerging technologies and solutions	80%	62%	18%
Data literacy	84%	67%	17%

The following table shows the percentage of employers saying that the following **soft data skills** are very or somewhat important to their company (Importance), versus the percentage of employers saying that data skills are performed very or somewhat well in their company (Performance)

Skill	Importance	Performance
Professionalism	90%	76%
Communication	89%	71%
Problem solving	88%	75%
Collaboration	85%	72%
Adaptability	85%	69%
Critical thinking	84%	69%
Subject matter expertise	83%	72%
Industry / sector expertise	82%	72%
Analytical mindset	82%	66%
Creativity	81%	67%

Again, this highlights that the National Skills Fund should be funding activities that are aligned with other government initiatives that address the above skills gaps.

The following table shows the percentage of employers saying that the following **hard data skills** are very or somewhat important to their company (Importance) versus the percentage of employers saying that data skills are performed very or somewhat well in their company (Performance)

Skill	Importance	Performance
Information management	87%	68%
Basic IT skills	87%	77%
Data literacy	84%	67%
Data ethics	84%	67%
Database management	84%	67%
Analysis skills	84%	67%
Data communication skills	84%	66%
Data processing	81%	67%
Knowledge of emerging technologies and solutions	80%	62%
Data visualisation	79%	64%
Advanced statistics	72%	61%
Programming	68%	59%
Machine learning	68%	58%

6.3 DfE Data on Digital Apprenticeships

The following table shows the DfE published data[19] for digital apprenticeship starts and achievements at Level 4 and above for 2018/19. The totals were:

[19] https://www.gov.uk/government/collections/further-education-and-skills-statistical-first-release-sfr

Framework/Standard	18/19 Starts	18/19 Achievements
Data Analyst	1,760	40
Digital and Technology Solutions Professional (Integrated Degree)	1,510	210
Digital and Technology Solutions Specialist (Integrated Degree)	180	-
Digital Engineering Technician	90	-
Digital Learning Design	20	10
Digital Marketer	3,090	650
Digital Marketer Integrated Degree	20	-
Digital Support Technician	20	-
IS Business Analyst	480	10
IT and Telecoms Professionals	6,690	4,630
IT Solutions Technician	10	-
IT Technical Salesperson	400	90
Total	**14,270**	**5,640**

Compare the level of apprenticeship provision with DCMS data (the skills gap survey mentioned in the earlier section) that shows in 2021 there are:

"*UK companies recruiting for 178,000 to 234,000 roles requiring hard data skills. Almost half of businesses (48%) are recruiting for roles that require hard data skills but under half (46%) have struggled to recruit for these roles over the last 2 years*"

OUR POINT: Despite the fact digital apprenticeships are a *huge success story* that government deserves credit for developing, currently the level of provision falls far short of employer demand. Our conclusion is that the current market-driven solution is not sufficiently scaling the progression pipeline to digital apprenticeships that UK PLC needs, and requires further government intervention to scale it in accordance with the government's stated ambitions to Build Back Better. The NSF should be designed to be a major intervention that drives a massive scaling of the pathways to level 4+ digital apprenticeships.

7 ANNEX: Digital job titles mapped against SFIA

The following list is of existing digital job titles from all economic sectors that have been mapped against the SFIA skills framework. It illustrates the full range of skilled jobs that should be part of progression pathways supported through the NSF. We include it here to

give a sense of the depth and breadth of information technology roles that are vital for the UK.

Data science practitioners
Example job titles...
Data scientist
Lead data scientist
Quantitative analyst
Data analyst
Data engineering practitioners
Example job titles...
Data engineer
Data operations practitioners
Example job titles...
Data operations engineer
ML operations engineer
Data production engineer
Software engineering practitioners
Example job titles
Software Engineer
Principal Software Engineer
Senior Software Engineer
Software Development Engineer
Software engineering practice management
Example job titles
Engineering Manager
Senior Engineering Manager
Director of Engineering
Senior Director of Engineering
VP of Engineering
Senior VP of Engineering
DevOps practitioners
Example job titles
DevOps Engineer
Senior DevOps Engineer
Site Reliability Engineer
DevOps practice management
Example job titles
DevOps Manager
DevOps Director
DevOps VP
Business analysis practitioners
Example job titles
Business Analyst

Junior Business Analyst
Lead Business Analyst
Principal Business Analyst
Business Systems Analyst
Requirements analyst

Business analysis practice management

Example job titles

Business Analysis Practice Leader
Business Analysis Manager
Head of Business Analysis

Security operations

Example job titles

Cyber Security Technician
Information Security Technician
Security Operations Manager
Infrastructure Specialist
Operations Support Analyst
Security Operations Centre (SOC) Service Desk Analyst
Security Operations Centre (SOC) Analyst

Incident management practitioners

Example job titles

Incident analyst
Incident Manager
Major Incident Manager
Lead Incident Manager
Cyber Incident Manager

Security risk management, audit and compliance

Example job titles

IT auditor
Info sec compliance consultant
Security assessment auditor
Audit manager

Security leadership, strategy and management

Example job titles

Chief Information Security Officer CISO
Information security manager
Security architect
Information security analyst
Cyber security manager
Cyber security governance manager
Cyber security analyst
Information Security Lead

Testing practitioners

Example job titles
Tester
Test Manager
Test Architect
Test Automation Analyst
Test Programme Manager
Test Analyst
Junior Tester
Lead Test Analyst

Testing practice management

Example job titles
Testing Practice Leader
Head of Testing
Head of QA and Testing

Project delivery practitioners

Example job titles
Programme Manager
Programme Director
Portfolio Manager
Project Manager
Project Analyst
Project Office Manager
Project Office Analyst

Project delivery practice management

Example job titles
Project Delivery Practice Leader
Head of Project Delivery
Head of Project & Programme Management

Agile practitioners

Example job titles
Scrum Master
Agile Coach
Product Manager
Product Owner
Release Train Engineer

Enterprise architecture practitioners

Example job titles
Enterprise Architect
Lead Enterprise Architect
Chief Enterprise Architect
Data Architect
Infrastructure Architect
Innovation Architect
Business Architect

Strategy Architect
Security architect

Solution architecture practitioners

Example job titles

Solutions Architect
Solutions Designer
Lead Solutions Architect
Product Architect
Domain Architect

Architecture practice management

Example job titles

Architecture Practice Leader
Head of Enterprise Architecture
Head of Solutions Architecture
Chief Architect

User research practitioners

Example job titles

User Researcher
Senior User researcher

Service design practitioners

Example job titles

Service Designer
Senior Service Designer
Customer Experience Designer
Multi-channel Designer
Product Designer

User experience practitioners

Example job titles

UX designer
UX analyst
UX architect

Service strategy and architecture practitioners

Example job titles

Service Architect
Service Designer
Service Introduction Manager
Service Tooling Architect
Service Modeller
Service Process Manager

Service operations practitioners

Example job titles

Service Desk Analyst
Service Desk Manager
Service Desk Lead

Problem Analyst
Problem Manager
Service Operations Manager
Identity & Access Management (IAM) Analyst
Customer Service Manager
Customer Engagement Manager
Service Data Analyst
Service Supplier Manager
Service Performance Manager

Incident management practitioners

Example job titles

Incident Analyst
Incident Manager
Major Incident Manager
Lead Incident Manager
Cyber Incident Manager

Learning & development (L&D) practitioners

Example job titles

L&D Manager
Chief Learning Officer
Head of L&D
L&D Consultant
Learning and performance consultant
L&D administrator
Trainer

Teaching practitioners

Example job titles

Teacher
Lecturer
Department Head
Programme Director
Chair of Examiners
Subject Lead
Trainee Teacher

8 Who we are:

BCS is the UK's Chartered Institute for Information Technology. The purpose of BCS as defined by its Royal Charter is to promote and advance the education and practice of computing for the benefit of the public.

We bring together industry, academics, practitioners, and government to share knowledge, promote new thinking, inform the design of new curricula, shape public policy and inform the public.

As the professional membership and accreditation body for IT, we serve over 55,000 members including practitioners, businesses, academics and students, in the UK and internationally.

We also accredit the computing degree courses in over ninety universities around the UK. As a leading IT qualification body, we offer a range of widely recognised professional and end-user qualifications.