



House of Commons
Committee of Public Accounts

The Defence digital strategy

**Thirty-Sixth Report of Session
2022–23**

*Report, together with formal minutes relating
to the report*

*Ordered by the House of Commons
to be printed 26 January 2023*

The Committee of Public Accounts

The Committee of Public Accounts is appointed by the House of Commons to examine “the accounts showing the appropriation of the sums granted by Parliament to meet the public expenditure, and of such other accounts laid before Parliament as the committee may think fit” (Standing Order No. 148).

Current membership

[Dame Meg Hillier MP](#) (*Labour (Co-op), Hackney South and Shoreditch*) (Chair)

[Olivia Blake MP](#) (*Labour, Sheffield, Hallam*)

[Dan Carden MP](#) (*Labour, Liverpool, Walton*)

[James Cartlidge MP](#) (*Conservative, South Suffolk*)

[Mr Simon Clarke MP](#) (*Conservative, Middlesbrough South and East Cleveland*)

[Sir Geoffrey Clifton-Brown MP](#) (*Conservative, The Cotswolds*)

[Mr Jonathan Djanogly MP](#) (*Conservative, Huntingdon*)

[Mrs Flick Drummond MP](#) (*Conservative, Meon Valley*)

[Rt Hon Mark Francois MP](#) (*Conservative, Rayleigh and Wickford*)

[Mr Louie French MP](#) (*Conservative, Old Bexley and Sidcup*)

[Peter Grant MP](#) (*Scottish National Party, Glenrothes*)

[Anne Marie Morris MP](#) (*Conservative, Newton Abbot*)

[Jill Mortimer MP](#) (*Conservative, Hartlepool*)

[Sarah Olney MP](#) (*Liberal Democrat, Richmond Park*)

[Nick Smith MP](#) (*Labour, Blaenau Gwent*)

Powers

Powers of the Committee of Public Accounts are set out in House of Commons Standing Orders, principally in SO No. 148. These are available on the Internet via www.parliament.uk.

Publication

© Parliamentary Copyright House of Commons 2023. This publication may be reproduced under the terms of the Open Parliament Licence, which is published at <https://www.parliament.uk/site-information/copyright-parliament/>.

Committee reports are published on the [Committee’s website](#) and in print by Order of the House.

Committee staff

The current staff of the Committee are Jessica Bridges-Palmer (Media Officer), Ameet Chudasama (Committee Operations Manager), Sarah Heath (Clerk), Tom Lacy (Chair Liaison), Rose Leach (Committee Operations Officer), Ben Rayner (Second Clerk).

Contacts

All correspondence should be addressed to the Clerk of the Committee of Public Accounts, House of Commons, London SW1A 0AA. The telephone number for general enquiries is 020 7219 5776; the Committee’s email address is pubaccom@parliament.uk.

You can follow the Committee on Twitter using [@CommonsPAC](#).

Contents

Summary	3
Introduction	4
Conclusions and recommendations	5
1 The Defence digital strategy	8
Why the Department needs a digital strategy	8
Measuring progress	9
2 Specialist digital skills and major programme delivery	11
Recruiting specialist digital skills	11
Performance delivering major digital programmes	12
3 Funding and data	14
Sustainability of funding	14
Using data for advantage	15
Formal minutes	17
Witnesses	18
Published written evidence	18
List of Reports from the Committee during the current Parliament	19

Summary

The Ministry of Defence (the Department) is not well set up to implement digital change at pace and scale, and must fundamentally change the way it operates to do so. While it has put in place a new digital strategy which acknowledges and seeks to address this, the Department does still not have a delivery plan which will allow it to track and measure its performance effectively.

The Department operates a vast digital estate comprising over 2,000 systems and applications for 200,000 users, ranging from administrative and back-office IT to military platforms such as ships and satellites. Much of this estate is made up of legacy systems, with the Department's central Defence Digital organisation having estimated in 2019 that it would need to spend £11.7 billion updating or replacing legacy systems over the following decade. Since then, the Department has struggled to deliver the major programmes which are designed to replace these systems. Of the five whose performance is reported publicly by the Infrastructure Projects Authority in its 2021–22 annual report, it found three had significant issues ('amber') and two were unachievable ('red').

One of the key delivery issues the Department must address is filling critical gaps in its digital personnel and upskilling current military and civilian staff. The Department struggles with the pay it can offer candidates, the location of some of its posts, and the extended security vetting times needed for new entrants, which in some instances can take over 200 days.

The rapid deployment and exploitation of new technology is now at the very heart of the defence of the realm, and the urgency of this challenge is demonstrated by the current conflict in Ukraine. If the Department is to get to grip with these large and pressing challenges and successfully deliver the objectives of its new strategy by 2025, organisational and cultural change must be required. As an early 'down payment' on this, the Department's digital action plan, now expected in April 2023, must display a genuine sense of urgency to address these serious issues, accompanied by a thorough, realistic and costed programme for doing so.

Introduction

The Ministry of Defence (the Department) has developed the digital strategy for Defence (the strategy), which describes how it intends to transform its use of technology and data. By 2025, the Department aims to create:

- a) digital ‘backbone’ – this is how the Department describes the technology, people, and processes that will allow it to share data seamlessly and securely.
- b) a digital ‘foundry’ – a software and data analytics centre to exploit this data; and
- c) a skilled and agile community of digital specialists – who will help digitally transform Defence.

The Department’s chief information officer (CIO) leads Defence Digital, an organisation within Strategic Command. The CIO sits on the Department’s Defence Delivery Group (DDG) and reports jointly to the commander of Strategic Command and the second permanent secretary, who holds senior accountability for digital across Defence. The CIO and Defence Digital, which controls £2.7 billion of the Department’s estimated annual £4.4 billion spend on digital, are responsible for leading the implementation of the strategy.

Conclusions and recommendations

1. **The Department accepts that it has not yet transformed itself to meet the challenges of modern warfare.** The Department says digital technology is rapidly changing the character of warfare, but that it is not yet able to exploit new technologies at pace and scale. This is because it does not fully understand what data it has; old ‘legacy’ systems complicate tasks as routine as ordering a pair of boots; its processes are set up to procure conventional military equipment rather than software; and it lacks all the digital skills it needs. The Department has failed to solve these problems previously, but now recognises the need to adopt digital technology as a military imperative. The Department says it is starting to make progress tackling these challenges through its latest digital strategy and senior leadership’s support for it. However, we agree with the Department’s assessment that digital must urgently become a whole-of-Defence effort and that this will require significant cultural change. The Department aims to address this through its current ‘digital exploitation for Defence’ work.

Recommendation: *Within six months, the Department should provide us with an update that sets out the outcomes of its ‘digital exploitation for Defence’ work, and how it will embed the cultural and organisational changes needed to ensure the whole Department prioritises digital transformation.*

2. **Despite the urgency and ambition of its digital strategy, the Department does not yet have a delivery plan to measure and track progress.** The Department’s digital strategy sets out how it wants to share and exploit data effectively for information advantage and develop a skilled and empowered digital function by 2025. It will be difficult for the Department to achieve this given the scale of activity across more than 90 digital projects in its portfolio, its large legacy IT estate, and wide-ranging specialist skills shortages. The National Audit Office (NAO) report that the Department’s digital strategy is consistent with good practice, but that it lacks a complete delivery plan to measure its progress. Although the Department has plans in place for individual projects, it accepts that it needs to bring these plans together to show how they add up to the outcomes the Department wants. The Department is now working on a delivery plan that does this, which it intends to publish in April 2023. This will give Parliament and the public much needed transparency about how to assess the Department’s performance towards the ambitious targets it has set itself for 2025.

Recommendation: *In its update to us in six months, the Department should also set out how it is performing against its delivery plan, including what metrics it is using to track performance.*

3. **The Department faces a considerable challenge to recruit the specialist digital skills that its strategy relies on.** We have reported previously on the shortage of specialist digital skills in the marketplace and how many government departments are struggling to overcome this long-standing challenge. Indeed, the Department identifies getting the right skills as a key factor in whether it will succeed or fail to achieve its goals by 2025. The skills it needs are wide-ranging and include data analysis, cyber advisory, artificial intelligence, service manager and project delivery skills. The Department’s challenges include the limited pool of specialist skills in Corsham (where it bases its work on digital), its ability to compete in the market on pay, and

waiting times of over 200 days on average for developed vetting security clearance. In response, the Department is trying to change how it recruits by rebranding itself as an innovative place to work with internal training opportunities, and by working differently with big technology companies and small and medium-size enterprises. The Department is positive about the impact this seems to be having and over the last 18 months reports meeting its target of recruiting 150 specialists. However, it wants to double this number next year, an objective that will be difficult to achieve.

Recommendation: *In its update to us in six months, the Department should also set out how it has changed its approach to recruitment and what quantified effect this has had.*

4. **The Department is struggling to deliver its largest, most transformational digital programmes.** The Infrastructure and Projects Authority's (IPA's) most recent public reporting from March 2022 shows three of the Department's major digital programmes have significant issues ('amber') and two are unachievable ('red'). These are the Department's most complex and transformational digital programmes, which it needs to get right if its strategy is to succeed. The Department accepts its performance up to now is worrying and that it needs to up-skill staff and think differently about processes and risk. In particular, the Department wants a more diverse mix of experience in its digital project delivery teams. By bringing in different skills and ways of thinking from industry, it hopes to become more confident at working in agile ways more appropriate to developing software. Although the Department recently intervened to pause its now red-rated Next Generation Core Networks programme, it still needs to get quicker at stopping and improving failing digital programmes. The Department has made some progress on the basics such as rolling out laptops and video conferencing in response to COVID-19. However, we are concerned by the continued lack of improvement in IPA assessments of the Department's major digital programmes.

Recommendations:

- *a) In its update to us in six months, the Department should also explain the actions it has taken to improve its performance in delivering major digital programmes.*
 - *b) When the Infrastructure and Projects Authority publishes its Annual Report in 2023, the Department should provide us with the latest delivery confidence ratings for its digital major programmes and explain how and why they have changed.*
5. **The Department's budget is under considerable pressure, and this may make some planned, future digital activity unaffordable.** As inflation rises, the purchasing power of the Department's existing budget falls. The Department is starting to see pressure build on its pay settlements and in the cost of raw materials, meaning it may be hard to deliver its digital strategy as originally planned. The Department's longer-term funding position will only become clearer following the refresh of the Integrated Review in 2023. In addition to its military importance, the Department is also turning to digital technology to deliver administrative efficiencies. The Department's target is to make £1.4 billion of cash savings from digital technology

by 2032–33 and it is confident it will achieve this. However, the Department says it will no longer compromise on the funding programmes needed to keep systems updated over their lifetimes, to ensure that the issues it faces with its current legacy estate do not reoccur. It will take time and commitment for this, and existing efforts to upgrade existing legacy systems and data, to make a difference. The Department says that because digital transformation is a top priority that it will try to protect funding for its digital portfolio. However, it will need to stick to this approach for many years in what is likely to be a challenging budgetary position.

Recommendation: *Following the next update to the Integrated Review, the Department should write to us explaining whether planned and actual spend on digital has changed and whether it has enough funding to deliver the strategy.*

6. **The Department is not yet able to share and exploit data across the Armed Forces and with partners effectively enough.** Recent events including the COVID-19 pandemic and the war in Ukraine show the importance of responding in a nationally and internationally integrated way. As the character of warfare changes, the Department needs to better integrate its operations and increase its partnering with other government departments, industry, academia and international allies. This was starkly illustrated by the Chief Information Officer admitting digital technology could be a limiting factor in the optional operation of Ajax and Morpheus. How the Department will update its digital systems fast enough so that the operational capacity of any pieces of equipment will not be hampered by the lack of digital systems remains unclear. It is making progress toward this by building a common architecture and set of rules that the whole Department must follow. This could support working more closely with partners and sharing data securely, including at higher security classifications. However, the Department has not yet catalogued all its data and adoption of these common standards is at an early stage. The Department also must work in hostile environments including, for example, at sea with limited connectivity, or where adversaries may be trying to undermine its security or effectiveness. The Department estimates that currently 80% of its effort is on the fundamental technology, people and processes it needs to share data effectively. By 2025, the Department wants 80% of its effort to be on exploiting this data for benefit. For example, the Department is starting to gather data on equipment and people automatically for military planners to better assess its readiness to respond.

Recommendation: *The Department should set out in its April 2023 update to the digital strategy, how it will measure its progress in creating the ‘backbone’ and track its balance of effort between data enablers and data exploitation.*

1 The Defence digital strategy

1. On the basis of a report by the Comptroller and Auditor General, we took evidence from the Ministry of Defence (the Department) about the Defence digital strategy. The rapid advance of technology is changing the character of warfare, introducing a shifting and accelerating landscape of threats. The rapid deployment and exploitation of new technology is now at the very heart of the defence of the realm, and the urgency of this challenge is demonstrated by the current conflict in Ukraine.¹

2. The government's Integrated Review also placed greater priority on identifying and deploying new technologies faster than potential adversaries to enable operations across all arenas of warfare and collaborate better with partners. Cyberspace is itself also becoming an increasingly important arena of warfare, with external threats increasing and constantly evolving as access to offensive cyber capabilities becomes easier.²

3. The Ministry of Defence (the Department) has developed the digital strategy for Defence (the strategy), which describes how it intends to transform its use of technology and data in response to these challenges. By 2025, the Department aims to create:

- a digital 'backbone' – this is how the Department describes the technology, people, and processes that will allow it to share data seamlessly and securely.
- a digital 'foundry' – a software and data analytics centre to exploit this data; and
- a skilled and agile community of digital specialists – who will help digitally transform Defence.³

4. The Department's chief information officer (CIO) leads Defence Digital, an organisation within Strategic Command. The CIO sits on the Department's Executive Committee and reports jointly to the commander of Strategic Command and the second permanent secretary, who holds senior accountability for digital across Defence. The CIO and Defence Digital, which controls £2.7 billion of the Department's estimated annual £4.4 billion spend on digital, are responsible for leading the implementation of the strategy.⁴

Why the Department needs a digital strategy

5. The Department sets out in its digital strategy that the widespread availability of disruptive technologies is changing the character of warfare and politics.⁵ As examples of this, the Department explained that Russia has used the electromagnetic spectrum to counter Ukrainian forces and manoeuvres, and cited separate attacks against financial and health systems. The Department sees this as an era in which the ability to transfer code rapidly from industry to its operations will be decisive.⁶ However, the National Audit Office (NAO) reported that the Department has not yet set itself up to implement digital

1 C&AG's Report, *The digital strategy for Defence: A review of early implementation*, Session 2022–23, HC 797, 19 October 2022, paras 1–3, 1.3

2 C&AG's Report, paras 1–3

3 C&AG's Report, paras 1–3, Ministry of Defence, *Digital Strategy for Defence: Delivering the backbone and unleashing the power of Defence's data*, April 2021

4 C&AG's Report, paras 5, 23

5 Ministry of Defence, *digital strategy for Defence: Delivering the backbone and unleashing the power of Defence's data*, April 2021

6 Qq 12, 34

technologies at speed and scale.⁷ Given its assessment of the changing character of warfare, we suggested that the Department must find this concerning. The Department agreed, but pointed to the progress it has already made in implementing its digital strategy, which aims to address these issues.⁸

6. In its digital strategy, the Department identifies some of the reasons it finds it hard to use digital technologies at speed and scale. It notes that its data are hard to access, its technology is ageing, and its processes and culture are not suited to the information age.⁹ The Department explained that its data are hidden away in its legacy systems and sometimes it does not even fully know what data it has.¹⁰ We asked the Department why a simple, routine task, such as ordering a pair of boots, is such a complicated process. The Department recognised the process was too bureaucratic, time-consuming and probably expensive, but noted this resulted from the complexity of the systems it has built up over time.¹¹ The Department added that it wants to reform how it does acquisition more broadly, which it plans to do by taking a quicker and more flexible approach to buying software and technology. This is a very different approach to that needed for the complex military equipment typical of Defence, such as a frigate or submarine.¹²

7. In its report, the NAO draws attention to the slow progress wider government and the Department have made with previous digital strategies.¹³ We wanted to know why the Department thinks its most recent strategy will succeed, given that it has been so difficult in the past. The Department reflected that it is now starting to understand how digital technology can affect its ability to win, and that this means it has become an agenda for the whole of Defence. The Department explained that, for the first time, it is tackling the challenge with the support and commitment of all its senior leadership.¹⁴ Nonetheless, it recognised that transforming the Department in the way it wants will require significant cultural change.¹⁵ The Department also said that its senior leadership team are meeting regularly to discuss priorities for the digital transformation of Defence, as part of a programme of work called ‘digital exploitation for Defence’ to help elevate the status of digital for Defence.¹⁶ We asked how the Department intends to work across all its technology and data, when the chief information officer (CIO) only controls £2.7 billion of its £4.4 billion spend on digital. The Department told us that Defence Digital’s finance director will soon have visibility of all significant digital business cases or investment decisions made across 16 Defence organisations. It hopes this will help de-duplicate and better coordinate its digital investments.¹⁷

Measuring progress

8. In its digital strategy, the Department sets itself three strategic outcomes to achieve. By 2025 it wants to share data seamlessly, use it effectively to gain advantage, and develop a

7 C&AG’s Report, para 2

8 Q 13

9 Ministry of Defence, *digital strategy for Defence: Delivering the backbone and unleashing the power of Defence’s data*, April 2021

10 Q 52

11 Q 66–69

12 Qq 12–13, 66–68; [TDS0004](#)

13 C&AG’s Report, para 1.13

14 Qq 57–60

15 Q 52

16 Q 60

17 Qq 19–20

skilled and empowered cadre of digital specialists.¹⁸ The NAO reported that achieving this by 2025 is ambitious, given the scale of the challenge and persistent barriers to change. We got a sense of this scale as we discussed the Department's portfolio of over 90 projects and major programmes, its large legacy IT estate, and wide-ranging specialist skills shortages. Therefore, we asked the Department if it will successfully achieve its strategy by 2025. The Department told us that it hopes it will be successful, but it may take longer if it cannot recruit the skilled people it needs.¹⁹

9. The NAO reported that the Department's strategy is consistent with good practice across government. For example, its strategy recognises data as a strategic asset and that people and processes are as important as technology to successful digital change.²⁰ However, the NAO also found that the Department lacks a complete picture of its progress against its strategy and recommended that the Department immediately create a clear delivery plan for the strategy. We asked the Department how it intends to measure its progress.²¹ The Department explained that it has plans and reporting in place for its individual projects, but agreed with the NAO's recommendation, saying that it needs a single plan against which it can measure progress. The Department told us it wants to design a plan that will give clear outcome metrics the Department can measure against, to demonstrate internally and to us that it has improved.²² We wanted to know how the Department intends to provide transparency for Parliament and the public, so that we can assess the Department's performance towards the ambitious targets it has set itself for 2025. The Department stated that it intends to publish its plan in April 2023.²³

18 Ministry of Defence, *digital strategy for Defence: Delivering the backbone and unleashing the power of Defence's data*, April 2021

19 Q 61; C&AG's report, para 25

20 C&AG's Report, para 13

21 Q 62; C&AG's Report, paras 25, 26

22 Qq 49, 61–62

23 Qq 48, 61–63

2 Specialist digital skills and major programme delivery

Recruiting specialist digital skills

10. We have reported previously that there is a large gap between the demand and supply of the digital specialists that government needs.²⁴ We found that government is yet to make meaningful progress overcoming this long-standing challenge, which often leaves it reliant on contractors.²⁵ We pressed the Department on this point and they concurred that the availability of technology skills continues to be a problem for the whole UK economy. We heard from the Department that its current digital workforce is a mixture of civilian, contractor, and military personnel and that it draws on a range of commercial and academic partners to supplement this.²⁶ The Department also has the ability to draw on reservists, some of whom are digital specialists in civilian life and can provide those skills on a part-time basis.²⁷ In its digital strategy, the Department notes that it has “fallen behind in accessing the specialist skills we need”.²⁸ The Department identified that getting the further specialist skills it needs is a key factor affecting its likelihood of success in achieving the strategy’s goals by 2025.²⁹ It told us these skills will include: architects; business analysts; cyber advisory risk specialists; data analysts; developers; delivery managers; infrastructure engineers; IT service managers; data science; experts in AI, robotics and cyber-security; and product managers.³⁰

11. However, the National Audit Office reported that the Department finds it difficult to recruit and retain digital specialist talent.³¹ We were interested in what is stopping the Department from getting the skills it needs; for example, its ability to pay the market rate for digital specialists. The Department acknowledged that it does not expect to compete with the private sector on pay. However, the Department said it is starting to extend government’s common digital pay framework across the whole of Defence to help remove internal competition across the Department.³² We noted that around 60% of the Department’s digital jobs are based in Corsham and the Department acknowledged that it had “saturated the Corsham catchment area”, but felt it would be a big challenge over many years to move all its staff from there. The Department explained that it is looking to partner with other departments at different locations in the UK and is doing more remote and flexible working.³³ The Department also suffers from lengthy security clearance waiting times, which on average are currently over 200 days for developed vetting clearances,

24 Committee of Public Accounts, *Challenges in implementing digital change*, Thirtieth Report of Session 2021–22, HC 637, 10 December 2021

25 Committee of Public Accounts, *Challenges in implementing digital change*, Thirtieth Report of Session 2021–22, HC 637, 10 December 2021

26 Q 14

27 Qq 34, 79–82

28 Ministry of Defence, *digital strategy for Defence: Delivering the backbone and unleashing the power of Defence’s data*, April 2021

29 Qq 24, 61

30 Q 76

31 C&AG’s Report, para 21

32 Qq 25–27

33 Qq 87–88

making the on-boarding progress take too long in a competitive labour market. Although the Department agreed this is not good enough, it explained that it is working with the Cabinet Office, which is responsible for vetting services, to improve this.³⁴

12. We asked how the Department intends to perform better than the market, which it needs to do if it is to overcome the lack of supply of digital specialists. The Department told us that it has focused heavily on its brand and giving people access to interesting and innovative areas of work to develop their skills.³⁵ It found that emphasising this in its job adverts increased the number of applicants, in one case by up to 20 times.³⁶ We were keen to understand how the number of applicants is changing. The Department's written response stated the average number of applicants for Defence Digital roles increased from 3.6 in August 2022 to 6.1 in November 2022.³⁷ As well as rebranding itself, the Department told us it must work in a very different way with UK industry. This would increasingly include working with both larger-scale high-tech organisations, and small and medium-sized entities (SMEs), which currently find it too expensive to work with the Department.³⁸ The Department reported that it met its target to recruit 150 digital specialists over the last 18 months, but that it needs to recruit 300 more in the next 18 months.³⁹

Performance delivering major digital programmes

13. One area where these resourcing challenges have become apparent is in Defence Digital's track record of delivering major digital programmes. These are the Department's most complex and transformational programmes, many of which are needed to replace older legacy systems, and which it needs to get right if its strategy is to succeed.⁴⁰ However, the Infrastructure and Project Authority's (IPA's) most recent reporting from March 2022 showed that, of the five programmes which report publicly, three of the Department's major programmes have significant issues ('amber') and two are unachievable ('red').⁴¹

14. The NAO report identified that Defence Digital's project delivery has suffered from a lack of skilled and experienced personnel, immature project controls, and a culture focused on the approvals process rather than outcomes.⁴² The Department accepted that its performance up to now is worrying and that it needs to up-skill staff and think differently about processes and risk.⁴³ In particular, the Department said that it wants a more diverse mix of experience in its digital project delivery teams. It hopes that by bringing in different skills and ways of thinking from industry, it can become more confident at working in agile ways that are more appropriate to developing software, as opposed to conventional defence items.⁴⁴ BAE Systems, in its written evidence, argued that it is quicker and easier to iterate five versions of a digital product or service than it is

34 Qq 89–90; C&AG's Report, paras 3.13–3.14

35 Qq 16, 86

36 Q 16

37 Qq 30–33; Letter from Laurence Lee CMG to PAC Chair Dame Meg Hillier, 18 November 2022

38 Q 16

39 Q 78

40 C&AG's Report, para 17

41 Q 15; C&AG's Report, para 18

42 C&AG's Report, para 17

43 Qq 15, 70–71

44 Q 70

to be perfect first time.⁴⁵ The Department also told us it is trying to think differently about management information and reporting, as well as wider peer challenge and review across its project delivery portfolio to make better use of the specialists it has.⁴⁶

15. Nonetheless, we challenged the Department on its need to get better at stopping and improving failing digital programmes.⁴⁷ The Department stated it had recently paused its core networks programme to make changes to its design before going out to the market.⁴⁸ They also paused specific software components of the Morpheus programme (itself a sub-component of the Land Environment Tactical Communications and Information Systems (LE TacCIS) programme) as they did not believe these were being delivered appropriately.⁴⁹ However, they stated that while there have been problems with one component part of Morpheus, they would still deliver continuous capability upgrades through this programme, and the over-arching LE TacCIS programme, over time.⁵⁰

16. Similarly, the Department pointed out that where some programmes were rated red, there were elements of good progress on sub-programmes within them. While the IPA rated the Department's MODNet Evolve programme red, the Department told us that 16 of its sub-programmes were either delivered or on track, with three remaining elements due to conclude over the next 18 months.⁵¹ It hopes to move the programme's rating to amber in 2023.⁵² It also told us that the red-rated New Style of IT Base programme was responsible for the rollout of new IT during the Covid-19 pandemic, having now delivered 180,000 laptops across Defence, as well as collaboration tools for remote working and video conferencing.⁵³ However, these are relatively basic IT items, and the technology the Department is ordering is becoming increasingly sophisticated.⁵⁴

17. The Integrated Review, has, at its heart, much greater digital connectivity between military platforms, in order to achieve a significant force-multiplier effect, even with, in some cases, notably fewer units of increasingly high-tech equipment. For the Army, the much-delayed Morpheus programme is the 'digital nervous system' which is intended to allow its future (and upgraded) armoured vehicles and related platforms to communicate effectively, on a potentially high-intensity electronic, as well as physical, battlefield. The existing Bowman system is now growing old and may, in a few years be rendered insecure by advances in offensive cyber/cryptographic technology. The Committee was disappointed about the lack of progress on this highly expensive and vital component of the Defence Digital portfolio. The faltering Morpheus programme must now be 'gripped' and put firmly back on track, as a matter of urgency.

45 [TDS0004](#)

46 Q 71

47 Qq 70–71

48 Qq 22, 72–74

49 Q 75

50 Q 4

51 Q 71

52 Q 97

53 Qq 50, 71

54 Q 95

3 Funding and data

Sustainability of funding

18. The NAO reported that the Department's digital strategy was initially not fully funded, but the Department worked to identify ways to fund the strategy as well as reprioritise money to ensure that, as of its last budgeting cycle, it considered its strategy affordable.⁵⁵ We put it to the Department that the impact of rising inflation means it can afford less with its existing budget. The Department explained that it was seeing cost pressures on pay settlements and raw materials both internally and in industry. As a result, it will be difficult to do all of its planned activity for the next financial year in full.⁵⁶ However, the Department felt the longer-term trend for its spending will depend on the outcome of the refreshed Integrated Review in 2023.⁵⁷ Given the severe pressure we feel the Department's budget is under, we expressed concern that the money it has committed to digital might be subject to change. The Department reassured us that it can live within its means for the remainder of the current financial year and highlighted that digital transformation is the single top priority for senior leadership, who will want to protect the funding for it.⁵⁸

19. The Department told us government sees digital technology as a way it can make services more affordable and that the Integrated Review in 2023 will inevitably focus on this.⁵⁹ The Department hopes to use digital technology to transform how it runs itself and the Armed Forces, and has already assumed in its planning that it will achieve productivity improvements and cash savings.⁶⁰ The NAO reported that the Department's plans include a target to find £1.4 billion of cash from efficiency savings between 2023–24 and 2032–33, including £695 million from better supplier management. The Department appears to be on-track with this so far, but still needs to find £160 million more to meet its target.⁶¹ We asked the Department if it was realistic to find this much money through efficiency savings, such as those from better supplier management. The Department was confident that it will achieve its target because there are still economy of scale savings it can make. This is because it has not previously managed suppliers in a coordinated way and so it can increase its commercial leverage, and reduce prices, for example by buying software licences once for the whole Department.⁶²

20. The Department has a substantial legacy technology estate, in part because it has not prioritised the investment needed to keep it up to date.⁶³ Defence Digital, the organisation responsible for leading on the digital strategy, estimates it will cost £11.7 billion over 10 years to remediate just its own legacy systems.⁶⁴ We asked the Department whether it was more cost effective to fix its legacy systems gradually, or simply to start afresh with a different approach. The Department explained that from now on it will ensure its programmes set aside money to keep systems up to date for life and comply with the rules of its future architecture. The Department said it is taking a risk-based approach to

55 Q 23; C&AG's Report para 19

56 Q 11

57 Q 10

58 Q 23

59 Q 43

60 Q 67

61 Q 93; C&AG's Report, paras 3.5–3.6

62 Qq 93–94; C&AG's Report, para 3.6

63 Q 45

64 Q 47; C&AG's Report, para 11

upgrading the legacy systems it already has and considers factors such as vulnerability to cyber-attack and the value of the data. However, the Department told us it will take time for this approach to result in a healthier, more current technology estate.⁶⁵

Using data for advantage

21. The Department noted that one important challenge in the war in Ukraine is that not all of the various donated western equipment systems can be easily connected or exchange data. The Department told us that integrating different systems in different locations, quickly enough to keep up with the pace of technological innovation, is a challenge that all militaries now face.⁶⁶ The Department also has to consider that adversaries may be looking to undermine its security or effectiveness, and that using digital technology reliably in a hostile environment brings its own challenges. For example, ships at sea may be regularly disconnected from support systems, delaying updates.⁶⁷ The Department itself increasingly aims to join up military operations across land, air, sea, space and cyber, as well as work more closely with the rest of government, academia, industry and international partners.⁶⁸ To do this, the Department describes in its digital strategy how it needs to share data through digital systems that connect to one another securely and easily.⁶⁹

22. The Department is working toward this by developing common standards, technology architecture and ways of working. The NAO reported that the Department has set up its governance and controls well, but ensuring compliance with these common standards and approaches across the Department is a substantial task and at an early stage.⁷⁰ The Department told us it is pleased with the progress it is making and that a network of chief information officers, working to common standards, should have the effect it wants across the devolved model of Defence.⁷¹ The Department estimated that currently around 80% of its effort goes on these basic enablers that it needs to put in place.⁷² For example, the Department told us it is now cataloguing all its data and who is steward of that data.⁷³ By 2025, the Department wants to have fixed these ‘enablers’, so that it can instead put 80% of its effort into using the data for advantage.⁷⁴ We asked the Department for an example of what this meant. The Department spoke about its ‘R2D2’ programme, which aims to bring datasets together so that military planners can understand the readiness of the Armed Forces at the push of a button.⁷⁵

23. We asked the Department what it was doing to work more closely domestically and with international partners, such as NATO.⁷⁶ The Department is creating shared architectures to help it work more closely and share data securely with other parts of government, including at higher security classifications, and explained that the COVID-19 pandemic

65 Qq 45–46

66 Q 12

67 Qq 95–96; C&AG’s Report, para 12; [TDS0004](#)

68 C&AG’s Report, para 10

69 Ministry of Defence, *digital strategy for Defence: Delivering the backbone and unleashing the power of Defence’s data*, April 2021

70 C&AG’s Report, para 15

71 Q 20

72 Q 18

73 Q 52

74 Q 18

75 Qq 53–55

76 Qq 34–44

sped up the use of collaboration software.⁷⁷ We wanted to know what discussions the Ministry of Defence has with other departments about using digital technology to work more closely, and if it has thought about where this might be most important, such as in crisis response.⁷⁸ The Department felt that the technology to respond in a coordinated way to a domestic crisis exists now, but policy and seniors across government need to come together to solve those problems.⁷⁹ The Department pointed to how it is taking part in the Cabinet Office's central digital strategy and its digital and data board, which is bringing government together.⁸⁰ Internationally, the Department told us it wants to take part in emerging conversations within NATO about data interoperability and common architectures.⁸¹

77 Q 34; Ministry of Defence, *digital strategy for Defence: Delivering the backbone and unleashing the power of Defence's data*, April 2021

78 Qq 34–36, 41–43

79 Q 36

80 Q 42

81 Q 35

Formal minutes

Thursday 26 January 2023

Members present:

Dame Meg Hillier

Olivia Blake

Dan Carden

Mr Jonathan Djanogly

Mr Mark Francois

Peter Grant

Anne Marie Morris

Sarah Olney

The Defence digital strategy

Draft Report (*The Defence digital strategy*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 23 read and agreed to.

Summary agreed to.

Introduction agreed to.

Conclusions and recommendations agreed to.

Resolved, That the Report be the Thirty-sixth of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

Adjournment

Adjourned till Monday 30 January at 3:00pm

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the [inquiry publications page](#) of the Committee's website.

Monday 14 November 2022

David Williams CB, Permanent Secretary, Ministry of Defence; **Laurence Lee CMG**, Second Permanent Secretary, MoD; **Charlie Forte**, Chief Information Officer, MoD; **Lieutenant General Tom Copinger-Symes CBE**, Deputy Commander, UK Strategic Command

[Q1-98](#)

Published written evidence

The following written evidence was received and can be viewed on the [inquiry publications page](#) of the Committee's website.

TDS numbers are generated by the evidence processing system and so may not be complete.

- 1 BAE Systems ([TDS0004](#))

List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the [publications page](#) of the Committee's website.

Session 2022–23

Number	Title	Reference
1st	Department for Business, Energy & Industrial Strategy Annual Report and Accounts 2020–21	HC 59
2nd	Lessons from implementing IR35 reforms	HC 60
3rd	The future of the Advanced Gas-cooled Reactors	HC 118
4th	Use of evaluation and modelling in government	HC 254
5th	Local economic growth	HC 252
6th	Department of Health and Social Care 2020–21 Annual Report and Accounts	HC 253
7th	Armoured Vehicles: the Ajax programme	HC 259
8th	Financial sustainability of the higher education sector in England	HC 257
9th	Child Maintenance	HC 255
10th	Restoration and Renewal of Parliament	HC 49
11th	The rollout of the COVID-19 vaccine programme in England	HC 258
12th	Management of PPE contracts	HC 260
13th	Secure training centres and secure schools	HC 30
14th	Investigation into the British Steel Pension Scheme	HC 251
15th	The Police Uplift Programme	HC 261
16th	Managing cross-border travel during the COVID-19 pandemic	HC 29
17th	Government's contracts with Radox Laboratories Ltd	HC 28
18th	Government actions to combat waste crime	HC 33
19th	Regulating after EU Exit	HC 32
20th	Whole of Government Accounts 2019–20	HC 31
21st	Transforming electronic monitoring services	HC 34
22nd	Tackling local air quality breaches	HC 37
23rd	Measuring and reporting public sector greenhouse gas emissions	HC 39
24th	Redevelopment of Defra's animal health infrastructure	HC 42
25th	Regulation of energy suppliers	HC 41
26th	The Department for Work and Pensions' Accounts 2021–22 – Fraud and error in the benefits system	HC 44
27th	Evaluating innovation projects in children's social care	HC 38

Number	Title	Reference
28th	Improving the Accounting Officer Assessment process	HC 43
29th	The Affordable Homes Programme since 2015	HC 684
30th	Developing workforce skills for a strong economy	HC 685
31st	Managing central government property	HC 48
32nd	Grassroots participation in sport and physical activity	HC 46
33rd	HMRC performance in 2021–22	HC 686
34th	The Creation of the UK Infrastructure Bank	HC 45
1st Special Report	Sixth Annual Report of the Chair of the Committee of Public Accounts	HC 50

Session 2021–22

Number	Title	Reference
1st	Low emission cars	HC 186
2nd	BBC strategic financial management	HC 187
3rd	COVID-19: Support for children's education	HC 240
4th	COVID-19: Local government finance	HC 239
5th	COVID-19: Government Support for Charities	HC 250
6th	Public Sector Pensions	HC 289
7th	Adult Social Care Markets	HC 252
8th	COVID 19: Culture Recovery Fund	HC 340
9th	Fraud and Error	HC 253
10th	Overview of the English rail system	HC 170
11th	Local auditor reporting on local government in England	HC 171
12th	COVID 19: Cost Tracker Update	HC 173
13th	Initial lessons from the government's response to the COVID-19 pandemic	HC 175
14th	Windrush Compensation Scheme	HC 174
15th	DWP Employment support	HC 177
16th	Principles of effective regulation	HC 176
17th	High Speed 2: Progress at Summer 2021	HC 329
18th	Government's delivery through arm's-length bodies	HC 181
19th	Protecting consumers from unsafe products	HC 180
20th	Optimising the defence estate	HC 179
21st	School Funding	HC 183
22nd	Improving the performance of major defence equipment contracts	HC 185
23rd	Test and Trace update	HC 182

Number	Title	Reference
24th	Crossrail: A progress update	HC 184
25th	The Department for Work and Pensions' Accounts 2020–21 – Fraud and error in the benefits system	HC 633
26th	Lessons from Greensill Capital: accreditation to business support schemes	HC 169
27th	Green Homes Grant Voucher Scheme	HC 635
28th	Efficiency in government	HC 636
29th	The National Law Enforcement Data Programme	HC 638
30th	Challenges in implementing digital change	HC 637
31st	Environmental Land Management Scheme	HC 639
32nd	Delivering gigabitcapable broadband	HC 743
33rd	Underpayments of the State Pension	HC 654
34th	Local Government Finance System: Overview and Challenges	HC 646
35th	The pharmacy early payment and salary advance schemes in the NHS	HC 745
36th	EU Exit: UK Border post transition	HC 746
37th	HMRC Performance in 2020–21	HC 641
38th	COVID-19 cost tracker update	HC 640
39th	DWP Employment Support: Kickstart Scheme	HC 655
40th	Excess votes 2020–21: Serious Fraud Office	HC 1099
41st	Achieving Net Zero: Follow up	HC 642
42nd	Financial sustainability of schools in England	HC 650
43rd	Reducing the backlog in criminal courts	HC 643
44th	NHS backlogs and waiting times in England	HC 747
45th	Progress with trade negotiations	HC 993
46th	Government preparedness for the COVID-19 pandemic: lessons for government on risk	HC 952
47th	Academies Sector Annual Report and Accounts 2019/20	HC 994
48th	HMRC's management of tax debt	HC 953
49th	Regulation of private renting	HC 996
50th	Bounce Back Loans Scheme: Follow-up	HC 951
51st	Improving outcomes for women in the criminal justice system	HC 997
52nd	Ministry of Defence Equipment Plan 2021–31	HC 1164
1st Special Report	Fifth Annual Report of the Chair of the Committee of Public Accounts	HC 222

Session 2019–21

Number	Title	Reference
1st	Support for children with special educational needs and disabilities	HC 85
2nd	Defence Nuclear Infrastructure	HC 86
3rd	High Speed 2: Spring 2020 Update	HC 84
4th	EU Exit: Get ready for Brexit Campaign	HC 131
5th	University technical colleges	HC 87
6th	Excess votes 2018–19	HC 243
7th	Gambling regulation: problem gambling and protecting vulnerable people	HC 134
8th	NHS capital expenditure and financial management	HC 344
9th	Water supply and demand management	HC 378
10th	Defence capability and the Equipment Plan	HC 247
11th	Local authority investment in commercial property	HC 312
12th	Management of tax reliefs	HC 379
13th	Whole of Government Response to COVID-19	HC 404
14th	Readying the NHS and social care for the COVID-19 peak	HC 405
15th	Improving the prison estate	HC 244
16th	Progress in remediating dangerous cladding	HC 406
17th	Immigration enforcement	HC 407
18th	NHS nursing workforce	HC 408
19th	Restoration and renewal of the Palace of Westminster	HC 549
20th	Tackling the tax gap	HC 650
21st	Government support for UK exporters	HC 679
22nd	Digital transformation in the NHS	HC 680
23rd	Delivering carrier strike	HC 684
24th	Selecting towns for the Towns Fund	HC 651
25th	Asylum accommodation and support transformation programme	HC 683
26th	Department of Work and Pensions Accounts 2019–20	HC 681
27th	Covid-19: Supply of ventilators	HC 685
28th	The Nuclear Decommissioning Authority's management of the Magnox contract	HC 653
29th	Whitehall preparations for EU Exit	HC 682
30th	The production and distribution of cash	HC 654
31st	Starter Homes	HC 88
32nd	Specialist Skills in the civil service	HC 686
33rd	Covid-19: Bounce Back Loan Scheme	HC 687

Number	Title	Reference
34th	Covid-19: Support for jobs	HC 920
35th	Improving Broadband	HC 688
36th	HMRC performance 2019–20	HC 690
37th	Whole of Government Accounts 2018–19	HC 655
38th	Managing colleges' financial sustainability	HC 692
39th	Lessons from major projects and programmes	HC 694
40th	Achieving government's long-term environmental goals	HC 927
41st	COVID 19: the free school meals voucher scheme	HC 689
42nd	COVID-19: Government procurement and supply of Personal Protective Equipment	HC 928
43rd	COVID-19: Planning for a vaccine Part 1	HC 930
44th	Excess Votes 2019–20	HC 1205
45th	Managing flood risk	HC 931
46th	Achieving Net Zero	HC 935
47th	COVID-19: Test, track and trace (part 1)	HC 932
48th	Digital Services at the Border	HC 936
49th	COVID-19: housing people sleeping rough	HC 934
50th	Defence Equipment Plan 2020–2030	HC 693
51st	Managing the expiry of PFI contracts	HC 1114
52nd	Key challenges facing the Ministry of Justice	HC 1190
53rd	Covid 19: supporting the vulnerable during lockdown	HC 938
54th	Improving single living accommodation for service personnel	HC 940
55th	Environmental tax measures	HC 937
56th	Industrial Strategy Challenge Fund	HC 941