

Data Transformation Strategy

Start



Data Transformation



Introduction



In 2022 the OfS approved its digital strategy, outlining the digital journey through to 2025. We committed to improving the student experience by using digital to more effectively regulate providers and deliver value to the taxpayer by improving our organisational efficiency and effectiveness.

A number of projects and programmes have been underway to help realise the objectives of the digital strategy and we are now in a position to outline the digital journey for our data services.

We committed to achieving this through focusing on the following:

- Improving the Provider Experience... by developing our digital solutions to make it easier for providers to share information, report events, upload data and see their history with us
- Increasing organisational efficiency & effectiveness... which will help us deliver value for money to the taxpayer and providers that fund our work
- Improving our transformation delivery and digital culture... enabling us to effect organisational change and develop our digital ways of working
- Ensuring we value and utilise our business data... so that we can use data intelligently and analytically to measure our performance and identify areas for improvements.

Effective data management has become a crucial factor in driving business success. At the OfS, we recognise the importance of harnessing the power of data to drive our strategic initiatives and achieve our digital and corporate vision.

Unfortunately, due to the outdated tools and technology we have limited capacity to adopt advanced data practices such as data science, management of big data, machine learning or artificial intelligence.

To this end, we have developed a comprehensive data transformation strategy that will guide our efforts to define our long-term data function, migrate to Microsoft Azure, and leverage data analytics to optimise our operations, enhance the student experience and deliver value.

Our data transformation strategy is designed to establish a robust approach to modernising the use and management of all data to help inform decision making and support our regulatory activity.

[See the vision >](#)



Vision and Missions

Our data transformation strategy outlines an approach that will help us deliver some of the objectives in our digital and organisational strategies. Running to the end of 2024, it covers the Data Transformation Programme for how we utilise data, our data culture, and how we deliver and implement digital change.

Our vision for data is...

We will collect, manage, share and use all our data more effectively to help regulate providers, support decision making and achieve our organisational mission.

We will achieve this through the following Missions:

Delivering a **Modern Cloud Solution** to securely collect, manage, use and share data.

Providing our existing data experts and regulatory colleagues with defined **Data Governance, Standards and Toolkits**.

Making it easier for providers and third-party stakeholders to **Share information**, report events, upload data and see their history with us.

Enhancing the data capability of the organisation, **Embedding a Data Culture** across the OfS that supports students through data-informed regulation

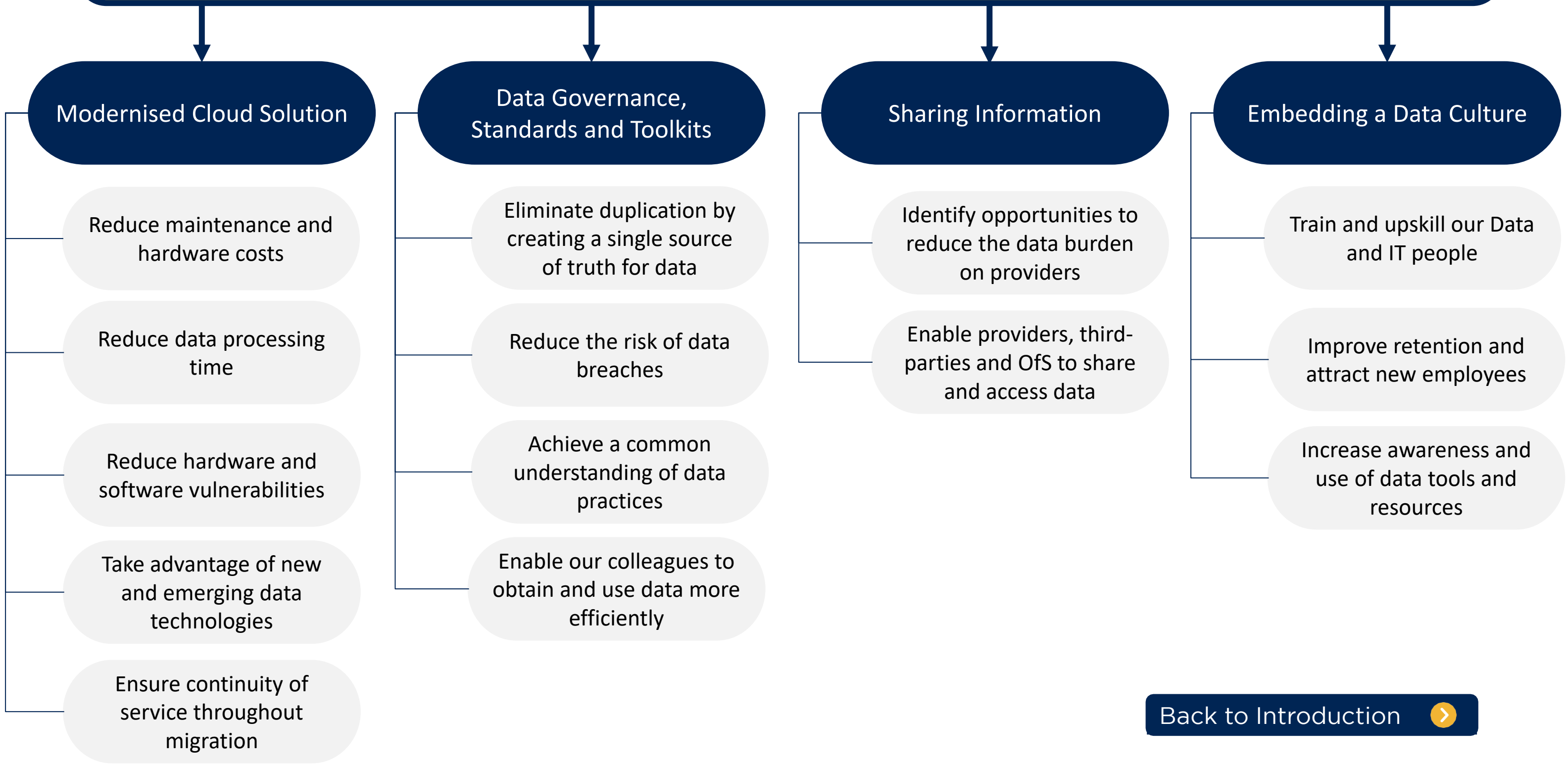
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Strategy overview

We will collect, manage, share and use all our data more effectively to help regulate providers, support decision making and achieve our organisational mission





We will deliver a modern cloud solution to securely collect, manage, use and share data

A modern cloud solution



Objective 1: Reduce the amount of maintenance and hardware costs

The OfS was established by the Higher Education and Research Act 2017. It merged the Higher Education Funding Council for England (HEFCE) and the Office for Fair Access. The data systems and data processes for the OfS were inherited from these organisations.

The current on-premise systems are outdated both in terms of their use and hardware/software capabilities. They are expensive to maintain and are at the end of their viable life. To replace these aging systems (like for like) would cost in excess of £1M, therefore we need to leverage the benefits of cloud solutions so that we avoid costly hardware replacement and reduce the annual cost of maintaining outdated hardware.

Objective 3: Reduce vulnerabilities in our platform

The existing hardware and software went end of life in April 2023. Whilst additional security updates have been purchased, this is limited in time and new vulnerabilities to the hardware and software need to be addressed.

Objective 5: Ensure continuity of service throughout migration

Moving to the cloud brings vast opportunities in the collection, management, use and sharing of data. However, we must ensure that the implementation of the new technology and ways of working does not come at the cost of our business-as-usual regulatory activity.

Objective 2: Reduce data processing time

To support our organisational strategy and with the advent of new technology and data services we want to reduce the burden and time on both providers and our staff in the data ingestion, analysis, transformation and output processes.

Objective 4: Implement cloud solutions to take advantage of appropriate new and emerging technologies

When the original SAS software and hardware was implemented the system, solution and use of data was current and staff enjoyed leveraging the benefits that new technology brings. As time has gone on this leverage has been lost and due to the on-premise nature of the hardware and the restrictive nature of the software it would be difficult and costly to remain ahead. The adoption of cloud services provides the flexibility to be able to easily leverage appropriate new and emerging data technology and techniques so that the OfS can remain current and up to date. This in turn will help attract data talent.

[Read more](#)

[Read more](#)





A modern cloud solution

We will deliver a modern cloud solution to securely collect, manage, use and share data



Required activities

- **Define new system solutions**
 - Define solution requirements
 - Solution design
 - Consult Microsoft for advice and options
 - Define a knowledge base
- **Build and implement new system solutions**
 - Build new platforms
 - Implement new technology
 - Train colleagues in new technology & processes
 - Define standards
- **Migrate existing required data processes**
 - Define migration approach
 - Identify & document key processes
 - Process design
 - Data and process migration
- **Decommission legacy systems**
- **Define and implement automation**
 - Process automation
 - Test automation

For staff this will mean

- Improved ways of working for our technical and data experts, enhancing existing skills with up-to-date current technologies and systems
- Having quicker and easier access to the right data to make informed decisions
- No disruption to business as usual as the new systems and ways of working are implemented

Risks

There is a risk we focus too much on replacing the existing technical functionality at the expense of delivering an improved service. This will be mitigated by conducting user research focused on defining requirements, not technology

This will be measured by

- New platforms live and in place.
- Cost avoidance in 2024 of purchasing new replacement hardware for existing system/s
- No downtime on BAU as a result of implementing new services
- Longer term improvement in staff retention for data experts

Dependencies

- Legacy technology security updates
- Availability of internal resources to complete business analysis

Assumptions

We have enough of the right resources to define, implement and migrate to the new systems

Objective 1: Reduce the amount of maintenance and hardware costs

Objective 2: Reduce data processing time

Objective 3: Reduce vulnerabilities in our platform

Objective 4: Implement cloud solutions to take advantage of appropriate new and emerging technologies

Objective 5: Ensure continuity of service throughout migration



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Data Governance, Standards and Toolkits



We will provide our existing data experts and regulatory colleagues with defined data governance, standards and resources

Objective 1: Eliminate duplication by creating a single source of truth for data

To perform our role as a regulator we rely on accurate up to date data in order to make informed decisions.

Currently there is no defined organisational level data model to ensure everyone is using and referring to the most accurate up to date information for decision-making.

By creating a single source of truth for **ALL** our data across all our systems we will ensure that decision making is consistent, accurate and applicable at all times.

Objective 2: Reduce the risk of data breaches

We will ensure that technical and other safeguards are put in place to avoid human error in the course of receiving, managing and sharing our data.

Objective 3: Achieve a common understanding of data practices across the organisation

We will define and implement a data governance framework that encompasses data governance principles, responsibilities, processes, policies and standards. Different from a standard governance approach, the data governance framework will set out how we will manage, use and store data.

We will develop a training and awareness programme to ensure all our staff have a common understanding of what is meant by 'data' and how we access, use and share data in the course of our work

Objective 4: Enable our colleagues to obtain and use data resources more efficiently

We will provide tools and services to our data experts and our regulation colleagues to enable them to self-serve the data they need in the course of their regulation activity

[Read more](#) 

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Data Governance, Standards and Skills

We will provide our existing data experts and regulatory colleagues with defined data governance, standards and resources



Required activities

- **Define master data model**
 - Recruit expertise
 - Define entities, attributes & relationships
 - Implement data model
 - Document & communicate the data model
 - Establish processes & responsibilities for ongoing maintenance & enhancement
- **Implement Data Governance Framework**
 - Implement data quality controls
 - Define & implement data governance standards & policies
- **Implement data practice awareness and training**
 - Define data governance and policies training
 - Define data resources and training materials

Required activities (continued)

- **Provide self-service analytics capabilities for colleagues**
 - Implement user friendly data discovery tools
 - Deploy self-service analytics platform
 - Define data security model for self-service users

For staff this will mean

- Access to self-serve provider dashboards, giving visibility of data from across all our systems
- Improved data outputs to help informed decision making
- Clearer understanding of data, how it should be used and how technology is used to avoid data breaches

Dependencies

- New systems and solution design
- Business analysis

This will be measured by

- Self-service dashboards in place and being accessed (used)
- Reduction in data breaches
- Training and awareness courses in place and being used

Risks

There is a risk that due to time constraints we do not take the time to define the data model, which would result in the objectives and mission not being achieved and **we would lose the opportunity to enhance our decision making or enable operational efficiencies**. This will be mitigated by bringing in expertise to help define the model quickly and the programme board to oversee progress

Assumptions

We are able to access the right external expertise (Microsoft) to help define the data model
Data Maturity assessments and DPIA's will be carried out

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Objective 1: Eliminate duplication by creating a single source of truth for data

Objective 2: Reduce the risk of data breaches

Objective 3: Achieve a common understanding of data practices across the organisation

Objective 4: Enable our colleagues to obtain and use data resources more efficiently

Sharing Information



We will make it easier for providers and third-party stakeholders to share information, report events, upload data and see their history with us

Objective 1: Identify opportunities to reduce the data burden on providers

A key deliverable in our organisational strategy is to reduce the regulatory burden on providers wherever possible.

We will seek to identify opportunities (both technical and non-technical) to reduce the burden on providers in the course of the OfS requesting, identifying, collecting, uploading and receiving data.

Objective 2: Enable providers, third-parties and OfS to share and access data more efficiently

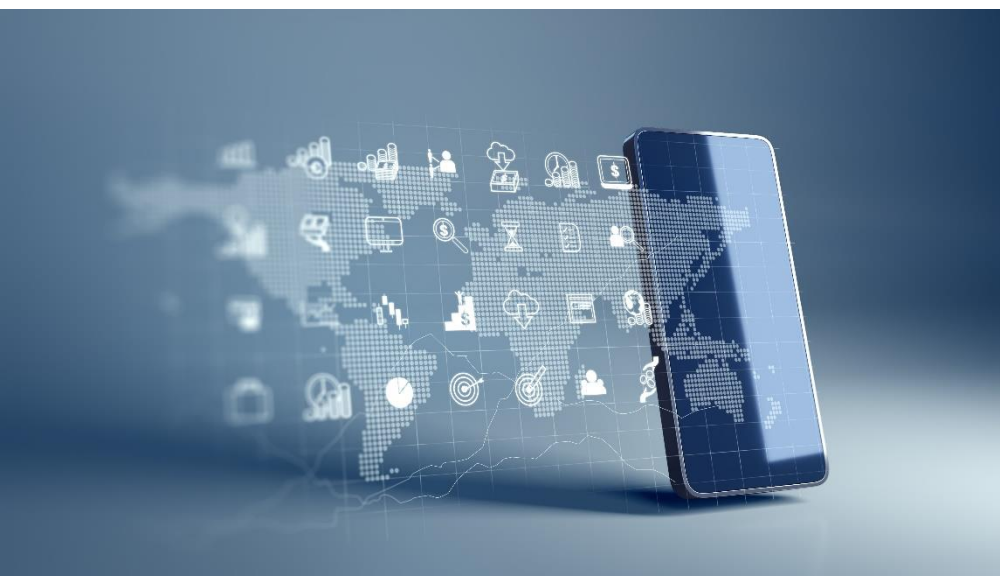
Wherever possible we will seek solutions to reduce the burden on providers and third parties (such as JISC) by implementing easy to use, efficient tools to appropriately share and access OfS data.

[Read more](#) 

[Read more](#)

Sharing Information

We will make it easier for providers and third-party stakeholders to share information, report events, upload data and see their history with us



Required activities

- **Undertake Provider engagement**
 - Conduct User research to understand provider needs
 - Establish continuous feedback mechanism
- **Undertake Internal engagement**
 - Undertake working groups with wider business
 - Review existing data outputs with regulatory colleagues
- **Other stakeholder engagement**
 - Undertake working groups with third-party stakeholders
 - Establish continuous feedback
- **New portal for data sharing and collection**
 - Review and enhance how we collect and share data
 - Implement data sharing on cloud-based strategic portal

For staff this will mean

- Reducing the time required to support Providers and third-parties in the course of uploading and receiving data to/from the OfS
- Reduce the amount of manual data validation, leaving more time for analysis
- Providing an easy to maintain sharing platform, reducing the technical input and oversight

Risks

There is a risk we may not get a wide and deep enough view of provider needs and focus a solution on too narrow a cohort. This will be mitigated by working with regulatory colleagues to identify the right mix of providers

This will be measured by

- Data sharing solution in place
- Positive stakeholder feedback received
- User research and engagement, demonstrating progress and risk mitigations

Dependencies

- Strategic portal must be defined before the data collection and sharing opportunities can be properly identified
- Internal resources to support provider engagement

Assumptions

We have enough dedicated internal resource to design and deliver the portal.

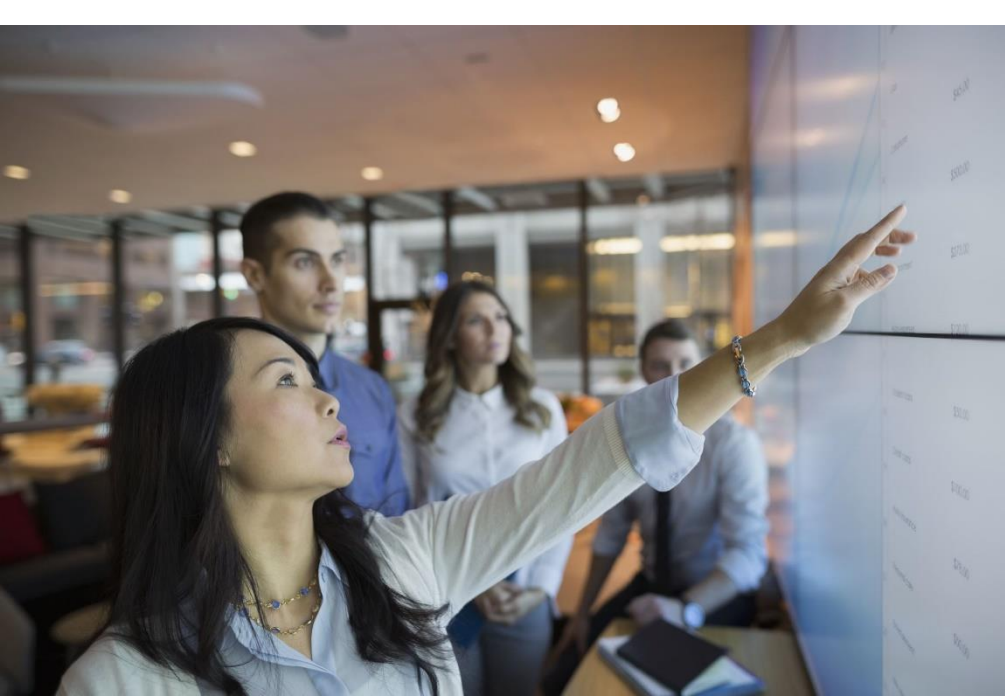
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Objective 2: Enable providers, third-parties and OfS to share and access data more efficiently



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Data Culture



We will enhance the data capability of the organisation, embedding a culture across the OfS that supports students through data-informed regulation

Objective 1: Train and upskill our Data and IT people to understand and use the new technology systems

Define a comprehensive training approach and plan to upskilling our existing experts on the new technology systems, understanding the individual training requirements and utilising on the job learning wherever possible

Objective 2: Improve retention and attract new employees with modern technology and processes

Leverage the opportunity of working with new and flexible data solutions to retain our existing data and IT experts and to attract new talent with the opportunity to enhance and modernise their own skills.

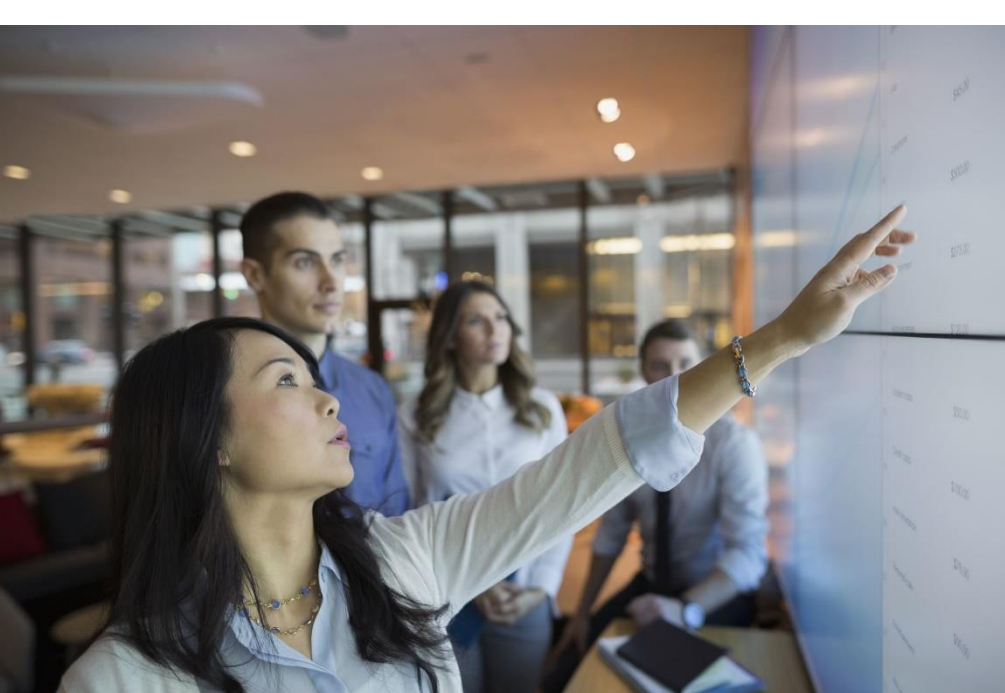
Define a long-term strategy for data that captures all the long-term benefits that the modern technology and processes will bring.

Objective 3: Increase awareness and use of data tools and resources

Define a training and awareness programme for OfS colleagues to understand the new services available to them and how to use the tools available to leverage information to support their decision making.

[Read more](#) 

[Read more](#)



Data Culture

We will enhance the data capability of the organisation, embedding a culture across the OfS that supports students through data-informed regulation



Required activities

- **Deploy industry standards and approaches**
 - Reference government and industry standards and principles in our data practices
 - Define training plans for induction
- **Technical training for DFA/IT**
 - Carry out training needs analysis
 - Define training plans
 - Define continuous professional development plans
 - Define and conduct training for trainers
 - Carry out training
- **Devise long-term organisational data strategy**
 - Define target operating model for data function
 - Review data principles
 - Define long term approach to continuous improvement

Required activities (continued)

- **Define organisation-wide data awareness training and materials**
 - Carry out training & awareness needs analysis
 - Define training and awareness plans
 - Define continuous feedback mechanism
 - Define and conduct training for trainers
 - Carry out training

For staff this will mean

- Improved, more streamlined and consistent methods of training
- Improved job satisfaction for technical staff.
- Clear direction of travel for the data function
- Confidence in data use across the organisation

Dependencies

- New technology platforms in place

This will be measured by

- Technical training completed for data and IT experts
- Long-term organisational data strategy approved
- Training awareness completed for OfS colleagues

Risks

There is a risk that individuals across the organisation are busy with BAU and get 'data fatigue', missing the opportunity to understand the new data and tools available to them. This will be mitigated by comms and the use of change champions

Assumptions

Staff will be available for training
Change champions can be utilised for the data transformation

Objective 1: Train and upskill our data and IT people to understand and use the new technology systems

Objective 2: Improve retention and attract new employees with modern technology processes

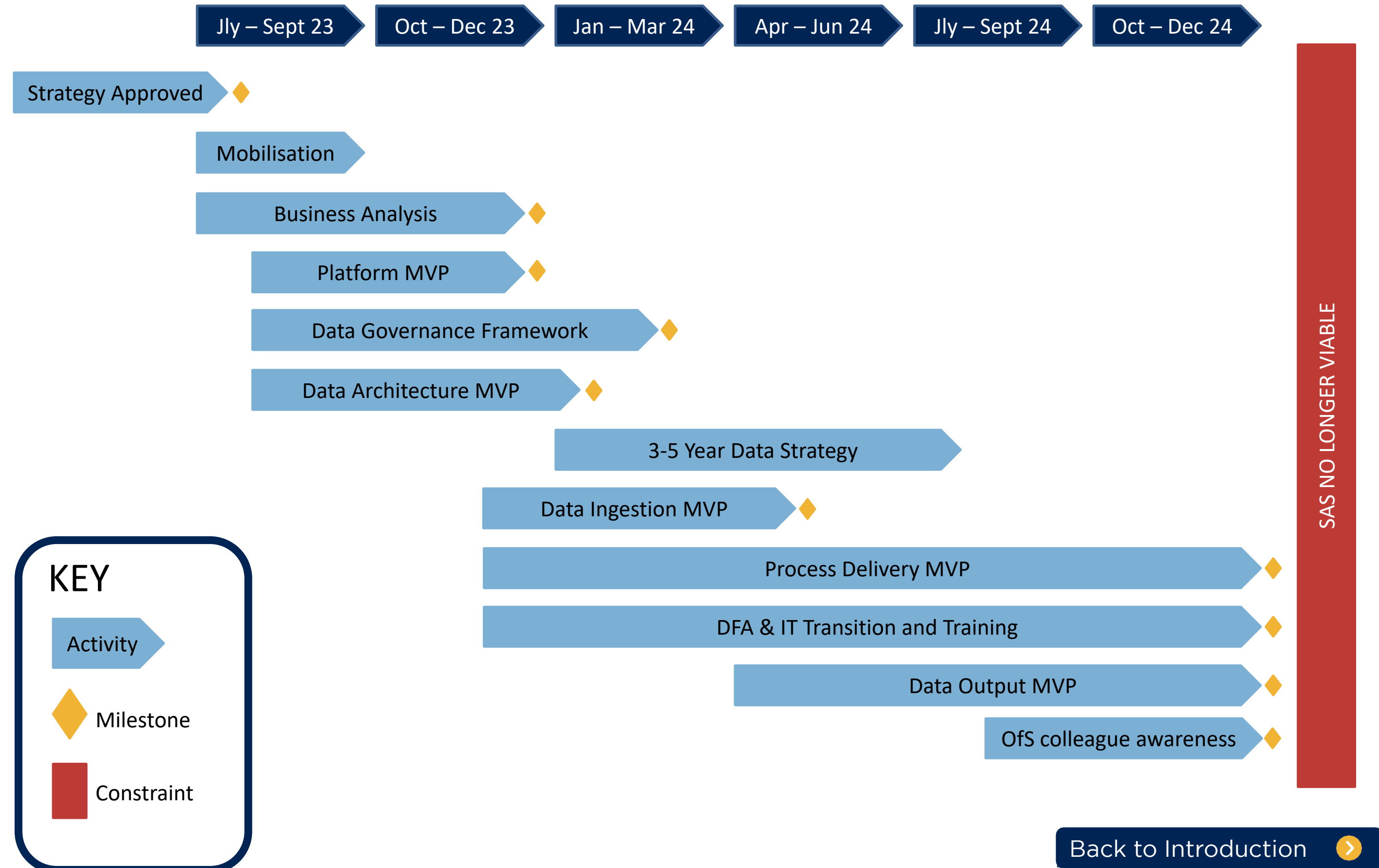
Objective 3: Increase the awareness and use of data tools and resources across the organisation



Data Transformation



Roadmap - Timeline





Outline Resources

Resource Plan

- The resources defined are based on what we currently know, and the objectives defined
- An agile approach will be used; therefore, the plan may be subject to some change as the deliverables move forward
- **The resources defined are to deliver the data transformation and do not reflect the final structure or headcount**
- Some roles defined in the resource plan may use existing job titles, but they may not necessarily relate to the same role or pay bands
- An objective of the project is to deliver a long-term strategy. This will include defining the future data function operating model and structure. It is therefore expected that the final 3 to 6 months of the project will start to morph into the final structure, so are likely to look different than those defined below





Outline Resources

Technical Resource (DFA and IT)

Posts (FTE)	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24
Automation Engineer (Infrastructure)	1	1	1	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.3	0.3
Business Analyst	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Data Analyst	0	0	0	0.5	1	2	2	5	5	10	10	10	20	20	20	20	20
Data Architect	1	1	1	1	1	1	1	1	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Data Engineer	1	1	1	1	2	3	3	3	3	3	3	3	3	3	3	3	2
Data Governance Specialist	0	0.2	0.2	0.2	0.5	1	1	1	1	1	1	1	1	1	1	1	1
Data Manager	0	0.2	0.2	0.2	0.5	1	1	1	1	1	1	1	1	1	1	1	1
Data Product Owner	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Data Product Specialist	0	0	0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Data Scientist	0	0	0	0.5	0.5	2	2	2	3	3	3	3	3	3	3	3	3
Data Transformation Delivery Manager	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Data Transformation Programme Manager	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
DFA SME (Finance & Provider-level Regulation)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
DFA SME (Sector-level policy & funding)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
DFA SME (Student Survey & Data Assurance)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Digital Solution Developer	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0
Head of BI & Reporting	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Head of Data Analytics	0.5	0.5	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Head of Data Engineering & Technical Solution	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Head of Data Governance	0.5	0.5	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Head of Data Science	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
IT Security	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Power BI Developer	0	0	0	0	0	0.5	0.5	0.5	1	1	1	1	1	1	1	1	1
Project Manager	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Scrum Master	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
Senior Data Analyst	0	0	0	0.5	1	2	2	5	5	8	8	8	15	15	15	15	15
Senior Data Engineer	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Senior Data Scientist	0	0	0	0.5	0.5	2	2	2	2	2	2	2	2	2	2	2	2
Senior Responsible Officer (SRO)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Solution Architect	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Specialist Business Analyst	1	1	1	1	0.5	0	0	0	0	0	0	0	0	0	0	0	0
Test & Release Analyst	0	0	0.5	0.5	0.5	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Red Text = External Resource Required

Orange Text = Partial External Expertise Required

Last 6 months subject to change following long term strategy development

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Outline Resources

Business Resource and Summary

Business Resource

Posts (FTE)	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24
Admin Support	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
HR Advisor	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.5	0.5	0.2	0.2	0.1
Programme Comms	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DPO	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Regulation Directorate SME	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Regulation Directorate SME	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Regulation Directorate SME	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Corporate Governance	0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Summary of Resources

Business Area FTE	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24
Business	1.2	1.7	1.3	1.3	1.3	1.3	1.3	1.3	1	1.1	1.2	1.4	1.4	1.4	1.1	1.1	1
IT	5.2	5.2	5.7	6.1	7.6	7.6	7.6	7.3	7.8	7.8	7.3	7.1	7.1	7.1	7.1	7.1	7.1
DFA	3.8	3.8	3.8	6.3	7.3	11.1	11.1	17.1	18.1	26.1	26.1	26.1	43.1	43.1	43.1	43.1	43.1
DFA / External Combined	1.2	1.6	1.6	2.1	2.7	5.5	5.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
External	2	2	2	2	1.5	1.5	1.5	1.5	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5
DFA / IT Combined	1	1	1	1	2	3	3	3	3	3	3	3	3	3	3	3	2
Grand Total	14.4	15.3	15.4	18.8	22.4	30	30	36.7	38.4	46.5	45.6	45.6	62.6	62.6	62.3	62.3	61.2



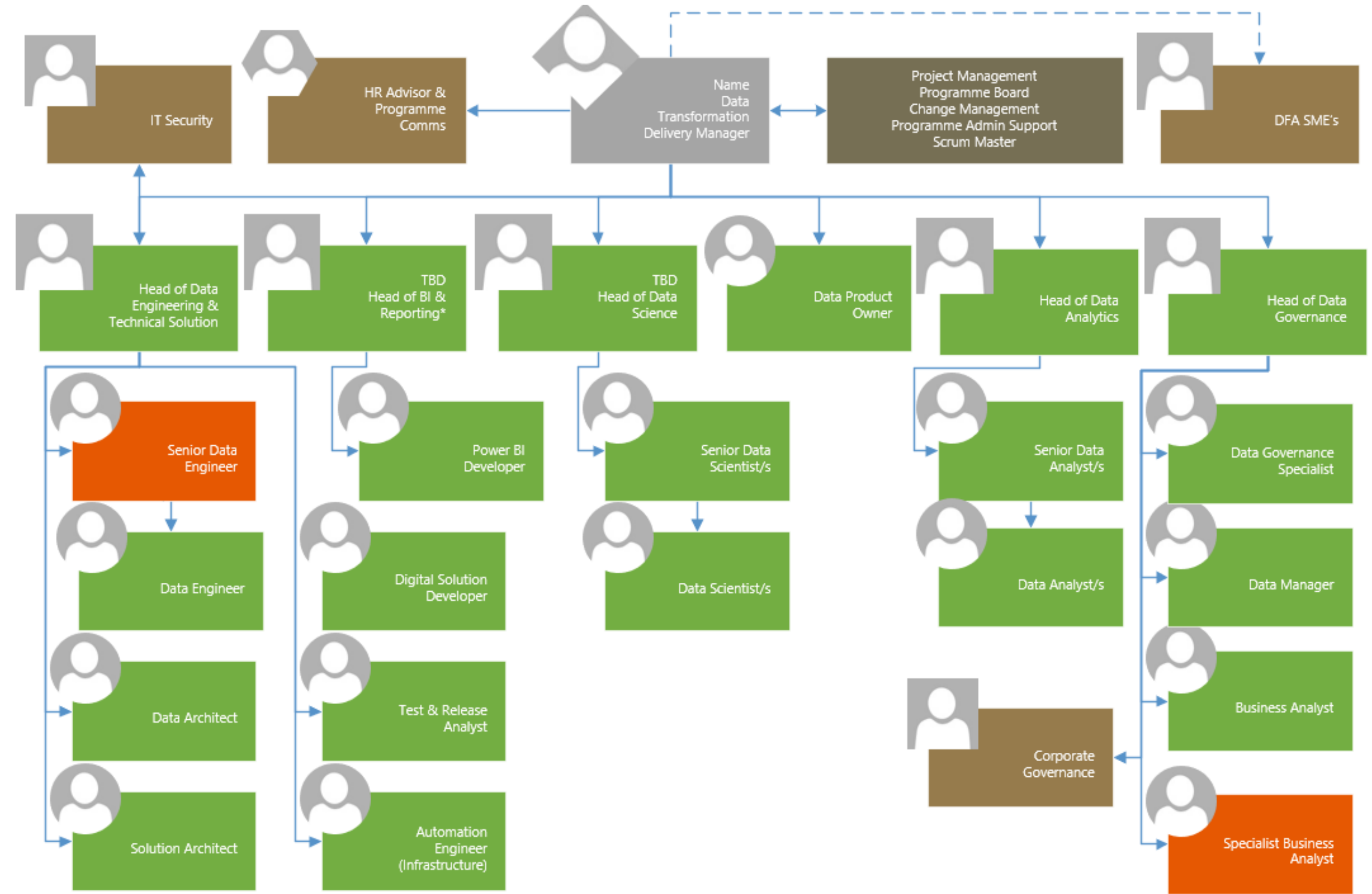
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Last 6 months subject to change following long term strategy development

Data Transformation



Strategy structure (programme)



Data Transformation



Programme Delivery & Governance

