Data Futures: Independent Review

FINAL

Office for Students (OfS)

January 2025

pwc

To ensure that the recipient ("you") has a clear understanding of the terms under which this Report is being provided please read the following terms.

We confirm that we give our consent to you accessing the Report on the clear understanding that the Report was addressed to Office for Students ("OFS") and was prepared on their instructions as set out in our agreement dated 4th June 2024 and therefore the Report will not address or reflect the interests or circumstances of the recipient or any other third party. Furthermore, we accept no duty or responsibility and deny any liability to the recipient or to any other third party in relation to Data Futures or otherwise, whether or not the Report influences the decision or action of the recipient or any other party.

Receipt of the Report should not be a substitute for enquiries the recipient should undertake for its own purposes and any independent advice it should obtain. You will be bound by a duty of confidentiality to PricewaterhouseCoopers LLP, as well as to OFS, and that in respect of any Personal Data in the Report, you are required to comply with the Data Protection Act 1998. Consequently, the Report, and information obtained from it, must not be made available or copied, in whole or in part to any other person without our prior written permission which we may, at our discretion, grant, withhold or grant subject to conditions (including conditions as to legal responsibility or absence thereof).

Where disclosure of the Report or information contained in the Report is required by law or regulation, the recipient should i) ensure that a copy of these terms is disclosed with such information so that the other party receiving the information is on written notice of the terms on which the recipient itself had access to it; and ii) where legally permissible inform us promptly of the specific requirement to disclose and before making any disclosure.

This letter shall be governed and construed in accordance with the laws of England. The Courts of England and Wales will have exclusive jurisdiction to settle any claim, dispute or difference which may arise out of or in connection with this letter.

Yours faithfully

PricewaterhouseCoopers LLP

Contents

Executive Summary

Background

1. Context

The Data Futures Programme set out to streamline and modernise the collection of student data by funders and regulators from higher education (HE) institutions. This was intended to be a critical change to enable improved data quality, reduce administrative burden, enhance data transparency and support the Office for Students (OfS), the Scottish Funding Council (SFC), the Commission for Tertiary Education and Research for Wales (Medr) and the Department for the Economy (Northern Ireland) to fund and regulate the higher education sector effectively. The Data Futures Programme (unlike some comparable data reporting changes in HE sectors in other countries in recent years) includes the introduction of both a new data model and a new data platform concurrently. The governance structure around management of the Data Futures Programme is given on page 28.

2. Scope of the data collection

For many years, a broad range of data has been collected by funders and regulators on HE institutions, including (previously, through the 'HESA Student Record' return and the 'Alternative Provider' return) a data submission to the Higher Education Statistics Agency (HESA) from UK-based higher education institutions providing information about an institution's students, covering: students' personal characteristics, place of study, courses and modules, entry qualifications, socio-economic background, progression through HE and qualifications received, amongst other things. Up to 202 data points are submitted in relation to each student registered at a reporting institution who is attending a course that leads to the award of a higher education qualification or higher education-level credit. Several of the data points collected and generated exist solely to satisfy the needs of funding and regulation, and generating these data points adds a significant level of complexity and resource to the work of generating a valid data return.

3. The Data Futures Programme

The genesis of 'Data Futures' is found in a government white paper in 2011. The Data Futures Programme started delivery in 2017, seeking to modernise the reporting of student data across the UK Higher Education sector, replacing the HESA Student Record. Initial alpha and beta pilots took place in 2018 and 2019. In late 2019, Jisc (a UK digital, data and technology agency focused on tertiary education, research and innovation) was brought into the programme, supporting HESA and, in time, merging with them, including funding the Programme following the temporary withdrawal of funding from the OfS. Following Jisc entry into the project, further alpha and beta pilots were undertaken in 2021 and 2022 respectively under a substantially changed data model. The HESA Data Platform (HDP) - the portal which institutions use to submit their datasets to Jisc - went live in March 2023, with institutions required to complete two interim submissions in May and August, followed a full submission scheduled for October 2023. In practice, the Statutory Customers (the Office for Students, Scottish Funding Council, Higher Education Funding Council for Wales and Department of Education - Northern Ireland), via the Data Futures Programme Board, extended deadlines for data submission, as a result of the majority of institutions experiencing significant difficulties in delivering a valid return on time due to a combination of factors, examined later in this report. These delays in submission and the challenges experienced by institutions led to the decision in November 2023 to commission this report. A more detailed timeline of the programme's history and recent events is given from page 6.

Background

Scope of work

4. The scope of this independent review was to consider the Data Futures Programme up to and including the 2022/23 data collection, which was concluded in April 2024. This included exploring the:

    - Programme rationale, roadmap outcomes and benefits
    - Programme organisation and stakeholder relationships
    - Programme governance including:
        - funding methodology
        - previous assurance
        - sector consultations, requirements, changes, and objectives
        - approvals and timely decision making
        - the tools used to monitor the programme (minimal viable product delivery, skills, resources), evaluate plans, budget, timelines and manage risks and issues and dependencies including external factors.

    Research questions set for the review are listed in Appendix A.

5. In order to meet the requirements of this scope, in addition to documentation review a number of workshops were conducted with the programme delivery team and interviews held with stakeholders. Workshops and interviews were held with the following stakeholders during July and August 2024:

    - Jisc/HESA (henceforth referred to as 'Jisc') - A series of workshops and discussions were undertaken with the Jisc team.
    - Statutory Customers - Discussions were held with the Statutory Customers: the Office for Students (OfS), the Scottish Funding Council, the Commission for Tertiary Education and Research and the Department for the Economy (Northern Ireland).
    - Sector bodies - Interviews and workshops were held with representatives from: the Student Records Officers' Conference (SROC); the Higher Education Strategic Planners Association (HESPA), the Universities and Colleges Information Systems Association (UCISA); the Association of Heads of University Administration (AHUA); the Academic Registrars Council (ARC); the Scottish Planners Forum; Universities UK; GuildHE; Independent HE; and the Welsh Student Returns Group.
    - Student records system providers - We met with representatives from across the Jisc supplier user group including six student records system providers and four institutions with in-house student records systems.
    - Institutions - In addition to the organisations referred to above, many of whom were individuals who work in institutions in the sector, we also met with representatives from 13 institutions across the four nations - a sample designed to incorporate a variety of institutions by type and size of institution and whether they were involved in the alpha and beta pilots (a list of all organisations interviewed is given in Appendix C).

Throughout this independent review, findings have been reported to a Steering Group with representation from each of the Statutory Customers and several of the sector bodies listed above (Appendix D provides a list of members of this Steering Group).

Timeline

2011 The Department of Business, Innovation & Skills published a white paper which asked the sector to redesign the information landscape for higher education in order to arrive at a new system that would meet the needs of a broader group of users, reduce duplication that existed, and result in timelier and more relevant data.

2016 Following this, the Higher Education Data and Information Improvement Programme (or HEDIIP) ran from 2013 to 2016, before being succeeded (having delivered other areas of its scope) by the Data Futures Programme, which began in 2016 and Civica were subsequently contracted by HESA as the technical delivery partner for the programme, with in-year collection initially scheduled for rollout in 2019/20.

Jan 2018 Limited alpha phase testing began in January 2018 with 14 providers. Beta opened in February 2019 but engagement dropped following the March 2019 decision to delay implementation and change the collection approach. A number of institutions committed resource to development under the existing data model prior to this point.

April 2018 The Higher Education Funding Council for England (HEFCE) ceases to exist and the Office for Students (OfS) takes over their role in respect of regulation and Data Futures in England.

Dec 2018 In December 2018, the OfS commissioned a review of the Data Futures programme, by BDO, with the report produced in February 2019.

Mar 2019 By March 2019, it became clear to the Data Futures Programme Board that in-year collection in 2019/20 was not achievable, primarily due to technical challenges, as well as supplier/provider readiness concerns, leading to a decision by the HESA Board to pause programme delivery, effectively delaying the implementation and in-year data collection to 2021/22. In September 2019, the Office for Students (OfS) responded by suspending Data Futures grants to HESA until a satisfactory way forward was found.

Nov 2019 In November 2019, the OfS requested HESA and Jisc develop a Joint Delivery Proposal, which saw Jisc take over the role of Data Futures' technical delivery partner from Civica in March 2020.

Mar 2020 OfS rejected the initial Joint Delivery Proposal due to concerns about costs and value for money, delaying development. In March, the OfS Board partially funded HESA and Jisc until September, opting to reassess the entire project thereafter.

Covid-19 outbreak declared a pandemic by the World Health Organisation with widespread impact on sector bodies, including dramatically increased demand and competition for IT support and resources.

Timeline

Sep 2020

In September 2020, the Department for Education published a policy paper on reducing bureaucratic burdens in research, innovation and higher education. This paper supported the Data Futures Programme, recognising the potential to reduce burdens through consolidated data collection and improved infrastructure. However, it also highlighted concerns about the significant burdens that could arise from moving from annual to termly data collection, leading to the OfS beginning its 'Burden Review'.

Joint Delivery Proposal agreed by Statutory Customers, confirming the current, funded scope of the Data Futures programme.

Dec 2020

In December, the Quarterly Review Group agreed that until clarity on a new direction was made clear, the programme could only continue with its current delivery rather than progressing to in-year collection.

Mar 2021

In response to delays to the Burden Review outcomes, Jisc recommended commencing with annual data collection under the Data Futures data model for all nations, with a plan to move to in-year collection with two years' notice. This go/no go decision necessarily came prior to Alpha testing and was approved by the Statutory Customers and the Data Futures Programme Board in March 2021, and supported by the Quarterly Review Group, with no option to revert to legacy after that.

May 2021

A new Alpha testing phase began May 2021.

Dec 2021

In December 2021, the OfS issued a consultation seeking views from institutions on the approach to the collection of in-year individualised student data as part of the Data Futures Programme.

Feb 2022

Beta Testing Release 1 started in February 2022.

Mar 2022

In March 2022, Jisc assessed options for in-year data collection for 2023/24 and 2024/25, concluding that 2023/24 collection was at a 'high risk' of being unsuccessful given a high-risk critical path and resource challenges. This was partly due to lack of notice for providers and software suppliers given the late outcomes of the Burden Review.

May 2022

The OfS published part one of the consultation outcomes in May 2022, deciding to implement the Data Futures data model as planned for 2022/23 with year-end collection of student data rather than in-year data collection. In-year data collection was delayed until 2024/25, with a change from three reference periods to two reference periods.

Oct 2022

Three subsequent HESA Data Platform (HDP) Beta Releases occurred in May, August, and October 2022. HESA and Jisc merged (henceforth 'Jisc') in October 2022, during which time Jisc made a significant contribution to the programme's funding, enabling continued development.

Timeline

Nov 2022

In November 2022, the OfS released a statement regarding parts two and three of the Burden Review consultation, deciding not to make a final decision at that time in regards to changes to data collection, and use of third-party data, due to a concern that decisions "would need to be revisited in the short and medium term". Programme Beta testing finished by the end of November. This necessitated a subsequent coding manual update, requiring data model changes followed the end of Beta testing.

In November 2022 the results of the independent assurance review commissioned by the OfS in September 2022 were produced.

Mar 2023

On March 31, 2023, the HESA Data Platform went live to collect annual data for the year 2022/2023, with two interim submission deadlines. The May interim submission deadline was the 31st of May 2023, and an August interim submission deadline of the 18th of August 2023. Final submission deadline was 13th of October 2023 and the sign-off deadline was the 20th of October 2023.

May 2023

86% of HE institutions met the conditions of the interim submission deadline by the 31st of May 2023.

Aug 2023

On the 25th of August 2023, the Data Futures Programme Board supported Jisc's recommendation for a 2 week extension to the October final submission and sign-off deadlines. The Statutory Customers subsequently agreed to this extension following the relevant decision-making processes. The new deadlines were 27th of October for final submission, and the 3rd of November for sign-off.

Oct 2023

On the 13th of October 2023, the deadlines were further delayed. The final submission deadline was delayed one week to the 3rd of November 2023, and the sign-off deadline was delayed by 3 weeks to the 22nd of November 2023.

Jan 2024

Extensions were given on a case by case basis, with a final sign-off deadline of the 12th of January 2024.

Apr 2024

30th April 2024 was the final date for resubmissions that would be used in Jisc publications and onward uses of the data, required by the Statutory Customers in relation to 30 providers due to ongoing data quality issues.

Conclusions

Overall Conclusions

6. The Data Futures Programme, as initially conceived, set out to achieve the following outcomes:

    a. Timely data collection, analysis and dissemination of HE data, delivering data three times a year to Statutory Customers in a secure and data protection compliant manner.
    b. Improved institution experience with reduced relative burden of each submission through a more automated, efficient and timely QA process on a significantly more performant solution, with less lag and context switching for institutions, and less manual effort for HESA.
    c. An agreed unified collection specification that has regard to minimising the relative burden of three student data collections a year.
    d. Delivery of data that has greater utility and is fit for purpose.
    e. Provision of a data model and HDP that are better able to support the needs of the evolving regulatory framework and leaves avenues open for future exploitation.
    f. Reduced manual effort to deliver in-year data collection and reduced operational costs post implementation.
    g. Delivery of effective guidance and support for HE institution data submissions.
    h. Development of a data collection HDP that will support the transition of other collections to enable replacement of HESA's existing systems over time.

7. Whilst all of these outcomes would still be valuable goals for the sector and the Statutory Customers, in the eight years since the programme began in 2016, the substantial majority of these outcomes have not been achieved in full.

8. Whilst in-year collection has not yet been delivered, the scope of the funded programme as agreed in 2020 is largely completed. The Data Futures Platform has been upgraded to reduce support costs, address known security vulnerabilities, be scalable and support in-year data collection. It will remain viable for the scope of the Data Futures programme whilst it is maintained and emerging security issues are resolved. The platform's longevity will depend on the programme's future strategic objectives. The programme has also designed and delivered a new data model and unified data collection specification, drawing together the two previous student returns into a single collection, enabling the ongoing collection of student data on an annual basis. Extensive guidance has been produced to support institutions.

9. In practice however, despite a significant amount of work by all of the organisations involved in the process, the 2022/23 annual collection cycle was characterised by: delays to data collection; a significant increase in the burden attached to data collection; less efficient quality assurance processes; an increased reliance on manual processes to deliver the return within institutions; ongoing changes to, and a lack of clarity over, the data model; significant numbers of bugs generating additional workload for Jisc, Statutory Customers, student records system providers and institutions; breakdowns in communication and, unfortunately, a very significant negative impact on the welfare of staff involved in the delivery of the programme within all parts of the system.

Conclusions

Overall Conclusions (continued)

10. Whilst 171 (58%) institutions were able to submit a valid return in line with the extended deadline of 22nd November 2023, 55 (19%) submitted late between 23rd November and 6th December and a further 70 (24%) institutions submitted their returns between 7th December and 12th January 2024. 30 providers continued to make updates to their submissions until 30th April 2024, as a result of data quality issues identified by the Statutory Customers. This has led to subsequent delays in the release of data to Statutory Customers and other users of the data. A number of factors have contributed to this outcome.

Conclusions

Summary of Findings

11. Governance

Our work has highlighted a number of ways in which the Data Futures governance structure was unable to deliver effectively, as a result of a lack of clarity of members' roles, optimism bias in reporting and a lack of challenge regarding key risks and actions. Whilst the benefits of the programme were articulated in the first instance, and some updates to benefits tracking have occurred, the Jisc team delivering the Data Futures Programme (henceforth the 'programme team') have not systematically tracked benefits in line with good practice - and there is a lack of confidence from stakeholders as to the programme's ability to deliver upon the benefits it first articulated. It is important to draw a distinction between the delivery of the Data Futures Programme as scoped in 2020 and the wider expectations set by the initial vision for the programme, many of the benefits of which could not be expected to be delivered by the first year of in-year data collection under the new data model.

Whilst a budget for ongoing assurance and a role for an independent advisor to the Programme Board were set out, neither of these functions have been used to the extent expected for a programme of the complexity and breadth of stakeholders of the Data Futures Programme. Consequently, the OfS made a decision to commission and fund assurance via an independent review of the Data Futures programme from KPMG in Autumn 2022, focusing on the "governance, programme management, change management, performance management, people, process and technology domains". Communications surrounding the programme, from all stakeholders, have been marred by a lack of transparency, with institutions looking for greater clarity from Jisc and also overstating their own position in readiness surveys as a result, in England in particular, of institutional nervousness regarding the OfS' approach to negative reports.

12. Sector Readiness

Institutions are autonomous bodies, each with their own processes, systems and structures. In many institutions, data collection remains an inefficient process, with information received by the institution as part of admissions or enrollment processes needing to continue to be cleansed and validated throughout the full academic year as a result of data collection processes which generate poorly structured data and internal data collection requirements which do not align neatly to the data model used in statutory data reporting. These data quality issues remain a significant risk associated with in-year data collection, but are also ongoing challenges for institutions in respect of annual data collection. These long-standing underlying data quality challenges pre-date the Data Futures Programme, but remain a significant factor in institutions' ability to return data on a timely basis. Broadly, the sector's student records systems, including those provided by the main student record system providers, are aging tools built on legacy technologies and data architecture, with extensive personalisations within individual institutions. This makes the sector less adaptable to change in this space, with substantial changes being costly, resource intensive and carrying a higher likelihood of error. Materially reducing the administrative burden associated with data collection and reporting, rather than relying extensively on individuals with specialist skills and knowledge, requires institutions and student record systems providers to make substantial investments, and senior leaders within institutions should ensure that institutions have the data capability and tools required.

Conclusions

Summary of Findings (continued)

12. Sector Readiness (continued)

It is clear that delivery of the 2022/23 data collection exercise, the first under the Data Futures framework, required a very substantial increase in the time committed by institutional data teams to the data collection exercise relative to previous years - and that there are insufficient individuals with the relevant skills available to fill these gaps. Many of the institutions we spoke to reporting both extensive overtime and weekend working within their teams, and challenges in recruitment to fill capacity gaps. Many of the institutions we spoke to indicated that members of their team had chosen to move into other roles at the institution, leave the sector all together, went on long term sickness absence or retired early as a result of their experiences, and whilst difficult to quantify, this will have a medium-term impact on the sector's capabilities in this area as replacing this expertise will not be achievable overnight.

Like institutions, there is variation in the extent to which student records system providers invested in the Data Futures programme prior to 2022/23. It is also clear that where updates to the data specification or the HESA Data Platform (HDP) required student records system updates during 2022/23, there was insufficient time available for providers to implement and test changes appropriately due to the short timetable available for wider submission. There is a gap between the readiness and successfulness of student records systems in delivering the Data Futures Programme as perceived by the student records system providers and the institutions using those student records systems. Generally, system providers indicated that their solutions were robust and able to produce valid returns, whilst institutions felt frustrated by the extent to which their student records systems' capabilities lagged the current version of the data model and HDP.

13. Delivery of the programme

Jisc took on the role of the Data Futures technical delivery partner in late 2019, with the OfS agreeing funding for Jisc to continue in March 2020, following a January to March gap in funding. Alongside other organisations both in the sector and beyond, during this period at the start of the first lockdown of the COVID-19 pandemic, Jisc suffered substantial challenges in recruiting and retaining suitably experienced and capable software developers and data professionals to support the early stages of delivery. The programme delivery team ran with significant numbers of vacancies, causing delays in the delivery of vital development work. One such vacancy for a substantial period of time (though this is no longer the case) was the absence of a permanent testing lead. The extended development window, gaps in Test Lead capacity and lack of realistic large scale data to support more extensive testing had a negative impact on the experience and burden for institutions.

Conclusions

Summary of Findings (continued)

14. Changing requirements

The expected model for data collection under the Data Futures Programme has changed repeatedly and extensively, with ongoing changes over several years on the detail of the data model as well as the nature of collection and the planned number of in-year collections. Prior to 2020, these changes were driven by challenges with the initial implementation. The initial data model developed was changed substantially due to technical challenges after a number of institutions had expended significant time and resource working to develop and implement it. Since 2020, these changes were made to reflect evolving requirements of the return from Statutory Customers, ongoing enhancements to the data model and data specification and significantly, the ongoing development of quality rules and necessary technical changes determined as a result of bugs identified after the return had 'gone live'. These changes have caused substantial challenges to delivery of the Data Futures Programme - specifically reducing sector confidence and engagement as well as resulting in a compressed timeline for software development. These changes required ongoing development work and associated testing to be completed by Jisc, before being implemented by institutions and student records system providers in their data reporting. These ongoing changes occurring during the 'go live' period, leaving limited time for testing, and the new data model itself being a change from the previous year, meant that a large number of issues were only identified whilst the data collection exercise was live. This lead to many institutions dealing with both a dramatically increased volume of errors relative to the prior year, leading in turn to significant increases in workload and delivery issues across the sector. It was difficult for institutions to know whether the errors were errors in their own underlying data, in the data manipulation required to deliver the return, in the changes implemented by their student records system provider or false negatives introduced by errors in Jisc quality rules.

Conclusions

Next Steps

15. A key factor for the future of the Data Futures Programme is in-year data collection. This has not been delivered by the programme to date, and was removed from the immediate scope of the programme following the Burden Review. There remains a substantial step-change to be made between the current state of the sector's data collection capability and approach, and in-year collection. A key question is whether in-year collection is necessary in order for the overall benefits of the programme to be realised. Our interviews with the Scottish Funding Council in particular highlighted that, in Scotland, funding and other data uses are now predicated on the assumed delivery of in-year data.

16. It is critical for the Statutory Customers and Jisc to deliver certainty around the intent (or lack thereof) to deliver an in-year data collection; the nature of such a collection (most notably whether in-year collections would be discrete datasets or cumulative collections, updated as part of future submissions); and the timeframe for delivering such a collection as soon as possible. It is not for this review to answer these questions and to determine the regulatory and funding needs.

17. As a priority, following completion of the 2023/24 data collection, the Statutory Customers (with the help of Jisc) should revisit the initial statement of benefits expected to be derived from the programme, in order to ascertain whether a move to in-year data collection is a critical dependent in order to deliver on the benefits of the Data Futures programme. Following this, the Statutory Customers should consider undertaking a cost-benefit-burden analysis, reassessing the value of in-year collection and determining whether or when to pursue in-year collection.

18. If the conclusion is that in-year data collection is no longer pivotal to the Data Futures Programme, although there is still some development and testing work to be completed, the Data Futures Programme will most likely be able to move into business as usual following the 2024/25 collection.

19. If the conclusion is to progress with in-year data collection, the move to in-year collection should be characterised by:
    - A freeze to the requirements of the HDP and Data Model for a substantial period in advance of collection (ideally 18 months);
    - A collaborative and transparent approach to communication from all stakeholders; and
    - Greater clarity and assurance mechanisms supporting programme governance.

20. The next section of this report sets out review findings in more detail and further recommendations for any ongoing in-year collection. .

Independent Review Findings

Independent Review Findings

1. Benefits of the Data Futures Programme

Benefit Realisation

21. At a high level, the vision of Data Futures Programme is to:

- Deliver an adaptable HESA Data Platform and unified data model for efficient in-year collection, assurance, and dissemination of UK HE data, starting with student data.
- Reduce the transactional burden for HE institutions by aligning data submission more closely with student activity rather than the HESA reporting year.
- Provide high-quality data three times a year for Statutory Customers, enhancing operational efficiencies and supporting timely decision-making for UK HE.

22. This vision is further broken down into 30 benefits outlined within a benefits tracker (and listed in Appendix B) designed to support the Statutory Customers, Jisc, students and institutions. Among the 30 defined benefits, 11 depend on in-year data collection (see finding 2, below). Following the Burden Review, the requirement upon Jisc to deliver in-year data was removed from the Programme and the planned number of in-year data collections dropped from three to two.

23. Whilst Jisc have not undertaken a detailed review of these benefits to assess the extent to which they have been realised since February 2023 (see below), it is clear that at least fifteen of these have not yet been delivered:

- The eight benefits relating to ‘timely data’ have not yet been realised and are contingent on the delivery of in-year data collections;
- The six benefits relating to increased efficiency have yet to be realised given that institutions in general found there was a need to increase resource levels in order to deliver the 2022/23 data collection. Whether the Data Futures data model will enable increased efficiency in future is yet to be seen;
- The only benefit listed as a benefit to students - enhancing student choice - has not yet been realised;
- Institutions and sector bodies are doubtful as to the extent to which (a) the programme stands to ever realise the benefits it initially set out to achieve and (b) the benefits initially set out remain priorities; and
- This lack of confidence has hindered the extent to which institutions are willing to engage with, and invest in, delivering the programme locally.

The Programme scope was reduced following the Burden Review - as scoped at this point the Programme did not anticipate the delivery of some of these benefits until after the time of our fieldwork.

Independent Review Findings

1. Benefits of the Data Futures Programme

Benefit Realisation (continued)

24. Whilst the benefits initially set out remain of potential value to the sector and the Statutory Customers, it is not clear that these benefits:
    - Will actually be delivered by the programme, even under the provision of in-year data; or
    - Are sufficient to justify the investment required to move from the current state to in-year, high quality student data collection because the level of investment required remains unclear.

25. It is essential that the Statutory Customers urgently and collectively reassess the potential benefits of the Data Futures Programme before making any significant additional investment in the delivery of in-year data collection.

Benefits Management

26. Ongoing benefits management is a critical aspect of project delivery that ensures projects not only achieve their intended outcomes but also deliver tangible value to stakeholders. The approach taken by HESA and Jisc to benefits management has not aligned with common good practice.
27. An initial assessment of benefits was undertaken as part of project initiation in 2016, and an initial benefits tracker was developed for use within the project team, with some ad-hoc updates to benefits management documentation during the programme. A formal benefits review process could have ensured that the anticipated advantages of the programme were systematically tracked and measured. Whilst benefits realisation was discussed in some of the Quarterly Review Group meetings and, following the February 2023 Quarterly Review Group meeting, benefits realisation has been added to the Data Collections and Statistics Leadership Team meeting agenda on a quarterly basis, there is no evidence of a consistent formal benefits review process with clear roles and responsibilities, frequency, and method used to consistently review the benefits across the programme delivery period.
28. An update to the benefits tracker was conducted in February 2023, identifying additional benefits (e.g., NSS Process Simplification, leveraging the Reference Data Store for increased efficiency, improvements to Subject Access Requests), the tracker has not been regularly reviewed or maintained. In the current draft, there are ten benefits with incomplete information, and none of the 32 benefits have their realisation status recorded. A benefits review is planned following the recent publication of the first datasets using the Data Futures return.
29. The absence of benefits review and tracking process during the programme delivery has limited the programme's ability to assess the value the programme is delivering over time.

Independent Review Findings

2. In-Year Data Collection

30. The key challenge for the future of the Data Futures Programme remains in-year data collection. The requirement for in-year data collection was removed from the programme's funded scope following the Burden Review and following subsequent decisions to defer, in-year data collection has not been delivered by the programme to date. Whilst there remains a substantial step-change to be made between the current state of the sector's data collection capability and approach and in-year collection (see finding 7 below), the benefits that the sector stood to gain from in-year collection at the start of the programme in 2016 (see the Programme's listed benefits in Appendix B) still remain potentially valuable in 2024. In Scotland, funding and other data uses have evolved during the programme and are now predicated on the assumed delivery of in-year data, meaning that there would also be a cost to not continuing with the plan to deliver in-year data collection.

Timeline for in-year data

31. The expected model for data collection under the Data Futures Programme has changed repeatedly and extensively, with ongoing changes over several years on the detail of the data model, as well as the nature of collection, and the planned number of in-year collections. This has been as a result of changing regulatory and funding requirements, as well as an increasing understanding of the needs of the HDP and data model and substantial concerns about readiness in the programme team, programme governance structure, stakeholders and the sector, exacerbated by delays in the outcome of the Burden Review. A technical solution for delivering in-year data collection will still require substantial further development work.
32. At the start of the Data Futures programme, in-year collection was first scheduled for 2019/20, with pilot exercises to be undertaken in 2018 and 2019. The programme intended for a series of in-year data collection exercises to enable a close-to-'live' picture of the sector, aligned to the sector's existing operating timeline. Data collected would be 'continuous' - in that subsequent returns would update and build upon previously returned data.
33. Following the pilot exercises in 2018 and 2019, the 'go-live' date for both the new data model and in-year data collections was deferred due to technical challenges with the original implementation, and the model was updated to 'discrete' collections - in which each collection stands alone, and data is not re-submitted in subsequent iterations, at three fixed points during the year.
34. In March 2021, the Programme Board's decision, following the Burden Review, determined that annual collection, rather than in-year collection, would commence for all nations during go-live, with a shift to in-year data collection requiring two years' notice.
35. Subsequently - as announced in November 2023 and March 2024, delivery of in-year collections has been deferred at the decision of the Statutory Customers several more times as a result of the challenging nature of the 2022/23 collection cycle. In March 2024, as a result of the challenges experienced in the 2022/23 collection, the Statutory Customers announced that in-year data collections will be undertaken in 2026/27 at the earliest. In September 2024, the Statutory Customers announced that in-year data collection will not be required for 2026/27.

Independent Review Findings

2. In-Year Data Collection

In-year data - credibility and capability

36. The programme team intends to collaborate with institutions and suppliers to reassess in-year data requirements as and when a timeline for in-year collection is established, and Jisc has requested greater clarity from Statutory Customers on this point throughout 2024. However, there are currently significant gaps in readiness for in-year data collection:
    - **Unclear in-year data collection requirements to complete the development**: Whilst the HDP data model has built-in flexibility to accommodate in-year data collection requirements, further changes are expected depending on the yet-to-be-decided discrete or cumulative in-year data collection approach. Quality rules will also need to be updated on the platform to facilitate in-year data collection. There is uncertainty regarding when the requirements will be confirmed between Jisc and Statutory Customers. Currently, uncertainty remains as to whether an in-year collection specification is able to be unified across the UK or requires diverging approaches within the devolved nations.
    - **In-year data collection has not been fully developed or tested**: Although preparatory work done by institutions and software providers has, to some extent, considered in-year data collection, the Alpha and Beta testing carried out by institutions in 2021 and 2022 focused primarily on their ability to submit annual data. Further testing is required, following the finalisation of the data model, to ensure that the data model, HDP and institutions can meet the in-year data collection requirements.
    - **Gaps in institutional readiness to meet in-year data collection requirements:** The undefined in-year data collection requirements hinder institutions' ability to plan effectively and deliver the required changes for in-year data collections. There are significant variances in institutional capability and capacity to deliver an in-year collection. Many institutions' data collection and cleansing processes will require significant modernisation and faster delivery to enable reporting early in the academic year, and this change in timetable will change the time-profile of institutional resourcing needs.
    - **Jisc ability to forecast and budget for implementation resource**: Due to the unclear requirements and timeline for in-year data collection, there is uncertainty regarding the amount of resources and costs needed by Jisc to develop, test and execute business change management for delivering in-year data collection. Similarly, institutions will require additional resources to be allocated to address gaps and meet the in-year data collection requirements for a number of years following implementation.
37. It is critical for the Statutory Customers and Jisc to deliver certainty around the intent (or lack thereof) to deliver an in-year data collection, the nature of such a collection (most notably whether in-year collections would be discrete datasets or cumulative collections, updated as part of future submissions - a decision which is fundamental to the remaining development work required, and which the Statutory Customers must be comfortable with and commit to for a number of years) and the timeframe for delivering such a collection as soon as possible following completion of the 2023/24 data collection in order to enable Jisc and the wider sector to adequately plan for the future.

Independent Review Findings

2. In-Year Data Collection

Future challenges

38. In addition to formalising the requirements and data model for in-year collection, as described above, a major challenge for in-year data collection is the shorter gap between data collection by institutions and collection of this data by Jisc. Currently, institutions complete their annual data submission to Jisc for the previous academic year at the end of October, following several months of intensive work to complete their data return. This means that a subsequent in-year collection - for example the following January - will require substantial work for the same team. As a result, the time frame available for quality assuring, manipulating and submitting the first in-year data collection under an updated data model will be much shorter than has been the case for the first annual return made under the current data model (2022/23). The impact of similar challenges associated with bugs, error identification and management will therefore be even higher for this first in-year data collection than was the case in 2022/23.
39. It is essential that any in-year data collection is rolled-out in a way which minimises the risk of further ongoing errors. One way to do this could be to initially roll-out with a subset of the sector.

Independent Review Findings

3. Ongoing Changes to the Data Specification

40. Within the 2022/23 academic year, in the lead up to the first collection under the new data model, changes to the model being used continued to be made, with eight sets of updates to the data specification published during the 2022/23 collection period. The final data specification revision was published on 17th August 2023, after the end of the academic year the collection related to and incorporating updates in 32 separate elements of the return or its associated guidance. Whilst Jisc froze any updates which would necessarily require providers to amend the structure of their submitted files following the revision on 16th March 2023 to ensure no such revisions were made after the collection opened on 31st March 2023, updates and changes to the associated guidance did require providers to make changes as they came to understand the data model and specification to a greater extent. These ongoing changes were the underlying cause of many of the issues faced by institutions and Jisc during the 2022/23 collection.

41. These changes were made for one of three reasons:

- Evolving requirements of the return from the Statutory Customers - in some cases the data specification needed updating to reflect changes to the information required by the Statutory Customers, for example to reflect accurately the Lifelong Learning Entitlement.
- Ongoing enhancements to the data model - in some cases it was identified that the data model required amendment to ensure it enabled the full and accurate representation of institutions' students, for example in updating the data model in respect of the ways in which dormant students are returned.
- Necessary technical changes determined as a result of bugs identified after the return had 'gone live' - in some cases the data model required amendment as a result of errors identified during the 2022/23 collection period, for example changes made to enable the accurate reflection of students' major sources of funding.

42. Where changes were made, the change had to first be designed and agreed in collaboration between Jisc and the Statutory Customers, then development work was completed by Jisc, software changes implemented by student records system providers, institutional changes to data manipulation and reporting processes, then testing of submitted data - meaning that ongoing changes required significant lead time to deliver within institutional data returns. A number of factors exacerbated these lead times:

- The Statutory Customers had limited resource to expend on engagement with the programme, and some decisions about the data model had ramifications on the models of funding and regulation available, meaning that decision making was sometimes delayed within the Statutory Customers, leading to delays in the implementation of the associated changes to the data model;
- In practice, the Jisc team entered the 2022/23 data collection period already behind schedule as a result of resourcing challenges on development and, as a result, changes implemented were delayed;

Independent Review Findings

3. Ongoing Changes to the Data Specification

- Because of a lack of robust testing methodology and test lead (see finding 4 below), combined with the need for phased development processes due to staff turnover and a lack of realistic data upon which to undertake testing, limited testing of changes was possible, which in turn increased the volume of subsequent changes required to fix errors in previous changes;
- Where changes to the data specification were made, it was necessary to also deliver associated 'quality rules' - the algorithms used by Jisc and institutions to assess if data submitted was valid and accurate. These quality rules required additional development time and were also delayed, and subject to limited testing; and
- As a result of these changes and happening during the data collection period, much of this activity occurred in a shorter time period than was initially intended during 2023.

43. In delivering an institutional student data return, a process of trial and error is to be expected. Therefore, the first iteration of the return will likely generate a substantial number of errors, identified by the quality rules, which will then systematically be fixed and iterated. However, the nature of the ongoing changes experienced during the 2022/23 collection exercise - occurring during the 'go live' period and leaving limited time for testing, plus the new data model itself being a change from the previous year - meant that a large number of issues were only identified while the data collection exercise was live. This led to institutions commonly dealing with both a dramatically increased volume of errors relative to the prior year (one institution quoted moving from 10,000 errors to be fixed in early summer 2022, to 250,000 errors to be fixed in early summer 2023) and material uncertainty as to whether those errors were:

    - errors in their own underlying data;
    - errors in the data manipulation required to deliver the return;
    - errors in the changes implemented by their student records system provider; or
    - false negatives introduced by errors in Jisc quality rules.

    This confusion substantially increased the workload of data officers within institutions (see finding 7, below) and at Jisc.

Independent Review Findings

4. Programme Delivery

44. Context

Jisc took on the role of the Data Futures technical delivery partner in March 2020, just as the UK entered the first lockdown of the COVID-19 pandemic. Alongside other organisations both in the sector and beyond, during this period, Jisc suffered substantial challenges in recruiting suitably experienced and capable software developers to support the early stages of delivery. The programme delivery team ran with significant numbers of vacancies (causing a ~20% budget underspend in 2021/22), resulting in delays in the delivery of vital development work and delays to mitigating known issues.

In September 2024, there were 32 live 'known issues' listed on the Jisc website for the 2023/24 submission, due in November 2024. Of these 32, 14 had no expected fix date listed, including an issue raised in April 2024. The final 'known issues' log at the closure of the 2022/23 submission period included 49 outstanding issues.

45. Testing

One vacancy for a substantial period of time (though this is no longer the case) was the absence of a permanent testing lead. Between October 2021 to March 2023, three Test Leads were recruited, but there were gaps between October 2022 and February 2023 where no Test Lead was in post. This was a critical period for the delivery of the 2022/23 collection. As a result, the software testing undertaken by Jisc throughout the programme up to the 2022/23 data collection did not align with commonly accepted standards of good practice, and this had a substantial negative impact on the experience and burden for institutions.

46. Test Strategy

A draft test strategy for the programme was developed in 2021, outlining the high-level test design elements such as the test approach, test phases, entry and exit criteria, defect management approach, and roles and responsibilities. However, this document has not been finalised since the draft was developed and was not maintained during the test period.

47. Two key testing phases with institutions were conducted for annual data collection: the Alpha phase, which began in May 2021 and involved 14 organisations performing usability tests on the end-to-end solution, and the Beta phase, open to any institutions who signed up to conduct large-scale testing without participant size or file size limitations. Beta testing ran from February 2022 to November 2022; 145 providers registered for Beta, 93 submitted a file and 22 providers had a level of 'meaningful engagement' during Beta. Engagement was considered to be 'meaningful' where providers uploaded files with data for at least five students, used their own files instead of HESA's test files, had been active at various times during the Beta phase, and their files passed schema checks and progressed to quality processing.

Independent Review Findings

4. Programme Delivery

48. User Acceptance Testing

User Acceptance Testing (UAT) is crucial for ensuring that the software meets business requirements and user expectations before it goes live, thereby reducing the risk of defects and enhancing user satisfaction. UAT was conducted by Jisc staff acting as institutions, performing a limited range of scenarios, which meant that edge cases and negative testing could be missed (i.e. cases that test parameters or deliberately introduce errors to the solution). This approach did not enable a robust test of the system as it would be used by institutions with a more informed understanding of the reality of operating user needs. Although UAT test scenarios were defined by Jisc, it may have resulted in not all business requirements being adequately covered by the testing undertaken. Similarly, where bugs were identified during UAT, these were tracked on Jira (a workflow management tool) which at the time not all programme resources had access to, meaning there was limited visibility of the progress of re-testing and validating of the fixes made.

Not engaging institutions for UAT also limited the extent to which the programme team could assess institutional readiness. Although Alpha and Beta test phases were used to measure supplier readiness and engaged a variety of different sized institutions, with different software suppliers, by not engaging institutions for UAT, the programme lost an important tool for assessing the extent to which institutions were ready to go-live with the new end-to-end processes and new data model. While these test phases, along with the institutional readiness surveys, were useful to an extent in ascertaining readiness across the sector, without enforcing mandatory testing of the platform by a sufficient representative sample of institutions, or targeted risk based approach to sampling, the Programme could not guarantee that all institutions were fully comfortable with the new platform/data model and thus all ready for the 2022/23 collection.

49. Beta Testing

The beta testing undertaken in 2022 was conducted while the HDP and data model were still in development. As such, the testing occurred simultaneously with the implementation of new features across three subsequent beta releases, impeding the pace of testing and effective use of an institution's time for testing. Institutions involved in the beta testing felt that being involved in the testing alongside working on their returns subtracted from their ability to submit a valid return by absorbing staff time working with a platform and data model which was subject to significant change rather than working on improving the institutions' underlying data and submission capability.

Whilst the Beta testing guide outlined the intention "to run as closely as possible to a Business-as-usual 'real world' collection", in practice, this was undertaken without data size limits or specific test criteria such as requiring institutions to submit a representative sample of their student body data. This allowed institutions to submit data with low volumes of records that did not accurately reflect broad, real-world student bodies to uncover bugs. This approach was also reflected in later interim submissions, where institutions submitting data in summer 2023 commonly chose to submit their most straightforward student records in order to meet the submission requirements (e.g. to submit a fixed % of their students). This meant that many more complex student cases were not submitted until too late in the collection period, backloading the identification of bugs in the data model and quality rules.

Independent Review Findings

4. Programme Delivery

50. This ineffective beta test planning had a significant impact on institutional engagement with the programme and resulted in undetected quality rules errors going live, leading to a poor user experience and a more negative first impression of the data platform.

51. Assessing institutional capability

The Data Futures Programme Communications Strategy set out the intention to communicate with institutions' 'Operational Contacts' through a number of channels, including both proactive and reactive communication. The Programme's Liaison team provided support to institutions and suppliers, alongside publishing training courses and webinars/e-learning. However, to identify institutional readiness, the Programme published a number of institutional readiness surveys which sought to identify those institutions which might be struggling to meet the Programme deadlines. Institutions did not feel like they could answer the surveys honestly, especially in instances where the institution was not on track to submit data in line with the reporting requirements, due to the outputs of the surveys being accessible to regulators/funders (see finding 6, below) and concerns about additional regulatory burden as a result.

As highlighted in the March 2022 Quarterly Review Group report, a decision was made to move away from a sector wide mandatory trial of the Data Futures platform. The trial would have required each institution to submit data to the platform which could enable a more systematic approach in analysing an institution's readiness, however this requirement was replaced with "HESA monitoring each institution's engagement, readiness and then contacting them if it is felt they may need additional support", largely delivered through the readiness surveys noted above, interim submissions in May and August 2023 and the use of the online validation toolkit from June 2022. This change in mechanism and deferral of activity increased the risk of institutions that may have benefited from further support or scrutiny not being identified as promptly as might have been the case.

Whilst the Burden Review in 2020 included an assessment of the impact of Data Futures on institutions as a whole, the Data Futures Programme did not sufficiently evaluate the varying capabilities of different-sized institutions to manage the changes required. In part this was because of Jisc concerns about the challenges in identifying an appropriate way to subdivide the sector accurately and without providing unbalanced support to institutions submitting data required by funders.

Independent Review Findings

4. Programme Delivery

The programme did not effectively investigate and measure the impact that the Data Futures Programme would have on institutions, or seek to assess whether they were ready to accommodate the changes at Go-Live by assessing the gap between the programme's requirements and institution's current data management practices, technologies, and processes. As a result, the programme had an inaccurate view on institution readiness leading to wide ranging issues. In practice, the programme relied on feedback through groups and surveys, and it being an institution's responsibility to understand what needed to be done to meet the regulatory or funding requirements.

Independent Review Findings

5. Programme Governance

The Data Futures governance structure is as follows:

Quarterly Review Group (QRG)	The QRG, Chaired by an independent member, includes the Programme Senior Responsible Owner (SRO - a role taken on by the Chief Executive of HESA followed by the Chief Data Officer at Jisc), programme leadership, OfS, funders, Jisc leadership, and HESA project support. This group provides board-level oversight to ensure the successful delivery of the Data Futures Programme. Responsibilities include ensuring the programme progresses in line with expectations, approving changes to the programme mandate, and making decisions on trade-offs and compromises that impact costs and timeframes. The QRG acts as an escalation point for disagreements, approves the scope of external assurance activities, authorises contingency plans, and re-baselining of the programme if required.
Data Futures Programme Board	The monthly Programme Board, led by the Programme SRO, consists of programme leadership, funders, and representatives from Jisc, the sector, and HESA. This board is accountable for the successful implementation of the governance framework and effective decision-making. Its remit includes providing steer and challenge on programme delivery, monitoring key milestones, and managing risks and issues. The board tracks financial costs against deliverables, approves key programme stage gates and external communications, advises the SRO on escalated decisions and change requests, and supports the programme in mobilising change across the sector. The Programme Board also informs the HESA Board.
Data Futures Delivery Group (DFDG)	The weekly DFDG, led by the Programme Director, consists of the programme manager, project teams, and representatives from Jisc and the OfS. This group is responsible for overall programme progress against the high-level plan. It reviews and assesses stakeholder impacts and requirements, makes programme decisions within its authority, and provides input for the Design Authority. The DFDG feeds into the HESA Portfolio Board on resourcing and recruitment topics.
Programme Management Office (PMO)	Programme and project managers meet fortnightly to review the partnership working model and commercial matters impacting the Data Futures Programme. These meetings cover programme progress, ways of working, team performance, stakeholder engagement, and major risks and issues.
Business Change Workstream, Technology Workstream, and Data Workstream	Apart from the daily scrum meeting, each delivery workstream meets weekly to manage the programme plan's progress against milestone and product deliverable deadlines. These meetings involve impact assessment and updating the RAID (Risks, Actions, Issues, Dependencies) log, evaluating stakeholder engagement feedback, and reviewing resource workloads for forward planning. They also make project decisions within the workstream's authority and provide information to the DFDG on potential change request topics.

Independent Review Findings

5. Programme Governance

52. Conditional Stage Gate Approval

Five 'Approval to Proceed' documents were created during the programme, which defined the deliverables achieved during the reporting period, deliverables to be carried over into the next period and whether qualifying criteria for approval had been met. In these increment approvals (made by either Jisc leadership or programme workstream leads) often reached 'Approved on Condition' decisions, indicating that the programme could proceed to the next phase subject to the completion of specific actions. While the conditions of the approvals were tracked in subsequent increment approval documents, they were not given a deadline, assignee or accountable owner for the conditions. Furthermore, there were cases where conditions were not met by the time of the subsequent approval. For example, the Head of Data Management's conditional approval to move from Increment One to Increment Two in September 2020, regarding queries on operability and specification management, was still not closed by Increment 5 (2023), with a comment suggesting it would not be resolved until March 2023. These actions should have been tracked proactively and reported upon.

The Data Futures Programme's SRO was originally the HESA CEO, followed by the Jisc Chief Data Officer. The programme has two key governance forums, the Quarterly Review Group (henceforth QRG) and the Programme Board, which meets on a quarterly and monthly basis respectively to discuss key achievements, key risks, finances and other topics. These operate alongside a series of programme and workstream meetings. This structure is suitable in theory for the nature and scale of the programme, if operating fully effectively.

53. Role of the Quarterly Review Group

The purpose of the Quarterly Review Group (QRG), per its Terms of Reference, included 'providing assurance on progress', 'acting as an escalation point' and 'approving external assurance activities'. However, throughout the programme, only five decisions were recorded as being put to the QRG, and the outcome of three of these was that the decision should be made at the Programme Board level. The remaining two decisions were to defer the timeline for in-year data collection. Limited external assurance activities were undertaken (see below). From the minutes provided, the extent to which the members of the QRG actively challenged the programme's progress and performance in the forum appears to be limited. There was not a clear delegation of responsibilities between the QRG, Programme Board and other stakeholders. In practice, there was a lack of clarity also on the role of the Data Futures governance structure and the role of the Statutory Customers separately to the Data Futures governance structure; some decisions around the data specification were taken outside of the governance structure.

Independent Review Findings

5. Programme Governance

54. Membership of the Programme Board

Membership of the Board includes representatives from the devolved nations funding bodies, Jisc, HESA and sector representation from UCISA (Universities and Colleges Information Systems Association), ARC (Academic Registrars Council) and HESPA (Higher Education Strategic Planners Association). These groups all have a valuable role to play in the oversight of the programme. To improve the transparency of communications and to obtain a fair reflection of the sector voice, the Programme Board could include representatives from other key sector bodies such as Independent HE who represent 'non-traditional' institutions who had previously only submitted to the Alternative Provider Return.

The remit of the members of the Programme Board as described in the Terms of Reference is to "Approve external stakeholder communications", "Represent internal and external stakeholders" and "Support the Programme in mobilising change across the Sector". However, we understand that the Programme Board members were required to sign a Non-Disclosure Agreement regarding the work of the Programme Board, which led to confusion for sector representatives as to their role on the Programme Board and what information about the programme's progress they were able to share with their sector body members to then gather feedback on whether this was reflective of sector experience. This has led to a gap in the view of programme progress.

In addition, although the Programme Board's Terms of Reference refers to an 'Independent Advisor' to the programme board, none was appointed. This role could have provided assurance to the programme, providing an independent view on the programme's ability to deliver, and challenge the programme's decisions. The Independent Advisor could have also brought additional expertise, skill and experience of project and programme management to support the Board in its review of information received on progress.

55. Progress Reporting

Extensive progress reports were provided to each of the Programme Board and QRG meetings by the delivery team. These papers were substantially more detailed than is common for Programme Board reporting, sometimes arriving late, which made it difficult for Programme Board members to engage with effectively. Programme progress reporting in the Programme Board reports was subjective, with phrases such as "broadly on track" and "cautiously on track" used to describe progress. Objective measurements of progress (such as burn down charts displaying the number of story points completed and remaining against a baseline) were not provided in the reporting. Programme Board members felt there was a level of optimism bias in the way papers were presented and often found it difficult to gain an understanding of actual progress and, as a result, there was a lack of appropriate challenge. The lack of objective reporting relating to progress may well have contributed to this optimistic view, for example, Board reports in February 2022 claimed the programme was "cautiously on track", but £1.35m underspend (relating to vacancies) against the relevant budget of £6.5m for the 2021/22 financial year. This should have been an indicator that progress was unlikely to be in line with planned programme milestones. Resourcing issues were intended to be mitigated with reprofiled funding to support an extended development window throughout 2022 (utilising underspend to date) and a phased Beta testing period, as reported to the Programme Board.

Independent Review Findings

5. Programme Governance

56. Risk Reporting

A detailed Risk Log for the programme was maintained, which tracked risks, issues, decisions and changes. This was reported upon at each Programme Board meeting, though the concerns raised within the Log were not always acted upon. Although Programme Board members reflected that there had been a level of optimism bias in progress being made in the way in which papers were often presented to them by the programme delivery team, the papers themselves, whilst expressing an expectation that collection would be able to be delivered in line with the usual annual data collection cycle up until 2023, did clearly set out several key 'red' risks such as those associated with the inability to resource the programme adequately and the challenges around the recruitment of a testing lead. The Programme Board did not sufficiently challenge the impact of these risks on the viability of the programme delivery, with these risks being repeatedly raised in reports over several months with no clear path to 'green' sought and identified.

57. Independent Assurance

Independent project assurance is a process whereby the health and viability of a project is assessed by an unbiased party. It is designed to support all project stakeholders in determining whether a project will accomplish its objectives and if there are significant risks to this. In a technically complex project which has a high sector profile, a significant budget and numerous stakeholders, such as the Data Futures Programme, assurance should be embedded throughout the lifetime of the programme, to maximise the level of assurance which can be provided and the assurance provider's understanding of the programme.

58. Funding

£60,000 of funding was assigned during the project for one-off assurance exercises (less than 0.5% of the total Programme Budget). In the August 2020 Data Futures Joint Delivery Proposal this was allocated for three assurance exercises, but there was a caveat that there may be the potential to reduce this in light of the existence of the monthly Programme Board, the newly approved data model design and increased involvement from the OfS and UCISA in the process. None of these mechanisms could provide truly independent assurance and as such were not a suitable substitute.

Independent Review Findings

5. Programme Governance

59. Independent reviews

In December 2018 the OfS commissioned BDO to undertake an independent review over the approach of the Data Futures Programme to understand whether or not it would deliver to meet Statutory Customer requirements. The report, shared in February 2019, resulted in governance arrangements being updated. In 2020, KPMG also conducted an internal audit for the OfS over the OfS' governance arrangements around Data Futures (the action plan for which is publicly available in the OfS' Board papers for September 2020), which led to a finding of significant assurance with minor improvement opportunities. The findings included: lack of detail in the documented agreement on the nature and extent of OfS involvement in the programme; lack of formal OfS Board level oversight beyond September 2020; and individuals involved in the programme oversight becoming "single points of success". One of the recommendations made, which the OfS partially accepted, was that the "OfS should proactively identify areas where and from whom additional input might be needed, on top of the day to day activities of individuals directly involved in the oversight process." The action taken in relation to this recommendation only involved consulting internally at the OfS, however, this could have been an opportunity to identify where external third party assurance was needed. The OfS also commissioned KPMG in the autumn of 2022 to undertake an assurance exercise focused on the implementation of the new HDP, this resulted in an overall positive report along with three medium rated risk areas for improvement. No further independent internal audits or independent review over the Data Futures project took place during the project.

60. Overall, the Programme Board and QRG were unable to gain an independent, unbiased view on the progress and success of the project. If independent project assurance had been in place throughout the Data Futures project, this would have supported members of the Programme Board in oversight of progress and issues may have been raised and resolved sooner.

Independent Review Findings

6. Communications

61. Communicating effectively throughout the UK higher education sector is highly challenging as a result of the complex nature of the sector:
    - The sector is extremely varied, and the Data Futures Programme incorporates major research intensive global institutions and small, specialist, privately owned providers and everything in between.
    - There are four separate funding/regulatory regimes in action across the Higher Education sector, plus a series of other funders/regulators who institutions are also responsible to, meaning the breadth of regulatory responsibility and burden can create conflicting priorities;
    - Within institutions, there are a variety of teams and senior post holders with responsibilities in relation to the return compilation;
    - There are a number of different student records systems in place, each with distinct teams of developers and separate challenges in supporting data collection; and
    - The sector has a broad range of representative bodies which provide valuable support to different segments of the sector's institutions and different roles within institutions, often with some level of overlapping coverage.
62. In this context, delivering communications which reach institutions, and the right areas of institutions, on a timely basis and in an effective and persuasive manner, is difficult - and the Data Futures Programme has suffered from a broad range of communications challenges.

Transparency

63. In the main, institutions have felt that, in the lead up to the 2022/23 data collection, Jisc were not transparent regarding the ongoing readiness of the sector for submission, in part through not publishing transparent data on institutional engagement and progress. Following discussions with the Jisc team in 2022/23, multiple institutions reported feeling that they were unusual in having issues with data collection and submission preparation, or that the issues they had identified had not arisen elsewhere in the sector. This was subsequently demonstrated not to be the case as (a) issues identified moved onto the 'known issues log' and (b) substantial numbers of institutions were unable to submit valid data in line with the original timelines. In practice, Jisc were not aware of the wider issues identified due to a combination of positive readiness surveys submitted by the sector in February 2023 and a lack of ability to diagnose issues and identify root causes of issues raised by separate institutions against each other in real-time. Subsequently, during 2023/24, Jisc published transparency data on submissions made and institutional milestones, which was recognised by institutions as an important step towards greater clarity. As noted above, the 'known issues' within the HDP were recorded on a centralised document and were made available to all institutions to utilise in cross-comparison exercises when validating their data. During the 2022/23 collection period, institutions found that delayed updates to this document disclosing new issues resulted in institutions, the HESA liaison team and software providers spending significant amounts of time investigating errors within the data, only to later identify that this was a 'known issue'. These concerns have led to an ongoing erosion of institutions' confidence in Jisc.

Independent Review Findings

6. Communications

64. Similarly, institutional readiness survey responses and subsequent submission timetables show that institutions failed to be fully transparent in their communication in to the programme team. In the main, institutions in England in particular felt unwilling to be fully transparent in their responses to the ongoing readiness surveys completed by Jisc as a result of fear of consequences from the Office for Students, and additional scrutiny or regulatory action that could result for those declaring issues with readiness. The readiness surveys included text noting that providing data forms part of of condition F4 of the OfS' conditions of registration and that institutions who indicated a lack of readiness were likely to 'require more information for additional monitoring activity'. The optimistic reporting received by these readiness surveys was a key contributor to the confidence in the programme's ability to deliver late into 2022/23. During this time, HESPA collected anonymised readiness surveys from across the traditional HE sector which demonstrated significant concerns, highlighting this lack of transparency. This was submitted to the Data Futures Programme team and OfS during the 2022/23 collection process.

Accessibility of Communications

65. Communications regarding the Data Futures Programme that were sent from the OfS and the SFC (on progress, expectations of institutions and significant changes) were generally sent in the form of a letter to institutional Accountable Officers and Heads of Institution. These communications did not always reach the teams responsible for the day to day delivery of the return on a timely basis. Many institutions felt that they were expected to review the HESA website regularly for any changes to the scope. A number of smaller institutions, in particular those who previously submitted the Alternative Provider Return, reported that they did not always have the expertise to understand the technical requirements set out in communications to them.

Timeliness of Communications

66. Because of the ongoing development work and compressed timetable for completion, during the 2022/23 collection period communications to institutions regarding changes to the HDP or data model could not always be done on standardised timescales, limiting institutions' time to respond and implement changes. Institutions' confidence in both Jisc and the HDP fell over time as a result of a perception of irregular communications relaying a series of changes to the data model and extensive challenges with unresolved quality rules, as well as a perceived lack of clarity in these communications.

Independent Review Findings

6. Communications

HESA Liaison

67. A stand out factor in the perception of how communications and information sharing was dealt with during the programme, came from the majority of institutions who expressed the importance and value they placed in the positive and constructive personal relationships they had developed with the HESA liaison team. In 2022/23, this team fielded a dramatically increased volume of queries. Frustrations were expressed though with the inconsistency in information shared by different members of the Jisc team. As an indication, the HESA liaison team received over 39,000 messages between October 2023 and December 2023, with 61% resolved on the first try. The team averaged 437 conversations per day within this period, with messages being received throughout a full 24 hour period in every day of that period, including weekends. However, inconsistencies were cited between responses from the liaison team and the Data Futures development teams, where institutions brought complex concerns which could not be resolved at the first attempt. The complex nature of the ongoing changes to the data specification made ensuring consistency of understanding between teams at Jisc both more important and challenging.

Independent Review Findings

7. Sector Readiness

Data Quality in Higher Education

68. A significant challenge for the wider sector is the efficiency and effectiveness of underlying data collection, validation, cleansing and manipulation processes required to generate the data required for submission. Although in recent years institutions have sought to automate, restrict and standardise their student data collection processes, in many institutions, data collection remains an inefficient process. The complex and varied nature of institutions, especially larger, broad, federated research and teaching institutions, results in a large range of different data collection mechanisms, across a wider range of student profiles and entry points and delivered by multiple teams across an institution. Unless there are rigorous system controls in place, enabling high quality data input in this context is very challenging. As a result, data cleansing of information received by the institution as part of admissions or enrollment processes commonly requires resource intensive continued cleansing and validation, often throughout the full academic year, in advance of submission of an annual data collection. This data quality issue will be a greater risk under an in-year data collection. Our interviews highlighted institutions' concerns around making investments to data quality, an area which is perceived to have a limited impact on students and research, whilst operating under significant financial pressures. In practice, improved data quality and associated data collection mechanisms would support an improved student experience, though the extent to which this benefit would justify the required investment is hard to assess. Whilst technologies exist which could enable a more standardised, efficient data collection and manipulation process within institutions, such technology requires significant investments to implement.

Resource Investment

69. Similarly, many institutions chose not to invest significantly in ongoing work towards the delivery of a Data Futures compliant data return prior to the 2022/23 academic year as a result of the history of deferrals to the programme and a view that there was a meaningful possibility that any such investment would be wasted, as many institutions had made investments in advance of the 2019/20 year prior to the initial deferral and substantial change to the data model. With hindsight there are mixed views on this, some institutions feel that greater investment at an earlier stage would have been valuable, whilst others feel vindicated in taking the approach taken, given that they were able to submit in line with the rest of the sector and didn't spend money on versions of the data model which were later superseded.
70. Both anecdotal evidence and the data collected by Jisc and HESPA demonstrates that the delivery of the 2022/23 data collection exercise required a substantial increase in the time committed by institutional data teams to the data collection exercise relative to previous years, with many institutions reporting both extensive overtime and weekend working within their teams, and struggles to recruit individuals with relevant skills and experience similar to those experienced by Jisc exacerbated this issue. This increase in resource is linked to the increased error volume experienced, and as such may be largely transitional and reduce in future years, but the nature of the ongoing transition means that it is not yet clear how the 'steady state' resource requirements would compare to the resource requirements under the previous data models. Without institutions investing significantly in developing and, to the extent possible, standardising and simplifying, their existing student records systems and data architecture, institutions will retain a significant level of administrative burden to complete the return.

Independent Review Findings

7. Sector Readiness

Assessing Readiness

71. In practice, there was substantial variation in the extent to which institutions were 'ready' during the 2022/23 cycle. The ongoing changes to the data model throughout the cycle made making an accurate judgement of readiness difficult. Institutions submitted Readiness Surveys to Jisc during 2022/23. It is clear, from interview data and data collected by HESPA anonymously during the 2022/23 collection process, that institutions commonly over-reported their level of readiness and the reasons given for this varied:
    - Some institutions felt that, due to the volume of changes the data model was undergoing in the lead up to the collection date, it was impossible to accurately assess their readiness, and so chose to report optimistically.
    - Others highlighted concerns about the impact of reporting a lack of readiness - with multiple institutions referencing an expectation that the OfS in particular would increase regulatory scrutiny over institutions reporting negatively. This is reflected in the text of the readiness surveys, which stated that such institutions are likely to be flagged as at higher risk resulting in additional monitoring activity. In some cases, teams responsible for preparing the readiness return were inhibited to respond negatively in the readiness surveys due to concerns as to the potential regulatory consequences, whilst other teams cited that their initial more negative responses to readiness surveys were overruled by institutions' senior leadership.
72. A lack of clarity at both Jisc and the Statutory Customers as to the perceived readiness of institutions was a significant contributing factor to the lack of understanding of the level of challenge faced by the sector in submitting the 2022/23 return, until very late in the cycle.

Alternative Providers

73. Many institutions previously submitted an 'Alternative Provider' return (more than 100 institutions), rather than the HESA Student Record precursor to the Data Futures return submitted by publicly-funded institutions. The scope of the Alternative Provider return was substantially smaller and, as such, the change in data collection and manipulation required between the previous return and the Data Futures return was larger for these institutions, although the structure and concepts of the Data Futures data model are more similar to the Alternative Provider return than the HESA Student Record. Many of the alternative providers are smaller institutions, with less varied provision, and therefore with smaller teams (often one person, spending part of their time, and with less expertise and access to support networks of similar data professionals) delivering the data return.

Independent Review Findings

8. Staff Wellbeing and Resourcing

74. Student Data returns, under both the Data Futures model and previous student data returns, require extensive staff time to deliver.

Wellbeing and workload

75. In order to be able to meet the submission deadlines, many institutions had to increase staff numbers in the teams completing the returns (generally within Registry, Planning or IT) and many staff members increased the number of hours worked each week, with staff finding the additional volume of 'errors' to be fixed overwhelming. The extensive work required to respond in a timely manner to the continuous changes to the model resulted in staff workloads increasing, considerable overtime worked, which led to high stress levels. This was true in all of the organisations involved in the Data Futures Programme, including teams at institutions, Jisc, the Statutory Customers and SRS providers. Institutions experienced significant strain on resources and staff wellbeing. Posts from the HESPA forums demonstrated that a number of individuals felt under extreme pressure, which was having a significant impact on their mental health.
76. Increased volume and workload is demonstrated by the HESA liaison team's records, which show that they received over 39,000 messages between the start of October 2023 and the start of December 2023, with 61% of issues logged resolved through a first discussion. The team averaged 437 conversations per day within this period, with messages being received in every hour of the day throughout that period, including weekends and through the night. The need for additional staff, late working hours, and the pressure of user acceptance testing highlights the hidden costs and stress associated with the programme, both at institutions and at Jisc.
77. Several institutions talked about teams not being able to take holidays over the summer period due to the volume of work to be delivered. Many of the institutions we spoke to indicated that members of their team had chosen to move into other roles at the institution, leave the sector altogether, experienced long term sickness absence or retired early as a result of their experiences, and whilst difficult to quantify, this will have a long-term impact on the sector's capabilities in this complex and fairly niche area.

Resource demand

78. Within Jisc, institutions and student records system providers, the programme has resulted in a significant increase in demand across the sector for the specific software engineering and HESA data management skills required to produce a viable return. There has been an increase in the cost of resource to institutions and challenges recruiting to vacant posts both within Jisc and at institutions. Many institutions have sought to supplement resource by moving staff within teams, though our interviews with representatives from the sector highlighted a concern that roles relating to data returns were not considered attractive prospects for applicants. In practice, it is likely that the reputation of the Data Futures Programme has been a negative factor in this respect.
79. In the longer term, the impacts of the recent Data Futures data collection exercises may have a significant impact on the quality of data and level of expertise in the sector. HESA data returns are complex and require a level of expertise and familiarity with the data models and rules which is not easily gained, and a lack of expert resource in this space is not a problem which is easily solved.
80. The increasing resource demand in the sector has not been met with a commensurate increase in supply of expertise.

Independent Review Findings

9. Student Records System Provider Readiness

Student records systems

81. Student records systems (SRSs) are software platforms that manage an institution's student data. Student records systems must meet a broad range of operational demands - effectively managing or integrating with other systems to support all elements of the student lifecycle as well as enabling reporting for a broad range of stakeholders, internal and external. There are a number of institutions with student records systems developed in-house, as well as a number of software providers delivering highly customisable student records systems to a number of institutions. Earlier this year, Jisc, the Universities and Colleges Information Systems Association (UCISA) and the Academic Registrars Council (ARC) published a report entitled "Student Records: the current landscape" setting out findings from interviews with 18 institutions and a sector-wide survey, which (amongst other things) cited broad dissatisfaction with the existing products to manage student data.

Institutions with in-house SRS

82. Institutions with in-house systems felt that, whilst having an in-house system adds a layer of complexity to the work required to deliver a valid return, the closer working relationship between software-developers and teams submitting the return allowed for a more agile approach to development - and from institutions' descriptions of their experience of Data Futures, this appears to have been a benefit in terms of being able to deliver a Data Futures return on a timely basis. Where institutions do have in-house systems, these have been in place for many years and have evolved alongside institutional development. Developing a new in-house student records system now is beyond the capability and funding position of many institutions in the sector. The fact that these systems have continued to exist over many years is unusual and indicative of the sector's lack of confidence in the alternative software packages available.

Independent Review Findings

9. Student Records System Provider Readiness

SRS Provider impact on Data Futures

83. It is clear that, in respect of Data Futures:

- Where changes to the data specification were made during the 2022/23 data collection period, the level of response necessary from SRS providers varied, with some changes requiring significant work on institutions' part to develop the institutions' implementation of the SRS to align to the change made and in other cases changes being managed directly by SRS providers.
- Institutional personalisation of SRSs over time is necessary to reflect the student body where institutions have students who study on courses which do not fit neatly with the SRS's definitions or in-built structures, or where institutional processes do not reflect the processes as system designers anticipated. This is very common within the sector but means that multiple institutions have made similar customisations to the same SRS in order to implement the same changes to reporting requirements, with minor differences reflecting the bespoke nature of their specific implementation of the SRS. The common SRSs do not support personalisations in a way which protects institutions from errors occurring associated with their personalisations when wider system changes are implemented by the SRS providers.
- There is variation in the extent to which student records system providers invested in the Data Futures programme prior to 2022/23, with SRS providers highlighting similar concerns to institutions about investing given the historic deferrals of the programme and previous wasted costs.
- There is a gap between the readiness and success of SRSs in delivering the Data Futures Programme as perceived by the SRS providers and the institutions using those SRSs, with system providers indicating that their solutions were able to produce valid returns, whilst institutions consistently felt frustrated by the extent to which their SRS capabilities lagged the current version of the data model and HDP.

84. Where updates to the data specification or the HDP required SRS updates during 2022/23 (which was often the case), there was insufficient time available for system providers to implement and test changes appropriately due to the short timetable available. Due to the personalised nature of HEI's SRS systems, where suppliers made the changes to their core software and had successfully tested it in time, each institution still had to subsequently test the changes to ensure that any impact on downstream personalisations was managed.

Recommendations

Recommendations

A. Recommendations for urgent next steps to determine a future direction for the Data Futures Programme.

Ref	Recommendation
A1	Immediately following completion of the 2023/24 data collection, the Statutory Customers, with support from Jisc should revisit the initial statement of benefits expected to be derived from the programme, in order to ascertain whether a move to in-year data collection is a critical dependent in order to deliver on the benefits of the Data Futures programme.
A2	As soon as is practicable, Jisc and the Statutory Customers should collaborate to perform a discovery exercise for in-year data collection in order to clearly define the scope of an in-year data collection.
A3	Once the potential scope of in-year data collection is established, during the 2024/25 academic year, Jisc should perform an impact assessment to evaluate the feasibility and cost of delivering the in-year data collection or consider replanning if necessary, including: a. Assessing when in-year data can realistically be delivered. b. Assessing the readiness of software providers by engaging with them to consider the extent of the technical development required on their part to deliver tools for in-year data collection. c. Identifying the required resources at Jisc and the Statutory Customers to deliver the data model, specification and development work required. d. Creating a realistic timeline that accounts for the programme's current risks, dependencies, constraints, and assumptions. e. For identified risks, constraints, and assumptions, developing a mitigating action plan with designated owners to ensure the deliverability of the revised plan. f. Ensuring that all necessary tasks and activities, such as User Acceptance Testing (UAT) and change/communication management, are included in the programme workplan and costing. g. Ensuring the replanning exercise is reviewed and approved by all key accountable stakeholders to secure commitment and alignment for delivering the plan. h. Consider whether technological developments in recent years can enable alternative approaches to delivery.
A4	The Statutory Customers should obtain independent assurance regarding this costing and feasibility study.
A5	Following completion of recommendations 1-4 above, the Statutory Customers and Jisc should consider undertaking a cost-benefit-burden analysis, reassessing the value of in-year collection and determining whether or when to pursue in-year collection. Given the challenging state of the sector’s finances at this point in time, it is important that this incorporates a high level consideration of the cost to providers.

Recommendations

The remaining recommendations below set out steps to support the programme in **achieving in-year data collection**, if this remains the programme's objective following completion of recommendations A1-A5 above.

B. Strategic recommendations for the Programme going forward

Ref	Recommendation
B1	Following completion of the benefits reassessment, clarity of roles and responsibilities and greater clarity on the nature and timetable for in-year submission, Jisc and the Statutory Customers should seek to reset the nature and tone of communication and engagement with the sector around the Data Futures Programme towards a cooperative and collaborative approach. Communications should come from both Jisc and the Statutory Customers to the sector to clarify: a. The purpose of the programme and the value it will bring to funders and regulators, students and the sector; b. The timetable going forward; c. A clarity on the timetable of any scope freeze; d. A clear statement that the Statutory Customers will take account of the context regarding the outcomes of the first in-year submission when regulating institutions.
B2	The Programme Board should consider undertaking an in-year data submission with a subset of institutions in the first instance. This approach would help to minimise the volume of queries from institutions and enable a closer alignment of Jisc team with specific institutions for troubleshooting purposes. The subset used should ideally include institutions using all of the major student records systems.
B3	The Statutory Customers should explore the extent to which the first mid-year data collection exercise submitted by each institution could be subject to decreased onwards use (in regulation, funding or publication), to allow for lower than ideal data quality given the limited timeline available for data cleansing and manipulation.
B4	Once the in-year data model is designed, the data model design should be frozen, with no further changes implemented for an extended period of time (ideally 18 months, at least a year) prior to the first in-year collection. This will enable Jisc and institutions to plan and deliver effective data collection and manipulation exercises.

Recommendations

C. Recommendations for Jisc on programme delivery

Ref	Recommendation
C1	Jisc should ensure that the benefits tracker is updated with current progress, data, and metrics. This process should include: a. Clear ownership and defined roles and responsibilities; b. Systematic tracking, measurement, and realisation of benefits; c. Regular reviews within a defined period, specifying the roles, responsibilities, frequency, and methods used; d. Documentation of the roles and responsibilities of a benefit owner to ensure the realisation of outcomes, and ensure this information is communicated to all individuals designated as benefit owners; and e. Owners of the benefits relevant to in-year data collection should discuss any changes in benefit status with the Statutory Customers and institutions, when the go-live date for in-year data collection is known.
C2	Jisc should develop objective KPIs to be included in programme reporting, measuring progress against established baselines.
C3	If increment approvals are used in subsequent phases, Jisc should ensure that conditions of approval are tracked with designated owners and deadlines, and that they are not left unresolved through subsequent increments.
C4	Jisc should implement a more frequent (weekly or bi-weekly) and structured update schedule for known issues and resolutions on the HESA Data Platform (HDP) to ensure that all stakeholders have the latest information.
C5	Jisc should identify where additional support or training may be required, including where those training requirements might vary across institutions of different sizes, experience or capabilities.
C6	Jisc should ensure a consistent Test Lead in role to be accountable for test execution.
C7	Jisc should enable the Test Lead to directly report into the Programme Board, to provide an opportunity for ongoing scrutiny in relation to this critical role.

Recommendations

C. Recommendations for Jisc on programme delivery (continued)

Ref	Recommendation
C8	Jisc should refresh the test approach for the subsequent development and maintenance phase that includes the following: a. Comprehensive scope covering data validation, negative testing, quality rules, performance, and regression testing. b. Tester identification and allocation, including using real users for User Acceptance Testing (UAT) when appropriate. c. Well defined timelines and milestones for conducting testings. d. Test scenarios that are approved and traceable to requirements, covering both happy path and negative path. e. Realistic test environments that closely replicate the production environment in terms of data and usability. f. Clear entry and exit criteria to ensure risk assessment before entering testing and proper completion. g. Robust defect management process for identifying, logging, and tracking defects or issues through to resolution. h. Systematic reporting with test metrics to regularly update stakeholders on progress, results, and quality status. i. Formal test closure with test completion report.
C9	For subsequent development phases, Jisc should ensure that system features and requirements are fully developed prior to executing UAT to enable an end-to-end test execution.
C10	Jisc should perform a stakeholder identification and categorisation exercise on institutions to understand where there are similarities between the institutions characteristics, then group these institutions with similar characteristics into stakeholder groups. This will enable some more targeted communications and/or support for these institutions in the lead up for any future changes. It may be necessary for providers to fall into more than one group.
C11	For major changes (such as a move to in-year data collection), Jisc should impact assess institutions and develop a plan to engage and support institutions, to identify those which will likely require additional effort to accommodate changes.
C12	Jisc should take a risk based view and identify institutions that would be suitable to represent a wide sample base to perform User Acceptance Testing on the platform and upskill institutions prior to being given access (irrespective of deployment approach).
C13	In addition to the sector-wide communication in recommendation B1, wider communication channels should be considered by Jisc and the Programme Board, such as through specific engagement with bodies such as HESPA and SROC to further bed-in transparent, open working relationships.

Recommendations

C. Recommendations for Jisc on programme delivery (continued)

Ref	Recommendation
C14	Statutory Customers should provide sufficient notice for changes aligned with deadlines that Jisc sets out in order for Jisc to communicate with SRS providers (including in-house) through their Teams channel.
C15	Jisc should implement a steadier, phased approach to rolling out changes, allowing for adequate testing periods and providing windows for minimising integration challenges and operational disruptions. Greater, longer-term clarity on the requirements of the return from the Statutory Customers will be necessary in order to do this.

Recommendations

D. Recommendations for the Programme Board going forward

Ref	Recommendation
D1	The Programme Board should clarify the decision making responsibilities of each element of the programme governance structure.
D2	The Programme Board should engage an independent advisor, with large-scale IT transformation programme or data capability experience, to join the Programme Board to provide additional independent challenge.
D3	The Programme Board should include representatives from other sector bodies to ensure comprehensive representation of all institutions.
D4	The Programme Board should ensure continuity of membership when moving to in-year data collection, while also considering new members who can provide fresh perspectives on the programme.
D5	The Programme Board should clearly define the roles and responsibilities of sector representative Programme Board members, specifying the information they should share and gather from their respective sector bodies.
D6	The Programme Board should appoint an independent assurance provider to provide project assurance over the Data Futures project going forward.

Recommendations

E. Recommendations for the wider sector

Ref	Recommendation
E1	Selected providers should engage with User Acceptance Testing fully, including providing suitable 'real' data for testing on a timely basis.
E2	Senior Leaders within institutions should assess the wellbeing of the teams within their institutions responsible for compiling the HESA data returns, re-assessing the resource levels in place to ensure working practices are sustainable.
E3	Institutions should provide frank, transparent assessments of their own readiness to deliver in-year collection throughout the programme lifecycle.
E4	The Statutory Customers and Jisc should work with SROC, HESPA, Independent HE and other sector bodies to consider what can be done to enhance the attractiveness of data professional roles in the sector, perhaps through accreditation schemes and benchmarking pay versus comparably technical roles.
E5	The Statutory Customers should consider what support can be given to enable institutions to manage the gap between institutional ability to fund resources to facilitate the enhancement of data and the step-change in resources needed to enhance the quality of their underlying source data for in year collection where institutions are under financial strain.
E6	The Statutory Customers and Jisc should Increase the level of centrally provided training, support and links to other institutions' teams available to support new entrants to the HESA data return process.
E7	SRS providers should enhance engagement with the institutions they support, proactively gathering increased feedback on institutions' experiences of their system under the Data Futures Programme in order to enable a greater clarity within institutions as to system capabilities and how to make the most of the changes implemented by SRS providers for the Data Futures return.

Appendices

Appendix A: Our Research Questions

Governance
How could the programme governance have been more effective such that it delivered the agreed outcomes to the agreed timeline? This includes exploring what worked well, what would have worked better and what arrangements are needed to make it work in the future.
How well did the programme oversight address the needs and challenges related to multiple customers and stakeholders, and multiple groups within those stakeholders (e.g., Boards and executive groups), and the need for alignment and understanding between them?
Did those in governance have appropriate and accurate information to understand the progress and issues? Did they understand their role(s) and escalate as appropriate? What assurance, third-party, sector or other, did they have access to in order to calibrate the information they were receiving?
How was progress against key milestones identified, monitored and communicated to the programme board? Were contingency plans in place to be utilised in the event of key milestones being missed?
Were decisions about changes to scope, release of additional funding, effectively made and communicated? Did the programme board have appropriate levers to influence, prevent and resolve the issues emerging, and if so, did they use them effectively and timely?
What assurances were provided, by whom, and did they reflect the actual delivery of the programme?
To what extent did the funding and regulatory consequences of delivering the data collection influence the willingness of providers and Jisc to identify issues early and to share a full assessment of risks.
With hindsight, are there other approaches that may have been more effective and should be considered in the future that were not considered at the time?
Did Jisc have the information they needed at each of the relevant stages to complete the required work? If not, what did they not have and why?

Appendix A: Our Research Questions

Delivery
What was supposed to happen versus what actually happened? What are the reasons for these differences and how were any of these points reflected in risk assessments?
How could the programme governance have been more effective such that it delivered the agreed outcomes to the agreed timeline? This includes exploring what worked well, what would have worked better and what arrangements are needed to make it work in the future.
What level of testing were providers able to do at different stages? What level of testing were providers able to do against resolutions of the challenges identified?
Why did bugs materialise at point of go-live and what was the impact on providers? Could anything have been done to prevent or reduce this?
Where planned deliverables were not achieved, were these issues identified and then communicated in an effective and timely manner to providers and funders?
How well designed were quality rules in practice? Where quality rules fully designed and was the monitoring of completion rates appropriate? How might this have been more effectively resolved and what assurance process should be adopted for future collections around quality rules?
How were assurances from software suppliers sought – given the reliance of many institutions on a small number of suppliers? What lessons can be drawn from knowledge of the suppliers of the readiness (and operating model) of their customer base?
What role did funders and regulators play in supporting delivery of the data collection? Was this clear and does anything need to change for future collections?
How were any estimates of the scale of data issues, errors and warnings after running the trial phases used to inform future planning and how did they then compare with the live phase?

Appendix A: Our Research Questions

Communications/engagement
How effective were communications within, and between, Jisc, its Statutory Customers across the UK and technology partners (including the funders/regulators for IRIS, software suppliers etc.), particularly on the nature and resolution of issues. To what extent did the communication approach help to resolve issues?
How effective were communications to providers across the UK and did they receive what they needed through the programme? Were communications timely and accessible? Did the correct people receive these directly? Was there clarity in timescales especially when things changed?
How did the programme assess the effectiveness of communication with providers and identify any gaps? As part of this, how effectively were communications from providers captured and addressed? Did Statutory Customers support effective communication about the programme with providers?
Were decisions about changes to scope and the release of additional funding, effectively made, and effectively communicated?
What support was in place for providers and was this appropriate? If so, were providers made aware of that support? If not, what else could have been done?
How effective were the communications of known issues such as changes and bug fixes, and related guidance?

Other questions
What work is outstanding that needs to be delivered?
Has the programme been sufficiently resourced for its scale and ambition? Have Jisc staffing estimates for workstreams proven accurate for what was actually required and, if not, how has this affected project deliverables? Were there opportunities to re-prioritise and review staffing allocations, and were they taken in a timely manner? Did the available staff have the relevant skills and experience to deliver the requirements. Did providers have the correct expectations of resource needs and were they sufficiently resourced?
How can funders be assured that providers have the right data capability and capacity for the next phase of the programme?
What assumptions were made about student system set up, approaches and processes for data input and was the level of variation (and current state of manual intervention in institutions) assumed an accurate reflection in the live phase?
To what extent does the delivered platform solution have technical longevity? How much work needs to be revisited for longer term sustainability for the platform?
Is there a reasonable likelihood of the programme delivering effectively if it proceeds to in-year data collection? What would need to be in place for this to happen effectively?
(If not covered elsewhere) what lessons do the funders and regulators need to learn from all aspects?.

Appendix B: Benefits as per Programme Documentation

Benefit	Requires in-year data collection ?	Beneficiaries				
		Statutory Customers	HESA/ Jisc	Institutions	SRS Providers	Students
Service Improvements: *Improve the performance, efficiency, and security of the system.*		Yes	Yes	Yes		
Timely Data: *Enable timelier strategic and operational decision-making, in line with legislation and policy in the four home nations.*	Yes	Yes	Yes	Yes		
Support key policy and regulatory aims that are shared across the UK: • *Ensuring that there is provision of appropriate quality to meet the needs of students and stakeholders.* • *Ensuring that aims in respect of widening participation and reducing inequality in higher education can be met.* • *Ensuring that public funding invested in higher education is being used effectively and appropriately.*		Yes	Yes	Yes		
Data Model - Alignment: *Better alignment of regulatory and statutory data returns through a single UK wide model that connects with the increasingly diverse range of administrative business processes in HE providers and replaces the current dual model approach.*		Yes	Yes	Yes	Yes	
Data Model - Comparability: *Ongoing comparability, utility, and efficiency in data collection and supply.*		Yes	Yes	Yes		
Data Futures Solution - Operational Risk: *Reducing operational risk associated with current aging solution. Delivering back-end efficiencies that assist HESA in accommodating increasing complexity in the delivery of its services.*		Yes	Yes	Yes		

Appendix B: Benefits as per Programme Documentation

Benefit	Requires in-year data collection ?	Beneficiaries				
		Statutory Customers	HESA/ Jisc	Institutions	SRS Providers	Students
Data Futures Solution - Improved efficiency: *Scalable, performant and adaptable solution. Delivering back-end efficiencies that assist HESA in accommodating increasing complexity in the delivery of its services.*		Yes	Yes	Yes		
Automated Quality Assurance Processes: *More efficient data return and quality assurance process for HE providers, with increased automation in quality assurance, where at present much of the checking is manual, providing a responsive service for providers and greater efficiency (within HESA and providers).*		Yes	Yes	Yes		
Efficient Quality Assurance Process: *More efficient data return and quality assurance process for HE providers, with increased automation in quality assurance, where at present much of the checking is manual, providing a responsive service for providers and greater efficiency (within HESA and providers).*		Yes	Yes	Yes		
HDP and Supporting Systems - Future Use: *The HDP is a substantial, flexible software asset, created for the collective benefit of the sector. The current focus is the Student and AP collections, but HDP is architected to provide the digital foundation for all HESA data collections; further significant benefits will accrue as current aging systems (which are difficult to enhance and costly to maintain) are decommissioned.*			Yes			
Timely Data - Student Choices: *Assurance for students regarding the quality of HE provision - in-year data, more timely information for student choices.*	Yes					Yes

Appendix B: Benefits as per Programme Documentation

Benefit	Requires in-year data collection ?	Beneficiaries				
		Statutory Customers	HESA/ Jisc	Institutions	SRS Providers	Students
Public Funding Outcome Assurance: *Assurance for Government regarding the use of public funding for HE, including ensuring that investment is achieving the desired outcomes.*		Government				
Timely data - regulatory purposes: *Provides earlier data for regulatory purposes including more timely monitoring of student retention and changes to student population, more timely data for TEF iterations, more timely information for policy decisions, and more timely impacts of fee changes.*	Yes	Yes				
Timely data - provider uses: *Earlier data to inform marketing, recruitment and benchmarking specifically, and planning and management information generally (as would have been useful during pandemic) enabling them to allocate funds between departments in line with student intake.*	Yes			Yes		
Timely data - alignment to student activity: *Smooths the load and enables data to be submitted closer to the event, more aligned with business processes and student activity.*	Yes			Yes		
Reduction of ad-hoc data collections: *Reduces need for ad-hoc in-year data collection for specific purposes (that cannot be used for benchmarking).*	Yes	Yes		Yes		
Timely data - UK wide comparison: *More timely comparison of UK wide data (subject to a UK wide approach to in-year data collection).*	Yes	Yes		Yes		
Streamlined Data Collection Process: *Enables removal of HESES and other routine in-year data collections.*	Yes			Yes		

Appendix B: Benefits as per Programme Documentation

Benefit	Requires in-year data collection ?	Beneficiaries				
		Statutory Customers	HESA/ Jisc	Institutions	SRS Providers	Students
Timely data - individualised data alignment: *Aligns with other sectors / businesses that have more timely individualised data, for example FE in Scotland, England and Wales is in-year already.*	Yes	Yes		Yes		
Collect Once use Many: *Delivering the foundation for in-year data collection that enables other data requests across providers.*		Yes		Yes		
In-year - Collect Once use Many: *Potential to use in-year HESA returns to satisfy other data requests across providers.*	Yes			Yes		
NSS Process Simplification: *In-year data may remove/reduce the need for a separate additions/exclusions process to be operated as more timely data on final year students will be available.*	Yes	Yes		Yes		
Leverage Reference Data Store: *Reference Data Store can be leveraged to deliver more efficient processes and more robust data management for Data Futures and beyond, including enhancements, value for providers and efficiency improvements for key tasks.*			Yes	Yes		
Reduction in manual delivery checks: *Improvements to processes and systems will reduce the need for time consuming, high effort manual checking of delivery outputs, by adding assurance earlier in the collection.*			Yes			
Automation of Delivery Spec: *The automation will lead to a more robust way of generating deliveries, removing the risk of divergence between published information and the deliveries. This work removes a manual step in the process which can add time delays to new schemas and make bug fixing easier by resolving the issue at source.*			Yes			

Appendix B: Benefits as per Programme Documentation

Benefit	Requires in-year data collection ?	Beneficiaries				
		Statutory Customers	HESA/ Jisc	Institutions	SRS Providers	Students
Provider Benefits: *Anecdotally, several providers have used Data Futures as a driver to improve governance, processes and standardisation of student data to improve quality at source or at an early stage, improving efficiencies and future proofing.*				Yes		
Provider Benefits: *Subject Access Request improvements - searches a wider range of resources without duplication of data including the live collection and uploaded files.*			Yes	Yes		
Data Retention: *Significant improvements to data retention requirements.*			Yes			
Improve coding manual publication: *Propagation of changes from refdata coding frames to coding manual reduces risk of error.*			Yes	Yes		
Rules creation and management: • *Ruleset versioning (basic initially; admin screens under BAU/post DF).* • *Faster rule changes - one change can fix many rules on HDP if derivations involved rather than changing each rule individually on current system.*			Yes			

Appendix C: Interviewee List

Category	Interviewee
Project Team	Jisc
Statutory Customers	Office for Students
	Higher Education Funding Council for Wales
	Scottish Further and Higher Education Funding Council
	Department for the Economy, Northern Ireland
Sector Bodies	Student Record Officers' Conference
	Higher Education Strategic Planners Association
	Universities & Colleges Information Systems Association
	Association of Heads of University Administration
	Academic Registrars Council
	Scottish Planners Forum
	Universities UK
	GuildHE
	Independent HE
	Welsh Student Returns Group

Appendix C: Interviewee List

Category	Interviewee
Student Records System Providers	Tribal
	Unit4 (Thesis)
	Quercus (Ellucian)
	TechnologyOne
	Unite (Education Software Services)
	Oracle
	Independent Consultant (works with multiple smaller providers)
Providers	The Open University (in-house student records system)
	The University of Manchester
	The University of Edinburgh
	University of the West of England, Bristol
	Queen's University Belfast
	The University of Bath
	Glasgow Caledonian University
	Bangor University
	London Business School
	Institute of Contemporary Music Performance
	Bloomsbury Institute
	Kaplan Open Learning
	Grŵp Llandrillo Menai
	Lancaster University (in-house student records system)
	Loughborough University (in-house student records system)
	Aberystwyth University (in-house student records system)

Appendix D: Steering Group members

Category	Interviewee
Steering Group Members	Independent Chair (Member of the OfS Audit Committee)
	Academic Registrars Council (ARC)
	Department of the Economy Northern Ireland
	Higher Education Funding Council for Wales (HEFCW)/Commission for Tertiary Education and Research
	Higher Education Strategic Planners Association (HESPA)
	Jisc
	Office for Students (OfS)
	Scottish Funding Council (SFC)
	Student Records Officers' Conference (SROC)
	Universities and Colleges Information Systems Association (UCISA)

Thank you

pwc.co.uk