The UKCloud Data Assessment Service

ukcloud

Data sits at the heart of a sustainable digital transformation. Yet, many public sector organisations face difficulties when it comes to using their existing data for evidence-based planning and decision making.

Following our recent State of Digital and Data report – where 43% of respondents agreed they aren't confident that their organisation's data is stored appropriately for its security classification - this document demonstrates how UKCloud can help you extract more value from your existing data and deliver better, more cost-effective services to UK citizens.

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About UKCloud

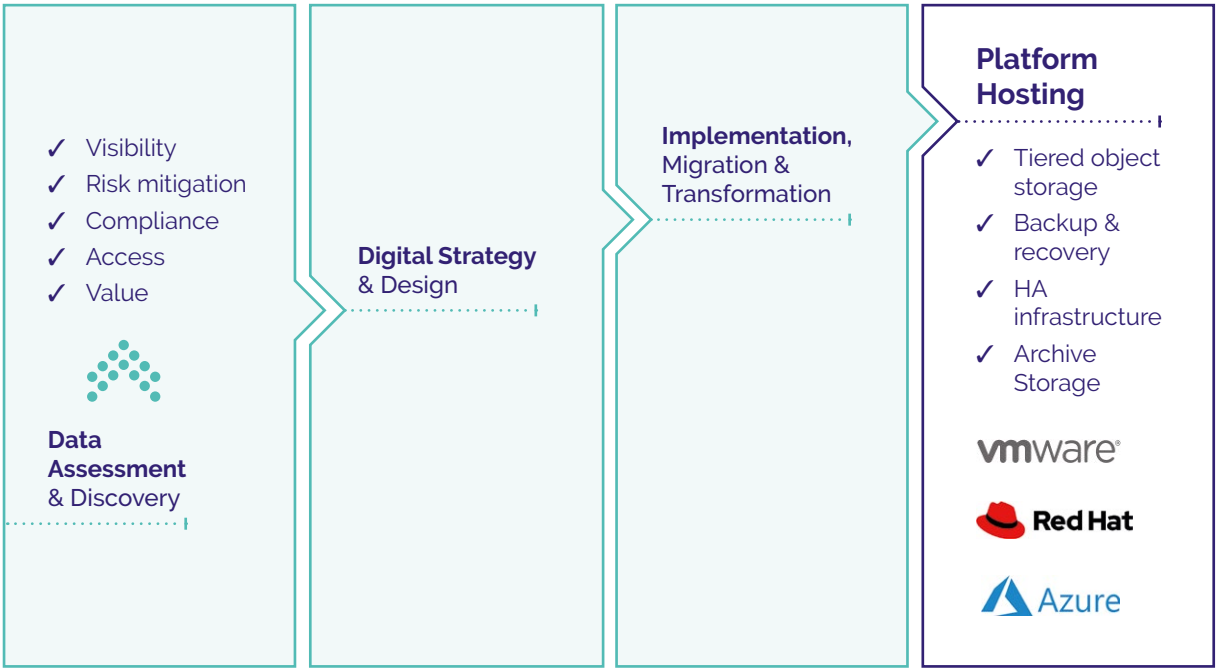
UKCloud focuses specifically on the UK public sector.

As a result, we can provide a data solution that is suitable for organisations with strict processes in place for security, access and assurance..

Our data solution is highly secure but flexible and easy to understand. Our solution simplifies the decision-making process by offering transparent pricing and avoiding hidden charges and complicated storage options.

We enable organisations to realise increasing value from the data they hold within their IT estate. By leveraging our ecosystem of technology partners, we help organisations discover and classify their data. Then, through an agreed internal data strategy, we define efficiencies and suggest appropriate tooling to drive innovation and actionable insight from that data.

Figure 1: Data Assessment in the context of digital transformation



Digital strategy

Customers can use our Professional Services based on their requirements and constraints. We use our skills and experience with best-of-breed technologies and digital platforms to offer custom solutions.

A data consultancy can provide advice on continuity, protection, tiering and staging solutions. Mitigating some of the risk of decision making and driving proven budget efficiencies.

Leading with data

The sheer scale of data ownership and governance, alongside a lack of subject matter knowledge, often stops organisations from planning for strategic digital change before they start. At UKCloud, we lead digital strategy by first identifying what data an organisation holds.

In our experience, understanding the operational objectives and how those will impact their data is the key driver of an organisation's digital strategy. We use our Data Assessment service as a discovery and planning exercise to inform and drive the digital strategy methodology.

Figure 2: Governance informs architecture choice and decision making

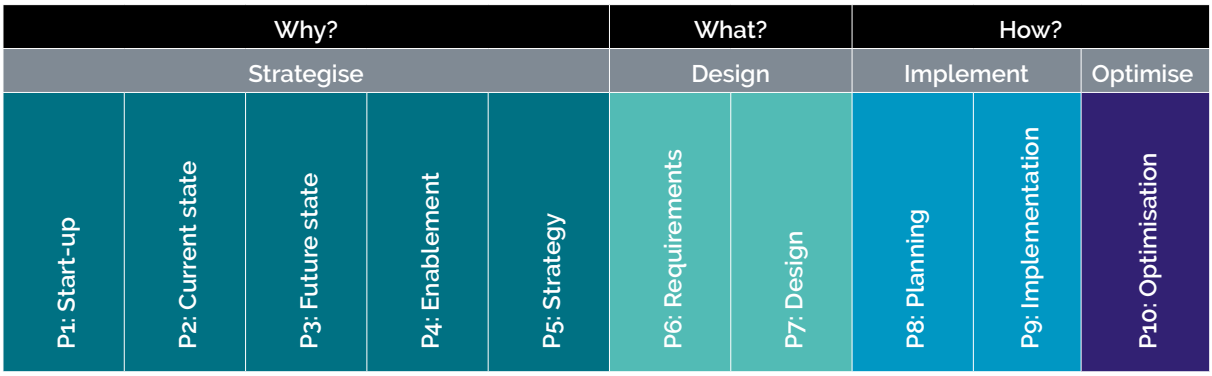
Benefits of data governance

We've helped many organisations with considerable data footprints to better understand their data landscape and inform their digital transformation activities, in order to:

- Save storage spend through the use of cloud and on-premises services
- Remediate the risk of loss and non-compliance
- Improve control, access and user experience

Transformation governance sits at the heart of our professional services methodology. Ensuring that requirements are subject to a rigorous discovery process and solutions are drawn from both best practice and innovation.

Figure 3: UKCloud transformation methodology



Unstructured data

Unstructured data (files) typically accounts for 80% of the data footprint in an organisation[1].

Governance of unstructured data brings organisations a number of benefits:

- **Optimisation** — cost control of storage, backup and resiliency
- **Risk** — understanding and avoidance – privacy, ransomware, theft
- **Compliance** — data privacy, sovereignty, response (SARs), internal policy
- **Access** — processes and privileges (RBAC)
- **Value** — generation of value and insight from 'dark data'

Balancing value and risk

During our Data Assessment service, we apply a data governance maturity model to inform our next steps and ensure your data-led digital transformation is a success.

Figure 4: Considerations for data governance maturity

Governance & enablement	Locate & minimise	Search & analyse	Monitor & control	Protect & recover
Organisational readiness	*Visibility & confidence*	*Interaction with data*	*Tools & processes*	*Best practices*
• Planning • Requirements—objectives and outcomes • Maturity • Policy • Strategy	• Decision making • Cost control • Compliance & risk management • Classification	• Discovery & search • Analytics • Derived value • Ethics and compliance	• Usage & access • Security • Data governance • Cross domain control	• Business continuity • DR and ransomware • Data protection

1. Gartner 2018 & 2020

The data assessment

The UKCloud Data Assessment service offers a way of gaining visibility of the problem and provides quick wins to address cost, risk/compliance and the benefits of improving access and gaining value from data.

The assessment can act also as a discovery phase within a strategic transformation.

Assessment outcomes

The assessment builds out a list of valuable, actionable insights through six phases and provides the following documented findings:

Phase 1 – Classification

During an assessment we identify a number of data classes and the location and inferred ownership of unstructured files within a sample of the organisation's estate.

It is possible to classify files to a highly granular degree; however, at this stage, typical classes of data may include:

- Unusable / inaccessible formats (for example, tape and paper records)
- Old or aged data (everything older than X years)
- Data belonging to a specific group (for example, HR, research team, risk team)
- Illegal formats or data at risk

Once identified, you can then manage data classes according to policies – such as, how long to retain a type of document for, what tier of security is required and who may access it.

Phase 2 – Retention policies

Organisations should document retention rules for all types of data to remain compliant with regulations such as GDPR and their own sector legislation.

The assessment defines up to three candidate policies that can be applied to the sample files identified in Phase 1.

Policies may include:

- Level of importance
- Levels of security tier
- Access controls

Phase 3 – Data volumes

Phases 1 and 2 drive out the requirements and likely volumes of storage, informing storage architecture decisions, including:

- Where volumes of data may reside (tiering and archiving)
- Performance and access requirements
- Security and sovereignty considerations

Phase 4 - Data architecture

The assessment team considers the current data landscape alongside the future requirements for data in the organisation and proposes a high-level target architecture:

- Technology choices – on-premises, cloud and hybrid options
- Reference architectures – best practice for high availability, resilience and data protection
- Cost implications – storage, compute and ingress/egress charges

Phase 5 – Transformation and business case

The architecture and technology choices will inform the business case and the activity timelines for delivering a transformation plan:

- Costed TCO for the future state and an ROI
- Transformation plan – high level, including costs and showing key dates

Phase 6 – Business as usual

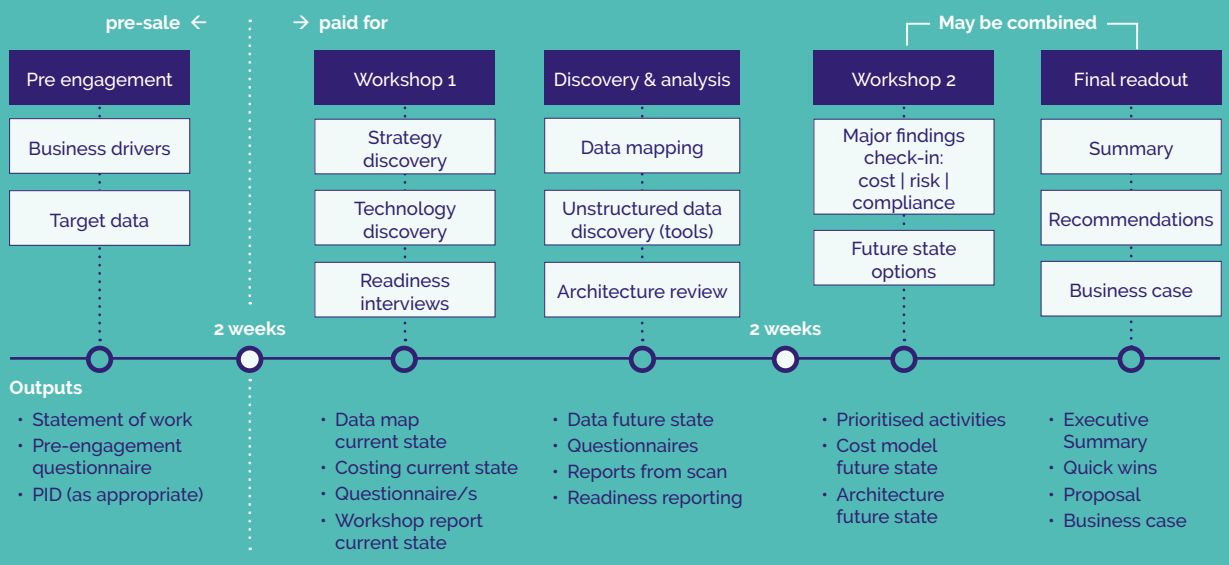
The assessment considers how files may be governed going forward.

- Proposed file governance processes
- Periodic reviews – requirements, classes, policies and architectural choices

Data assessment process and timeline

- Workshops may be held onsite or remotely if required:
- The tool can be installed and managed remotely
- We connect to the data (for example, files and file servers) in situ; no files move and the file metadata is not affected or changed
- The engagement process is typically: **requirements workshop > remote work > reporting workshops**

Figure 5: Data assessment timeline



Assessment method & reporting

The reporting has a number of elements:

- **Recommendations based on all the reports**
  - Quick wins
  - Proposed activities to mitigate the above points
  - Business case for action
- **Map of the unstructured data – organisations may already have this but seldom is the entire estate visible and understood**
- **Reports on file metadata**
  - Types, volumes, locations, age, usage
  - Inferred ownership
- **Reports on specific content – personal/sensitive information**
  - The tool can search for general 'regular expressions' or specific content, like data that has been dumped from a database into .xlsx
- **Impacts of the findings in the reports**
  - Risk and compliance issues presented by personal information, database data, access controls not in place
  - Cost savings by using other storage paradigms, for example cloud or tiers
  - Data protection and DR best practices, including backup, immutable copies and high availability

Figure 6: Data assessment activities and outputs

As-Is

Data map
High level inventory of customer's data sources (Tool report, MS Excel or Visio)

Data visibility report
Report on age, type, usage, ownership, c20TB unstructured, based on meta data

Data classification document
Classification Report on Personal / Sensitive / Custom content in file data & policy by class

Readiness / gap analysis
Gap analysis based on best practice from a survey

To-Be

Recommendations
Documented risks, mitigations and best practices

Business case
High level cost benefit / TCO comparison: As-is / To-be

Program plan
Proposal for transformation: estimated timeline & resource profile

Solution architecture
Conceptual / reference architecture based on the high-level requirements and best practice

Typical findings

In summary, the UKCloud Data Assessment service is expected to provide organisations with a picture of their data estate, including high level classification and volumes of the file data based on age, type, usage, ownership and content.

From this information, we can propose, plan and cost a potential future state and provide a business case for the suggested change.

Following an assessment, we will make recommendations for your wider digital strategy as well as immediate, practical data management advice, including:

- Tiered object storage
- NAS for files
- File archive

High-level summary scan findings (Example)

From a customer who set a basic set of objectives around classes of personal information and controlled file types.

Scan Findings

- Total files 8.6M
- Accessed 70% not accessed for 2 years
- Classes – records (files) containing specified personal data sets
  - Customer 4.6K
  - Employee 3.5K
  - Supplier 5.8K
- Risk
  - 186K DB files – containing sensitive information
  - 703K Non-compliant with IT policy – poor governance

Recommendations (MINIMISE, MONITOR)

	Archive up to 70% - Cost Control	
	Set Retention Policy - Compliance	
	Reduce Leakage Risk - Compliance	

Maturity reporting (Example)

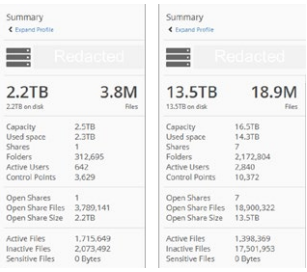
Step 1: Locate & minimise	***Location and Organisation of Personal Information –*** *Article 30*	**Current State**	**Day 1 State**
Task 1 – Document sensitive data held	This is a proposed remediation	1	
Task 2 – Identify policy / actions to be taken	Overall policies are documented. Needs transcribing into actionable remediation	5	
Task 3 – Classify unstructured data	Currently can be grouped by usage, age and location. No class for Sensitive Data	6	
Task 4 – Apply retention policies	Unable to apply retention policies – file management solution is recommended	4	
Step 2: Search	***Respond to Subject Access Requests –*** *Articles 17, 17a,18,19*		
Task 5 – Identify Subject in SAR process	Processes defined. Identifiable search terms for individuals and data subjects	7	
Task 6 – Classify SAR Results	Limited automated prescreen for relevant personal data	4	
Task 7 – e-Discovery Case Management	Process defined. Tools available for case management. Good track record.	7	
Step 3: Monitor	***Respond to Data Breach -*** *Articles 5, 15, 16, 17, 18, 20, 24, 35, 42, 44, 45, 55*		
Task 8 – Usage Reporting	Recommend monitoring & reporting be put in place as following engagement	3	
Task 9 – Usage Notification	Recommend notification be put in place as following engagement	3	
Step 4: Protect	***Backup and Keep Available -*** *Articles 5, 25, 32, 33, 34, 35*		
Task 10 – Backup & Recovery Strategy	Current strategy exists. Not assessed in current scope	7	
Task 11 – BC Strategy in Place	Current strategy exists. Not assessed in current scope	5	

Summary report (Example)

Through our tools analysis and interviews, our consultants have an understanding of our customer's approach to Information Governance. Departments engaged: IT, Storage, Records Management and 'Leadership'.

Overall Findings | **Ad Hoc** | **Reactive** | **Challenged** | **Managed** | **Optimised**

- **30% non-compliant files ~ 75% not accessed for 12 months ~ 25% high risk data**
- **Visibility of unstructured data: AD HOC**
  - Lack of cost control and IG compliance
  - Increased risk through non-compliant data access and unclear ownership
- **Awareness and Adoption of Information Governance : REACTIVE / CHALLENGED**
  - Classification – Unclear process for segregation of data
  - Policy for retention – Clear policy laid out by department – no strategy for enforcing policy
  - Automation of Disposition – Lack of indexing capability or actionable environment



Appendix 1: Typical challenges for organisations to address

When it comes to data strategy, inactivity and inertia cost money and leave risks unaddressed. There are many reasons that governance of file data does not happen. The table below lists some of the practical blockers - both real and perceived.

In the end, good data governance is part of overall digital governance, which in turn underpins business governance. Ownership and accountability remain with your organisation and cannot be left to someone outside your organisation without due governance of its own.

43%

Awareness and Ownership

43% of respondents aren't confident that their organisation's data is stored appropriately for its security classification[2].

Organisational challenge	Addressing the challenge
The sheer scale of the data ownership and governance challenge: data volumes and formats, classification and policy, regulation and compliance. Complexity and abundance of solutions.	Organisations need to identify routes to address this costly problem; Where they lack knowledge, skills or bandwidth successful CIOs consider bringing 3rd party's expertise in governance and delivery Initially, identify easy wins, perhaps using partial solutions: Organisations should avoid the temptation to "boil the ocean".
Lack of subject matter knowledge: (where to start, 'how to mark my suppliers' homework').	Using 3rd party services, especially for requirements gathering and data analysis is recognised by Gartner to bring success.
Lack of maturity / visibility to make decisions. Inability to prioritise, find budget. Lack of breadth of knowhow required to build requirements.	Enable knowledge within the organisation. Empower decision making and use external expertise in advisory and assessment roles to unblock the impasse. Create a Change Management Office (CMO) as part of the CIO office. The CMO takes in requirements and turns out baked projects each having priority, budget, resources and measurement.

2. UKCloud – State of Digital and Data Report 2021

Organisational Maturity

89% of leaders admit they dedicate only 20% of their time to innovating ways to unlock data[3].

Organisational challenge	Addressing the challenge
Lack of budget and time.	Budget shortage happens in all organisations. Prioritisation is a cornerstone of the CMO. Finding quick wins, such as reduction of data footprint, are part of larger transformation, and will identify cost savings.
Lack of understanding of the value that Information Governance will deliver. Lack of understanding by procurement, little inter departmental communications between infrastructure/storage and IG teams.	Organisations should create enablers & provide governance at and above the transformation programme level, to provide: awareness, org structures, policy, stewardship. Build business cases showing TCO comparisons and ROI for transformational investment.
Difficulty identifying stakeholders and stakeholder management. Data governance is perceived as a storage problem not an organisational one.	Starting from such a base level of maturity, the organisation needs to consider the major drivers of cost, risk and compliance. And put in place organisational enablers as part of governance. Look to a 3rd party for a professional services approach.
Lack of compelling drivers – The GDPR, cost control, recovery risk, compliance failure are NOT seen as sufficient reason to act.	Addressing file data can provide budget back through cost saving and allows 'show back' costs to the Operating Units in an organisation. Public bodies are beholden to the public and ICO to demonstrate effective data governance.

Technology Solution Maturity

45% of organisations say they're not confident that they can safely and easily share data to effectively collaborate with partners and other agencies[4].

Organisational challenge	Addressing the challenge
Challenges of finding a complete DLM solution. Classification and retention management at granular level is hard (and expensive).	Address DLM at a higher level initially, looking at quick wins. Leave detail to be dealt with in follow up phases or by alternate data classification definitions.
Collection, usage and sharing of data has too many social, regulatory and ethical hurdles.	Chief Data Officers must provide confidence through their platform choices – addressing security, compliance and also sovereignty of data.
Lack of technology deployment skills e.g. Backup & Recovery, Database Admin, DevSecOps.	Technology skills can be problematic to own in-house. As part of procurement organisations must ensure a balance of 3rd party and follow-on skills exist to support the outcome.
All data will be in the cloud or outsourced. Data governance is therefore someone else's problem; we have moved the responsibility / accountability out.	Data governance, that is: resilience of the platforms, data protection (BU/R), privacy, compliance, cost control remains the responsibility of the data owner. This never passes to the Cloud Service Provider (CSP).
There is an existing project to move all services, applications and/or data to Azure, GCP, AWS, M365.	Well run organisations accept that data should be classified to some degree prior to migration (you tend to leave your skip at old house).

3. UKCloud – State of Digital and Data Report 2021
4. UKCloud – State of Digital and Data Report 2021

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