

CIVICA



G-Cloud 15 Service Definition Document

Cloud Data Engineering Services

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1. Cloud Data Engineering Services

1.1. Introduction

This is the Service Definition Document for Civica UK Ltd (Civica) Cloud Data Engineering Services under the G-Cloud Framework.

1.2. Overview of Services

Civica offers the following services to help Buyer's plan and implement their cloud-based strategy.

Service	Service Description
Master Data Management Service	Civica's Framework covers all aspects of MDM from readiness assessment, technology selection and implementation to establishing effective governance roles and processes to create Golden Records for a reliable Single View, including matching and survivorship rules plus workflow for data stewards. Single or multi-domain MDM for operational or analytical use cases.
Data Conversion and Migration Service	A secure, end-to-end, legacy data and document migration and conversion service for cloud and on-premises data sources. Civica's proven framework encapsulates industry best-practice to simplify, de-risk, accelerate the migration and conversion lifecycle from strategy development, planning, design, data profiling and cleansing, ETL implementation and testing, to live migration and reconciliation.
Data Platform Architecture & Design Service	Our data platform architecture service provides a robust foundation for organisations to correctly implement best practice data architecture. This enables you to centralise, manage, and analyse vast datasets efficiently. Discover streamlined workflows and increased productivity with automated integration, comprehensive data governance, with secure access controls. advanced analytics and data-driven value.
Data Platform Implementation Service	Optimise your data landscape with our Data Platform Implementation service. Build secure, scalable solutions tailored to your requirements in the cloud or on-premise. Leverage our expertise in data warehousing, data lakes, data quality, integration, governance, and analytics to become agile, data driven, unlocking insights and propelling your organisation's growth.
Data Discovery Service	Our Data Discovery Service innovatively identifies structured, semi-structured, and unstructured data across organisations, streamlining the process and providing a comprehensive understanding of available data assets. Through dynamic visualisations, stakeholders intuitively grasp complex data relationships, fostering a culture of data-driven decision-making. Advanced analytics techniques uncover actionable insights, driving strategic decision-making.
Data Pipeline Service	Streamline data ingestion, processing and delivery with our data pipeline service. Utilising scalable and resilient pipelines, we ensure seamless data flow across systems, enabling real-time analytics and facilitating data-driven decision-making for organisations of all sizes. Implements robust data pipelines to streamline data workflows, enhance data quality, automation, drive operational efficiency.
Data Engineering Service	Offers end-to-end solutions for designing, building, and maintaining data infrastructure including data lakes and warehouses. From data modelling and ETL processes to performance tuning and optimisation, data cleansing, pipeline development, we empower businesses to harness the full potential of their data assets for strategic insights, improved decision-making and organisational improvement.

1.3. Use of Subcontractors and Partners

The above services are delivered by Civica UK Ltd. Depending on the Buyer requirement we may operate with other Civica group companies including Civica NI Limited. Civica NI Limited is registered in Northern Ireland at 10 Weavers Court, Belfast, BT12 5GH.

2. Detailed Descriptions

2.1. Master Data Management Service

Service Features and Benefits

Features	Benefits
- MDM readiness assessment with practical roadmap for implementation - MDM implementation roadmap integrated with business, technology, and data strategies - Identify authoritative sources of master data (systems of record) - Best practice MDM governance covering principles, policies, processes, and roles - MDM business case evaluation including ROI calculation - Implement match, merge, and survivorship rules, plus data stewards' workflows - Implement Single View, 360-degree view, and 720-degree view solutions - Data Protection Impact Assessment to ensure GDPR DPA18 compliance - Solutions supported: Civica Multivue, Informatica, SAS, Talend and Microsoft	- Creation of golden record/single view for core business entities - Operational MDM consistently shares and updates master data across systems - Ensures accurate data is leveraged in all business processes - Analytical MDM improves insight with complete picture and single view - Support for “tell us once” and “know your customer” processes - Data Protection by design and by default - Assured compliance with data quality standards - Aligned with DAMA DMBOK best practice - Realise benefits of multi-agency data sharing - Provides a common data backbone for digital transformation initiatives

Scope



We have developed a suite of MDM Frameworks that cover the following phases of the MDM lifecycle: Readiness assessment; Technology selection; MDM implementation and creation of a reliable Single View; Establishing effective MDM governance and processes. Our frameworks are suitable for:

- Operational MDM whereby the “golden record” is propagated back to operational systems so that operational business processes are using the best possible data for core entities.
- Analytical MDM whereby data from disparate systems feeding systems of insight are dynamically resolved so that all relevant facts are correctly linked to the same entities improving the quality of reporting and analytics.

Project Approach



In practice MDM implementations are based on a subset of the following activities. It is not intended for the activities to be executed strictly sequentially. The method is tailored for each Buyer and data subject area and some degree of iteration and parallelism is expected to take place.

In parallel with the MDM implementation, it is often necessary to assess, design, build, rollout and operate a data governance framework, to exercise the required level of control over the data being mastered.

Phase	Description
Establish Business Requirements	Conduct workshops with process contacts to identify concepts and associated definitions in the subject area. Use the results to develop / extend outline business requirements.

Analyse Source Systems	Refine inventory of Systems of Entry and consuming systems and collect additional required system details. Collect and catalogue relevant meta-data associated with the identified systems and conduct data quality assessments against all potential Systems of Entry.
Model Data	Conduct workshop(s) with system contacts to agree attributes, rules, definitions, and prioritisation for use in the logical data model. Review the conceptual data model and either develop a bespoke logical model or extend the identified industry standard model.
System Requirements	Specify the data mappings and rules between attributes in the Systems of Entry and attributes in the System of Record. Specify data mappings and rules between attributes in System of Record and attributes in consuming systems. Analyse and record details of the impact on and necessary changes to all identified systems.
Select MDM Architecture and Toolset	Define the MDM Architecture to be used, and select tools to provide Data Integration, Data Quality and MDM capabilities - based on their ability to support the system requirements.
Build Data Sourcing Components	Develop physical data model and plan, load and test the integration Master Data Environment. Plan and perform initial population of System of Record.
Build Data Distribution Components	Develop components that make data available to consuming systems including components to update the Systems of Entry with enriched data.
Build Data Quality Components	Develop components to monitor Data Quality and develop Data Enrichment web services to be used by Systems of Entry in order to help end-users to improve data quality at the point of data entry.
Build User Interfaces & Workflows	Develop user interfaces and associated workflows for Data Stewards.
Conduct End-to-end Testing	Test the behaviour of the Master Data Environment with respect to the subject area, testing each data concept throughout its lifecycle from creation through to retirement.
Conduct Acceptance Testing	Define and execute the deployment plan for the Master Data subject area and perform acceptance testing.

Added Value and Innovations



Our vendor neutral MDM Frameworks are integrated with our other data management frameworks and aligned with the DAMA DMBok. We have partnerships with:

- Civica MDM - our own MDM solution, optimised for local government and healthcare sectors, creating single view of the citizen and household.
- Informatica - an industrial strength, multi-domain solution for large scale, mission critical solutions.
- Talend - an open source, multi-domain solution that is highly customisable.
- Microsoft - a multi-domain solution that is fully integrated into the Microsoft stack.

Data Management, Migration and Architecture are core competencies of our Consulting practice. Many of our consultants hold TOGAF 9 certification and/or CDMP (Certified Data Management Professional). We have helped to establish the UK Chapter of DAMA in 2002 and we have maintained our commitment to supporting DAMA through board level representation ever since.

Additionally, we have extensive experience in successful projects that must comply with UK Government protective marking, operating at, and above, Official-Sensitive levels of requirement and satisfying NCSC cloud security principles.

Expected Buyer Outcomes

Civica is a full-service MDM partner not just a software solution vendor. As a result, we are able to ensure that Buyers realise the full benefits of effective Master Data Management, including:

- Creation of golden record and single view for core business entities.
- Operational MDM consistently shares and updates master data across systems.
- Analytical MDM improves insight with complete picture and single view.
- Ensures accurate data is leveraged in all business processes.
- Improved Buyer experience enabled by complete view of Buyer data.
- Better insight from analytical systems by connecting all relevant facts to core entities.
- Improved data quality for core data entities at the heart of the business.
- Reduced fraud.
- Regulatory compliance including GDPR/DPA18.
- Realise the benefits of multi-agency data sharing.

2.2. Data Conversion and Migration Service

Service Features and Benefits

Features	Benefits
• Supports COTS, bespoke and SaaS including Microsoft Dynamics365, Office365, SharePoint • Source to target data mapping, data gap analysis • Data quality and retention assessment, rule generation, data quality remediation • Data modelling and data analysis to define data requirements • Multi-level testing to assure reliable and complete data migration • Processes built upon ISO9001 QMS and ISO27001 ISMS accreditation • Data reconciliation design, build, testing, data archiving and retirement planning • Data migration review and consultancy services • Data migration and conversion strategy development, implementation approach • Data stakeholder management and governance	• Delivers risk reduction during critical business change periods • Problems solved effectively with minimal cost and high success rates • Secure end-to-end data migration service across planning, analysis, delivery, testing • Buyer data treated as a valuable asset and managed accordingly • Supported by master data management, data quality and BI services • Tried and tested framework approach and strategy to accelerate projects • Approach independent of source/target system, migration tools, or industry • Minimal disruption to organisations • ETL vendor agnostic: SSIS, ADF, Fabric, Talend, Informatica, Kingswaysoft, tcVision • Database agnostic: SQL Server, Azure SQL Server Oracle, Open Source

Scope



Data migration solutions delivered by Civica range in scope from a complete end-to-end managed data migration service to a self-service model in which tools and user documentation, training and support services are provided for Buyers wishing to retain primary responsibility for migration activities.

Civica has supported and performed the migration of data and documents from a multitude of legacy systems with different data formats into cloud-based and SaaS solution. In each case we have applied our established Data Conversion Methodology and tailored our professional services and consultancy offering to meet Buyer needs through an appropriate blend of:

- Data migration strategy and best-practice consultancy.
- Data migration planning and leadership.
- Data landscape and architecture analysis.
- Data mapping and conversion.
- Data profiling and data quality measurement and monitoring.
- Data retention and data cleansing.
- Matching and merging to facilitate single view of Buyer, citizen and critical business entity.
- Hands-on migration development, delivery, and test resources.
- Expert advice on data formats, load tools and utilities from our technical subject matter experts.

Project Approach



Our established Data Migration Methodology encapsulates industry best-practice and has been refined through many years of experience gained in delivering data migrations ranging in scale from large, complex, business-critical transformation and cloud enablement programmes to more modest application modernisation initiatives.

A typical end-to-end Data and Document Migration engagement consists of:

Phase	Description
Scope	Perform stakeholder analysis to identify data owners and business/technical SMEs. Identify legacy on-premises or cloud-hosted data stores. Understand data landscape and topography. Develop data migration strategy. Key deliverables: Migration Strategy; Legacy Data Store List.
Plan	Perform an issue and risk assessment. Develop migration schedule. Develop reconciliation & audit approach. Develop and test dress-rehearsal approach (dry-run). Establish migration sign-off acceptance procedure. Specify roles and responsibilities. Key deliverables: Business Data Model & Glossary; RAID log; Migration Schedule.
Discover	Profile data sources. Establish data quality metrics. Develop data retention and cleansing plan. Understand in-flight scenarios. Analyse legacy batch processes, data integration and interface patterns. Perform source and target data model gap analysis. Key deliverables: Source/Target Data Models & Data Dictionaries; Data Quality Reports; Data Retention & Cleansing Plan; Volumetrics & Timing Models; Gap Analysis.
Design	Specify and design migration environments. Design data mapping specifications. Develop migration Runbook & rollback plan. Develop test, audit and reconciliation plan. Key deliverables: High-level Architecture & Design; Data Mappings; Migration Runbook; Test & Audit & Reconciliation Plan.
Build	Build migration environments. Build & test data flows. Build & test audit and reconciliations. Test and tune performance. Key deliverables: Data flows and Pipelines (ETL).
Test	Perform migration user acceptance testing. Execute migration dry run(s). Execute migration dress rehearsal(s). Key deliverables: Test, Audit & Reconciliation reports; End-to-End Execution timings.
Execute	Migrate data and documents. Reconcile. Execute acceptance process. Key deliverables: migration sign-off and go-live.

At the other end of the scale, we can provide a service which allows the Buyer to retain primary responsibility for the majority of data migration activities. In this model, we provide comprehensive target data models, data dictionaries and data integrity and verification rules which Buyers can use to design and develop data extraction, conversion, and cleansing processes, with assistance from our professional services, consultancy and subject matter experts if required. We typically retain responsibility for loading the extracted and cleansed data into the cloud hosted / SaaS solution.

Added Value and Innovations



In our experience cloud enablement, application modernisation and digital transformation initiatives which require data migration present an ideal opportunity to make a transformational step-change in data quality and enterprise information management capabilities. Our services include comprehensive master data management, data quality, data governance and enterprise information management which can be applied across an enterprise to build a foundation and roadmap for a personalised Buyer experience, deeper business insight, automation, and operational efficiency.

Data Management, Data Migration and Data Architecture are core competencies of our Consulting practice. Many of our consultants hold TOGAF 9 certification and/or CDMP (Certified Data Management Professional). Our consultants helped to establish the UK Chapter of DAMA and we have maintained our commitment to supporting DAMA through board level representation ever since.

Additionally, we have extensive experience in successful projects that must comply with UK Government protective marking, operating at, and above, Official-Sensitive levels of requirement and satisfying NCSC cloud security principles.

Expected Buyer Outcomes

These include:

- De-risked and accelerated business critical data and document migrations.
- Comprehensive multi-layered security protecting data and documents in transit and at rest throughout the data migration lifecycle.
- No unplanned disruption or degradation to business operations.
- Improved data quality and data management capability.
- Solid foundation for personalised Buyer experience, deeper business insight, automation, and operational efficiency.

2.3. Data Platform Architecture & Design Service

Service Features and Benefits

Features	Benefits
• Scalable cloud infrastructure for seamless data processing • Centralised data management for efficiency and accessibility • Secure access controls ensure data privacy and compliance • Advanced analytics tools enable valuable insights and informed decisions • Scalable infrastructure accommodates vast datasets and evolving needs • Automated data integration streamlines workflow and ETL efficiency	• Improved efficiency and accessibility through centralised data management • Enhanced data security and compliance with robust access controls • Informed decision-making with valuable insights from advanced analytics • Scalable infrastructure supports growth and evolving data requirements • Streamlined workflows and increased productivity with automated integration • Confidence in regulatory compliance with comprehensive data governance

- | | |
|---|--|
| <ul style="list-style-type: none"> • Comprehensive data governance framework ensures regulatory compliance • Flexible API architecture facilitates seamless integration with existing systems | <ul style="list-style-type: none"> • Seamless integration with existing systems for enhanced functionality and productivity |
|---|--|

Scope



Civica's Data Architecture and Design service will take account of the following areas:

- Selecting the right architecture depending on your organisational needs, this could be cloud or on premise.
- Select the right platform and architectural components, including warehousing, ETL, APIs, analytics, insights and reporting.
- Plan for scalable infrastructure.
- Establish sound data management to lay clear foundations for how architecture will impact the overall data experience.
- Ensure clear and accurate documentation.

Project Approach

Phase	Description
Understand	Identify stakeholders. Understand business and technology requirements; technical constraints; security considerations – understand nature, volume, volatility, veracity of (internal and external) data sources; and interface requirements for ingestion. Understand quality of data and need for data quality management tools and processes. Understand data consumers and nature of interfaces required e.g. interactive dashboards; machine to machine.
Evaluate	Develop logical architecture to deliver requirements. Evaluate technology solution options against technology and business requirements; provide rationale and scoring for options appraisal. Ensure alignment with reference architectures and industry best practice.
Recommend	Develop recommended (target) architecture, with rationale for decisions. Ensure alignment with reference architectures and industry best practice.
Plan	Develop phased and coated implementation, using a CI/CD approach to deliver business value early and often, while incrementally building data platform and skills.

Added Value and Innovations



Our data architecture and design service brings significant added value and innovations to organisations seeking to optimise their data management practices. By leveraging cutting-edge technologies and best practices, we enable organisations to build robust data infrastructures that drive efficiency, scalability, and agility. Our service goes beyond traditional approaches by offering scalable cloud infrastructure, centralised data management, and secure access controls, ensuring that data remains accessible, reliable, and compliant with regulatory requirements.

Furthermore, our service incorporates advanced analytics tools and automated data integration capabilities, empowering organisations to derive actionable insights and streamline workflow efficiency. With a comprehensive data governance framework and flexible API architecture, we facilitate seamless integration with existing systems and maintain data integrity throughout its lifecycle. Ultimately, our data architecture and design service equips organisations with the tools and capabilities needed to unlock the full potential of their data assets, driving innovation, and achieving business success in today's data-driven landscape.

Expected Buyer Outcomes

These include:

- Improved efficiency and accessibility through centralised data management.
- Enhanced data security and compliance with robust access controls.
- Informed decision-making with valuable insights from advanced analytics.
- Scalable infrastructure supports growth and evolving data requirements.
- Streamlined workflows and increased productivity with automated integration.
- Confidence in regulatory compliance with comprehensive data governance.
- Seamless integration with existing systems for enhanced functionality and productivity.

2.4. Data Platform Implementation Service

Service Features and Benefits

Features	Benefits
• Robust and secure solutions for data security • Highly scalable solutions for growing demand • Tailored solution for maximum efficiency • Flexible deployment options for strategic alignment • Expert technical advice for picking the right architecture • Advanced analytics from data warehouses and data lakes • Seamless integration for data readiness and completeness • Strong governance and data management to ensure data quality	• Enhanced data protection and compliance assurance against threats • Smooth scalability to accommodate evolving business demands seamlessly • Increased productivity and effectiveness through tailored solutions • Alignment of deployment with strategic business goals and infrastructure needs • Efficient data management with industry-leading expertise in warehousing • Harnessing the power of data lakes for comprehensive analytics insights • Ensured data consistency and reliability through seamless integration • Informed decision-making enabled by governance and actionable insights

Scope



The Data Platform Implementation service provided encompasses a comprehensive range of solutions tailored to client needs. Our scope spans from full end-to-end managed implementation to self-service options, providing tools, documentation, training, and support for clients retaining migration responsibility.

Civica has a proven track record of supporting and executing data platform implementations across diverse legacy systems and data formats, transitioning them to cloud-based or on-premises solutions.

Our approach involves:

- Consultancy on data platform strategy and best practices.
- Leadership and planning for seamless implementation.
- Analysis of existing data landscape and architecture.
- Data mapping, conversion, and profiling.
- Continuous data quality measurement and monitoring.
- Data retention strategies and cleansing.
- Integration to facilitate unified views of clients, stakeholders, and critical entities.
- Hands-on development, delivery, and testing.
- Expert guidance on tools, utilities, and data formats.

Project Approach



Our Data Platform Implementation Approach draws on industry best practices and extensive experience gained from a variety of implementation projects, ranging from large-scale transformations to modest modernisation initiatives. The process typically involves the following phases.

Phase	Description
Scope	Conduct stakeholder analysis to identify data owners and SMEs. Identify legacy and cloud-based data sources. Understand data landscape and formulate migration strategy. Key Deliverables: Migration Strategy, Legacy Data Inventory.
Plan	Assess risks and develop mitigation strategies. Establish migration schedule and reconciliation approach. Conduct dress rehearsals and finalise acceptance criteria. Define roles and responsibilities. Key Deliverables: Migration Schedule, Risk Assessment, Reconciliation Plan.
Discover	Profile data sources and assess data quality. Develop data retention and cleansing plan. Analyse legacy processes and integration patterns. Perform source-target data model gap analysis. Key Deliverables: Data Quality Reports, Gap Analysis, Data Retention Plan.
Alpha	A short inception stage to clarify dependencies, roles, working practices and dependencies with the Buyer prior to ramping up. Confirm scope, business goals, user needs, risks and objectives generated by preceding Discovery phase outputs. Deliver Alpha via incremental sprints of 1- or 2-week duration, focussing on designing and building prototyped elements of the service and removing uncertainty. Users are closely engaged throughout the sprints, reviewing progress, and validating understanding, and helping to ensure the Alpha validates understanding of needs and refines the design and solution thinking accordingly.
Beta	Through a series of agile sprints, an MVP is built and tested incrementally while maintaining continuous engagement and visibility with users and stakeholders. Cloud environments and services are provisioned via tools and templates to ensure repeatability and consistency and take advantage of cloud abilities to scale rapidly. Releases are produced early in the delivery lifecycle, often as a private Beta to a subset of early adopter users, and KPIs monitored to support optimal configuration and deployment of the services to deliver required value.
Live	After completion of Beta, we can continue to work with you to proactively maintain a roadmap for the service that reflects the latest opportunities, risks, and needs. We also offer a managed service to maintain, support and manage the live service.

In addition, we offer a flexible service model where clients can retain primary responsibility for migration activities, supported by our comprehensive target data models and consultancy services. We ensure smooth loading of extracted and cleansed data into the designated cloud-hosted or SaaS solution, providing expertise as needed throughout the process.

Added Value and Innovations



Our Data Platform Implementation service delivers substantial value and innovation across various dimensions. We perceive data platforms as an opportunity for transformative improvement in data analytics, enterprise information management and data driven decision making. By integrating comprehensive master data management, data quality, governance, and enterprise information management practices, we lay the groundwork for personalised customer experiences, deeper business insights, automation, and operational efficiency.

Data management, migration, and architecture are fundamental pillars of our consultancy practice. Our consultants possess extensive expertise, with many holding certifications such as TOGAF 9 and CDMP (Certified Data Management Professional). We actively contribute to the Data Management Association (DAMA), demonstrating our commitment to industry standards and best practices.

In projects requiring adherence to UK Government protective marking and NCSC cloud security principles, we ensure data security at the highest levels. Our expertise in operating securely at Official-Sensitive levels provides clients with peace of mind regarding data protection and regulatory compliance.

We leverage cloud enablement, application modernisation, and digital transformation initiatives to drive innovation in data platform implementation. By harnessing the capabilities of cloud technologies, we enable clients to achieve agility, scalability, and cost-effectiveness in their data management solutions.

Expected Buyer Outcomes

The outcomes of our Data Platform Implementation service include:

- **Improved Data Accessibility:** a well-implemented data platform provides users with easy access to relevant data assets, enabling faster decision-making and improved collaboration across the organisation.
- **Enhanced Data Quality and Consistency:** a data platform helps centralise and standardise data management processes, leading to improved data quality, consistency, and reliability.
- **Increased Efficiency and Productivity:** by streamlining data workflows and automating repetitive tasks, a data platform reduces manual effort and improves overall efficiency and productivity.
- **Advanced Analytics and Insights:** a data platform facilitates advanced analytics and data-driven insights by providing robust tools and capabilities for data processing, analysis, and visualisation.
- **Scalability and Flexibility:** a well-designed data platform is scalable and flexible, allowing organisations to adapt to changing data volumes, sources, and requirements without compromising performance.
- **Regulatory Compliance:** a data platform helps organisations ensure compliance with data protection regulations and industry standards, mitigating risks related to data security and privacy.
- **Business Innovation and Growth:** by leveraging the power of data effectively, a data platform enables organisations to identify new opportunities, drive innovation, and achieve business growth in a competitive market landscape.

2.5. Data Discovery Service

Service Features and Benefits

Features	Benefits
• Customised methodologies tailored to specific data objectives and challenges • Comprehensive analysis tools uncover new opportunities within data • Agile experimentation frameworks enable iterative testing and validation of hypotheses • Data exploration techniques reveal patterns and opportunities for business improvement/change • Collaborative workshops foster innovation and alignment with business goals • Expert guidance and support throughout data discovery and mining process • Actionable recommendations for initiating data improvement initiatives	• Tailored approaches for achieving data objectives and addressing challenges effectively • Uncovering hidden insights and trends to drive informed decision-making • Iterative testing/validation ensure data initiatives start on a strong foundation • Revealing patterns and opportunities for enhancing data quality and effectiveness • Fostering innovation and alignment with business goals through collaborative workshops • Expert support ensures successful navigation of the data discovery journey • Actionable recommendations enable immediate initiation of data improvement efforts

Scope



The scope of our data discovery service takes several key elements aimed at enabling organisations to gain valuable insights from their data:

- **Data Identification:** We work with organisations to identify and catalogue data sources across their ecosystem, including structured, semi-structured, and unstructured data.
- **Data Exploration:** explore and visualise data to understand its characteristics, patterns, and relationships, allowing you to uncover hidden insights and opportunities.
- **Data Analysis:** leverage advanced analytics techniques to analyse and interpret data, identifying trends, anomalies, and correlations that provide actionable insights for decision-making.
- **Data Quality Assessment:** assess the quality and reliability of data, identifying any inconsistencies, errors, or gaps that may impact its usefulness for analysis and decision-making.
- **Data Governance:** evaluate data governance policies and procedures to ensure the integrity, security, and compliance of data throughout its lifecycle.
- **Roadmap for change:** an output of this service is a roadmap showing how to achieve recommended future states and the best way to prioritise and implement these changes.

Overall, the scope of our data discovery service is to enable organisations to gain a comprehensive understanding of their data assets, uncover valuable insights, and drive informed decision-making for improved business outcomes. Through a roadmap and recommendations, we can help show the path to data success.

Project Approach

Phase	Description
Alpha	A short inception stage to clarify dependencies, roles, working practices and dependencies with the Buyer prior to ramping up.

Phase	Description
	Confirm scope, business goals, user needs, risks and objectives generated by preceding Discovery phase outputs. Deliver Alpha via incremental sprints of 1- or 2-week duration, focussing on designing and building prototyped elements of the service and removing uncertainty. Users are closely engaged throughout the sprints, reviewing progress, and validating understanding, and helping to ensure the Alpha validates understanding of needs and refines the design and solution thinking accordingly.
Beta	Through a series of agile sprints, an MVP is built and tested incrementally while maintaining continuous engagement and visibility with users and stakeholders. Cloud environments and services are provisioned via tools and templates to ensure repeatability and consistency and take advantage of cloud abilities to scale rapidly. Releases are produced early in the delivery lifecycle, often as a private Beta to a subset of early adopter users, and KPIs monitored to support optimal configuration and deployment of the services to deliver required value.
Live	After completion of Beta, we can continue to work with you to proactively maintain a roadmap for the service that reflects the latest opportunities, risks, and needs. Civica also offer a managed service to maintain, support and manage the live service components.

Added Value and Innovations



Our Data Discovery Service innovatively identifies structured, semi-structured, and unstructured data across organisations, streamlining the process and providing a comprehensive understanding of available data assets. Through dynamic visualisations, stakeholders intuitively grasp complex data relationships, fostering a culture of data-driven decision-making. Advanced analytics techniques uncover actionable insights, driving strategic decision-making and enhancing organisational agility.

Expected Buyer Outcomes

- Concise and visually engaging data discovery documentation.
- A transparent roadmap outlining the steps to bring the data vision to fruition.
- Mutual understanding of objectives and clear direction for subsequent actions.
- Delivery of tools and artifacts for effective communication, fostering buy-in, and driving momentum.
- Insight into key challenges and a strategic approach to address them.

2.6. Data Pipeline Service

Service Features and Benefits

Features	Benefits
• Scalable and resilient pipelines for seamless data flow • Real-time analytics capabilities enable timely insights • Automated data ingestion (e.g. via API) and processing streamline workflows • Cross-system compatibility facilitates integration with existing infrastructure	• Streamlined data processing improves operational efficiency • Real-time analytics empower timely decision-making • Automated workflows reduce manual intervention and errors • Seamless integration enhances system compatibility and functionality

- Monitoring and alerting systems ensure data pipeline reliability - Customisable workflows tailored to specific business needs - Support for diverse data formats and sources enhances flexibility	- Enhanced reliability ensures uninterrupted data flow - Tailored workflows address unique business requirements - Flexibility in handling diverse data sources enhances adaptability
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Scope



Our Data Pipeline service empowers organisations to build robust data pipelines that streamline data processing, enhance data quality, and facilitate timely insights, ultimately driving business growth and innovation in today's data-driven landscape.

Project Approach

Phase	Description
Define Goals	Clearly outline your goals; define scope of project and desired end state. Your goals will guide the design, complexity, and scalability of your pipeline. This is the time to consider what is possible, future proof the organisation and set parameters for success. Consider specific data requirements, the frequency of data updates, and the desired speed of data processing and analysis.
Analyse Sources	Understand the nature, format, and volume of data sources (databases, files, APIs, cloud storage) as it impacts the subsequent stages of ingestion and transformation. Consider future data sources and ensure that these are taken into account.
Define Target	Define nature, format of the data pipeline outputs and target data structures. Consider frequency and volume required and how these map onto target analytics, insights and reporting.
Data Ingestion Plan	Design how to ingest data, such as method, frequency, timing (e.g. batch v real-time / change-capture methods) and the nature of interfaces and adapters required. Confirm if additional architecture elements are required. Take into account technical architecture to ensure needs are met.
Data Processing Plan	Design how to clean, validate, and structure the ingested data into a format suitable for analysis. Decide on approach and order for ETL or ELT, which might change depending on data source.
Select Tooling	Select appropriate tooling for data pipeline implementation. Ensure it meets needs as outlined in previous phases and future proofs any implementation.
Establish Monitoring Framework	Design how we will track the flow of data through the pipeline, checking for errors or bottlenecks that might slow down data processing, and monitoring resource usage to ensure the pipeline is operating efficiently. Monitoring helps detect and resolve issues before they affect the performance of the pipeline or the quality of the data.
Implement Workflow	Implement pipeline and workflow using selected toolset. Incrementally build workflows, gradually increasing scope of data transformed. Iterate fast and continuously, validate whether requirements are met by designed solution using an Agile approach.
Test/Refine	Continually validate the performance of the pipeline using the agreed testing and monitoring framework. Refine and improve until completion. Establish method and skill set for maintaining data pipelines, conduct user training.

Added Value and Innovations



Our Data Pipeline service delivers significant added value and innovations across your data platform. We view data pipelines as essential components for optimising data processing, transformation, and delivery, facilitating efficient data analytics, and informed decision-making. By implementing robust data pipelines, we pave the way for streamlined data workflows, enhanced data quality, and automation, ultimately

driving operational efficiency and business growth.

One of the key benefits of our Data Pipeline service is the seamless delivery of timely and consistent data for analytics, insights, and reporting purposes. Through optimised data processing and automation capabilities, we ensure organisations have access to high-quality data when needed, empowering informed decision-making and supporting business objectives effectively. Our expertise in regulatory compliance ensures adherence to data protection regulations and industry standards, safeguarding data security and privacy. By leveraging cloud enablement, application modernisation, and digital transformation strategies, we enable organisations to achieve agility, scalability, and cost-effectiveness in their data management solutions, enhancing their competitive edge in the market.

Expected Buyer Outcomes

Key benefits of our Data Pipeline service include:

- **Streamlined Data Processing:** our data pipelines streamline the process of ingesting, processing, and transforming data from diverse sources, ensuring efficiency and accuracy throughout.
- **Real-time Data Availability:** by leveraging real-time processing capabilities, our data pipelines enable organisations to access and analyse data as it's generated, facilitating timely decision-making and responsiveness to changing conditions.
- **Scalability and Resilience:** our data pipelines are designed to scale seamlessly with growing data volumes and evolving business needs, ensuring reliability and performance under varying workloads.
- **Data Quality Assurance:** our data pipeline solutions incorporate mechanisms for data validation, cleansing, and enrichment, enhancing data quality and consistency across the organisation.
- **Automation and Orchestration:** automation features within our data pipelines reduce manual intervention, enabling organisations to automate repetitive tasks and streamline data workflows for greater efficiency and productivity.
- **Advanced Analytics Integration:** our data pipelines seamlessly integrate with advanced analytics platforms, enabling organisations to derive valuable insights and unlock the full potential of their data assets.
- **Compliance and Security:** our data pipeline solutions prioritise data security and compliance with regulatory requirements, ensuring that sensitive data is handled securely and in accordance with industry standards.

2.7. Data Engineering Service

Service Features and Benefits

Features	Benefits
• End-to-end solutions for designing and building data infrastructure • Expertise in data modelling, ETL processes, and performance tuning	• Optimised data infrastructure enhances efficiency and scalability • Expertise in data modelling and ETL processes ensures data accuracy

• Full stack integration/pipeline development (SSIS/SSAS/SSRS), Data Factory, Power BI, Fabric • Customised solutions tailored to specific business objectives • Robust data governance frameworks ensure compliance and security • Integration with advanced analytics tools for actionable insights (Palantir, Informatica) • Continuous monitoring and optimisation for peak performance • Comprehensive support for managing and maintaining data assets	• Tailored solutions address unique business challenges and objectives • Robust data governance ensures compliance and security • Actionable insights drive informed decision-making • Continuous monitoring and optimisation ensure peak performance • Comprehensive support maximises the value of data assets
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Scope



The scope of our Data Engineering service encompasses a comprehensive suite of solutions tailored to meet the evolving needs of organisations in harnessing the power of their data. Key elements include:

- **Data Integration:** We design and implement robust data integration solutions to consolidate and harmonise data from disparate sources, ensuring consistency and accuracy across the organisation's data ecosystem.
- **Data Warehousing:** Our service includes the development and maintenance of scalable data warehousing solutions, providing a centralised repository for storage and analysis of large volumes of structured and unstructured data.
- **Data Modelling:** We employ advanced data modelling techniques to design efficient and optimised data structures that facilitate complex analytics and reporting requirements.
- **Data Transformation:** Our team is proficient in transforming raw data into actionable insights through processes such as cleansing, enrichment, and aggregation, ensuring data is primed for analysis and decision-making.
- **Data Pipeline Development:** We build robust data pipelines to automate the flow of data across systems, enabling real-time data processing and analytics for timely insights and decision-making.
- **Data Governance and Security:** We implement robust data governance frameworks and security measures to ensure data integrity, confidentiality, and compliance with regulatory requirements.
- **Scalability and Performance Optimization:** Our service includes ongoing monitoring, optimization, and scaling of data infrastructure to ensure optimal performance and accommodate evolving business needs.

Overall, our Data Engineering service is designed to enable organisations to unlock the full potential of their data assets, driving innovation, efficiency, and competitive advantage.

Project Approach



Civica follow the below structured approach, we ensure that our Data Engineering Service delivers tangible value to our clients, enabling them to harness the full potential of their data assets and drive business innovation and growth.

Phase	Description
Scope	Conduct stakeholder analysis to identify data owners and SMEs. Identify legacy and cloud-based data sources. Understand data landscape and formulate migration strategy.

Phase	Description
	Key Deliverables: Data Engineering Strategy, Data Inventory.
Plan	Develop data engineering approach and architecture. Establish build plan and test plan. Key Deliverables: Build plan, test plan.
Discover	Understand the organisation's data landscape, including existing data sources, systems, and processes. Comprehensive assessment to identify data quality issues, integration challenges, and opportunities for improvement. Key Deliverables: Key findings reports, Gap Analysis, Data Plan.
Alpha	A short inception stage to clarify dependencies, roles, working practices and dependencies with the Buyer prior to ramping up. Confirm scope, business goals, user needs, risks and objectives generated by preceding Discovery phase outputs. Deliver Alpha via incremental sprints of 1- or 2-week duration, focussing on designing and building prototyped elements of the service and removing uncertainty. Users are closely engaged throughout the sprints, reviewing progress, and validating understanding, and helping to ensure the Alpha validates understanding of needs and refines the design and solution thinking accordingly.
Beta	Through a series of agile sprints, an MVP is built and tested incrementally while maintaining continuous engagement and visibility with users and stakeholders. Cloud environments and services are provisioned via tools and templates to ensure repeatability and consistency and take advantage of cloud abilities to scale rapidly. Releases are produced early in the delivery lifecycle, often as a private Beta to a subset of early adopter users, and KPIs monitored to support optimal configuration and deployment of the services to deliver required value.
Live	After completion of Beta, we can continue to work with you to proactively maintain a roadmap for the service that reflects the latest opportunities, risks, and needs. We also offer a managed service to maintain, support and manage the live service.

Added Value and Innovations



Our Data Engineering service delivers significant added value and innovations across your data platform. We see data engineering as a catalyst for transformative advancements in data analytics, enterprise information management, and data-driven decision-making. By integrating comprehensive data management, migration, and architecture practices, we lay the groundwork for tailored customer experiences, enhanced business insights, automation, and operational efficiency.

One of the key benefits of our Data Engineering service is the ability to deliver the most usable data in a timely and consistent fashion, ready for use in analytics, insights, and reporting. Through streamlined data management processes and automation capabilities, we ensure that organisations have access to high-quality data when they need it, enabling informed decision-making and driving business growth.

Moreover, our expertise in regulatory compliance guarantees adherence to data protection regulations and industry standards, providing clients with peace of mind regarding data security and privacy. By leveraging cloud enablement, application modernisation, and digital transformation strategies, we empower you to achieve agility, scalability, and cost-effectiveness in your data management solutions.

Expected Buyer Outcomes

- Improved Data Accessibility: easy access to high-quality data for faster decision-making and accurate insights.

- **Enhanced Data Quality:** improved accuracy, consistency, and completeness of data for increased confidence in analytics and reporting.
- **Scalability and Flexibility:** ability to scale data infrastructure and capabilities to handle growing data volumes and changing requirements.
- **Cost Efficiency:** optimised data management processes and infrastructure to reduce overhead costs.
- **Regulatory Compliance:** adherence to data protection regulations and industry standards to mitigate risks related to data security and privacy.
- **Enhanced Decision-Making:** access to reliable data and advanced analytics for more informed decision-making, risk mitigation, and growth opportunities.
- **Competitive Advantage:** leveraging data effectively to gain a competitive edge, drive innovation, and improve customer experiences for business success.

3. About Civica

3.1 Overview

New policies, advances in technology, restrictive budgets and rapidly changing cyber security risks put increasing pressure on government, while citizen expectations of your services continue to rise.

Our mission is to accelerate the digital transformation of public services, helping you create data-centric, secure solutions and intelligent, AI-driven services built around your goals, budgets and the needs of the citizens you serve. All with minimal disruption. All with expert support. For over 20 years, our focus has been exclusively on central government and defence, establishing a track record of lasting impact. We understand your drive to strengthen critical change programmes, driving better outcomes for citizens, businesses and communities, and value for money for taxpayers. We can turn your imperatives into reality. Faster.

3.2 Core Propositions

Civica's Central Government & Defence (CGD) Division's core offerings comprise:

Expertise on Demand



We share our knowledge, tools and approaches to build centres of excellence and enduring capability within your teams. Whether you require individuals or high-performing autonomous teams, we provide public sector domain experts who understand your challenges and have solved them before.

Intelligent Solutions



We design and build AI-driven intelligent software solutions using trusted data to transform your services. Alongside your teams, we create exceptional citizen experiences, modernise your software, integrate or deploy leading SaaS solutions, or build new intelligent solutions, improving efficiencies and reducing the cost to serve.

Managed Services



Once live, we ensure your systems deliver maximum value and return on investment, adapting as policy changes, technology evolves, cyber threats grow and user needs shift. We can manage your new solution or support your existing tech stack, minimising operating costs as we go.

3.3 Civica Innovations

Civica identifies and develops technology innovations to complement its mission of transforming the way its Buyers work, enabling them to drive improved outcomes for UK citizens, e.g.:

- Machine-based identity verification to improve the user experience in public sector pension management.
- Using advanced technologies to address voting decline by improving citizen engagement.
- Using innovative image processing AI to optimise passenger flow and improve passenger experience and safety at a regional airport

Our innovation labs provide a facility to co-create new ideas and technologies with a Buyer. Our innovation champions help promote and apply advanced technologies such as artificial intelligence, machine learning and augmented and virtual reality, to public service delivery. Peer-group sessions with Buyers have helped fuel the innovation focus, to mutual benefit.

3.4 Full List of G-Cloud Services

This is the list of GCloud service categories provided by Civica's Central Government & Defence (CGD) Business Unit:

- Managed Hosting Services for Azure, AWS and Civica private cloud.
- Cloud professional services covering:
 - Application Transformation
 - Digital Services
 - Change Management
 - Data Management, Data Architecture, Data Analytics and Data Engineering
 - Microsoft (M365, Power Platform and D365)

3.5 Other Framework Agreements

Civica's Central Government & Defence Business Unit operates through the following frameworks.

Framework	Description
GCloud 14 (RM1557.14)	Lots 1, 2, 3 and 4.
Technology Services 3 (RM6100)	Lot 1 Technology Strategy & Services Design; Lot 2 Transition & Transformation; Lot 3 Operational; Lot 4 Programmes & Large Projects.
Technology Services 4 (RM6190)	Lot 1 Technology and Digital Consultancy Services; Lot 2 Transition and SIAM; Lot 5 and 5a Application and Data Management.
Digital Specialists & Programmes (RM6263)	Lot 1 - Capability-based or delivery of multiple projects covered under an overarching strategic service objectives using PPM frameworks.
Software Design & Implementation (RM6193)	Lot 1.
Digital Outcomes 6 (RM1043.8)	Lots 1 to 3.
Digital Outcomes and Specialists 7 (RM1043.9)	Lot 1 - Digital Outcomes; Lot 2 - Digital Capability & Delivery Partner; Lot 3 - End User Services; Lot 4 - User Research Studios & Participants.
Big Data & Analytics (RM6195)	Lot 1: Design, Build & Run Services; Lot 2: Commercial Off-The-Shelf (COTS) Software.
Artificial Intelligence (RM6200)	Discovery and consultancy services related to artificial intelligence (AI), implementation and support of AI systems, end-to-end partnerships, and AI technologies.

3.6 How to Obtain Further Information

For further information please see our website at www.civica.com or contact us on 0333 321 4914.