

Local Government Data Maturity Model

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Introduction

The model

This is the updated version of the Local Government Association's (LGA's) Local Government Data Maturity Model. The model sets out a description of the behaviours and practices in relation to data that we would expect to see in local authorities at each level of data maturity. It is primarily aimed at those in local authorities who have responsibilities for data, and their senior leaders, to help plan and design organisational approaches to improving their use of data.

The model was refreshed in 2023 to take account of recent updates in the data landscape and feedback from councils and is now more comprehensive and tailored to the local government sector.

The self-assessment tool

This model underpins the LGA's [Local Government Data Maturity Assessment Tool](#) which is freely available online within LG Inform Plus. This tool can be used by local authorities to assess themselves against the data maturity model's content and develop a high-level view of their current organisational data maturity.

The assessment tool has been designed to be light touch and easy to use. It combines the responses from officers and councillors across the local authority to provide a comprehensive picture of data maturity and allows users to download results for further analysis.

Users are then signposted to up-to-date case studies, best practice guides and training courses that will enable them to improve their maturity in the areas they have identified for development.

Refreshed to reflect a new data reality for local authorities

The original versions of the model and self-assessment tool were launched in 2018.

Since then, there have been several legislative changes and a rapid evolution in the way local authorities use data. For instance, the [UK GDPR](#) and the [Data Protection Act 2018](#) have expanded the compliance issues that local government needs to contend with. There has also been a growing recognition of the importance of data ethics.

Even more recently, there has been a growth in the capabilities of predictive analytics and artificial intelligence to support the work of public services, bringing challenges as well as opportunities. Local authorities also face a rapidly evolving landscape when dealing with cybersecurity.

All of this meant it was time to revisit and update both the Data Maturity Model and the Assessment Tool. The development of the model was a collaborative effort between experts in the field of data and representatives from local government.

Further support

This model forms part of the LGA's wider support offer to help local authorities make the best use of data. This includes [LG Inform](#) – the LGA's free data benchmarking service for local authorities, data training for officers and councillors, and support to help officers and councillors carry out effective performance management of their councils.

You can find information about the full range of support available at <https://www.local.gov.uk/our-support/research-and-data>. Alternatively, for further information about the LGA support available in relation to data please email us at transparency@local.gov.uk.

The Local Government Data Maturity Model

Audience

This document is primarily aimed at those in councils who have responsibilities for data, and their senior managers and heads of service. It can be used by all types of local authority; however, it is worth noting some of the highest levels of data maturity may not be as credible for smaller local authorities as for larger authorities, due to capacity and resource constraints.

Themes

The model is divided into eight high-level themes that summarise behaviours and practices in relation to data in different domains. These themes are as follows:

1. Culture and structure
2. Leadership and strategy
3. Data life cycle
 - a. Plan and design
 - b. Collect or acquire, and ingest
 - c. Prepare, store and maintain
 - d. Use and process
 - e. Share and publish
 - f. Archive and destroy
4. Systems and tools
5. Skills and capability
6. Governance and compliance

Maturity levels

Each of these themes includes a description of the behaviours and practices of organisations at five different levels of maturity in the way they handle and use data. These levels represent high maturity through to low maturity:

- **Level 5** - organisations that innovate in terms of techniques and approaches and are considered leaders amongst their peers
- **Level 4** - organisations that exhibit good practice and use industry standard approaches
- **Level 3** - organisations that are developing their capacity and capabilities in terms of data
- **Level 2** - organisations that are beginning their journey in terms of working with data
- **Level 1** - organisations that have poor and inconsistent practices around data.

Terminology and language

As far as possible we have tried to avoid using specialist terminology, but where we have, we have explained it or provided links to further information. There are many approaches to setting out organisational data maturity and those reading this document may also be familiar with other models and standards. When we talk about data or technical teams, we also mean analysts.

Theme 1: Culture and structure

This section describes the culture that organisations have in relation to data as well as the organisation's structural arrangements. By 'culture' we mean the shared underlying assumptions and guiding values that the organisation has which shape its use of data.

Level 5

- Evidence is used to make decisions and the organisation changes and adapts based on evidence. There's a culture of research and anticipation, and the organisation learns from its past mistakes. The organisation identifies best practices and innovative approaches from other public sector organisations, as well as wider industry.
- Services are delivered in response to the identified needs of local people and there is a strong culture of incorporating ideas from practitioners.
- Mature and productive collaborations exist between technical (data, digital and IT) and service teams, regardless of where they are located in the organisation. Technical and service teams work closely together consistently, potentially in multi-disciplinary teams, and are supportive of each other's domains and expertise.

Level 4

- Evidence is used to make decisions for the most part, and most changes are made based on evidence. There's a reasonably strong culture of research and anticipation and the organisation has the capacity to learn from its past mistakes. The organisation looks to identify best practices and innovative approaches, mostly from other public sector organisations.
- Services are largely delivered in response to the identified needs of local people and there is a growing culture of incorporating ideas from practitioners.

- Collaborations exist between technical (data, digital and IT) and service teams, regardless of where they are located in the organisation. Technical and service teams frequently work closely together, potentially in multi-disciplinary teams, and are on the whole supportive of each other's domains and expertise.

Level 3

- Decisions are regularly based on anecdotal evidence and opinion, although with some willingness to change and adapt based on evidence. The organisation tends to be reactive to events and external forces rather than evidence, though with some capacity to learn from past mistakes. On an ad hoc basis, the organisation seeks to identify best practices and innovative approaches.
- Services are mostly delivered according to existing service structures rather than the needs of local people and only in some teams is there a culture of responding to practitioners' ideas.
- Data capability and data is still largely siloed in departments but there is occasional pooling of resources (data, digital, IT and services) for specific projects. There may be several data teams within the organisation, and it is not always clear to colleagues where the responsibilities of each of these teams begin and end.

Level 2

- Decisions are frequently based on anecdotal evidence and personal opinion, with little willingness to change and adapt based on evidence. The organisation is primarily reactive to events and external forces, with little capacity to learn from past mistakes. The organisation rarely seeks out best practices and innovative approaches.

- Services are delivered according to existing service structures rather than the needs of local people and there is a limited culture of responding to practitioners' ideas.
- There may be teams of specialists, such as analysts, within specific directorates in the organisation and pockets of good practice. They infrequently collaborate with services or with other technical teams (digital and IT), and there is little transparency about their workloads or availability.

Level 1

- Decisions are made solely on anecdotal evidence and opinion, with no willingness to change or adapt based on evidence. The organisation is purely reactive to events and external forces and does not learn from its mistakes in the past. The organisation does not seek out best practices and innovative approaches.
- Services are delivered according to existing service structures rather than the needs of local people and practitioners' ideas are not respected.
- The limited amount of data capability is fiercely protected by individual departments and there is no collaboration or flexible deployment of resources. Technical capacity (digital and IT) and data are siloed in departments.

Theme 2: Leadership and strategy

This section describes the nature of leadership and strategy for organisations with different levels of data maturity. This includes how senior managers value data, the behaviours they exhibit and how strategy is developed in the organisation.

Level 5

- Senior managers are actively involved in the development of a data strategy and the delivery of important data projects. They demonstrate an appropriate understanding of relevant data techniques.
- There is a senior manager with specific data responsibility, such as a chief data officer (or similar). Other senior managers are aware of their data responsibilities within the organisation. There is a clear delineation of responsibility between them for different aspects of the data agenda. They manage the risks associated with data use and capitalise on opportunities and they make capacity and resources available according to their assessment of these.
- Councillors make decisions informed by data, are interested in the organisation's use of data and are ambitious for further development.
- Senior managers set out clearly how data is an important strategic asset and make clear how this relates to the broader organisational strategy. There is a clear vision and goals for the organisation's use of data that are communicated throughout the organisation. There is likely to be a clear organisation-wide data strategy and commitments are being delivered and monitored.
- Strategy about data recognises the full range of issues in terms of culture, leadership, the data life cycle, skills and capabilities, systems and tools and governance and compliance.
- There is an understanding of how the data stewarded by the organisation, partners and subcontractors can be used to support broader public benefit,

and a recognition of the organisation's role in the broader public sector data ecosystem.

Level 4

- Some senior managers have a relevant understanding of the ways in which data can be used to inform the strategic direction of the organisation. Senior managers receive reports on important data projects but may not be actively involved.
- An identified senior manager has responsibility for the use of data in the organisation. Other senior managers, on the whole, understand their governance and compliance responsibilities regarding the organisation's data.
- Councillors ask for data and evidence when making decisions and are interested in the organisation's use of data.
- Senior managers have set out how data is important to the organisation but this may not be clearly articulated in terms of broader organisational objectives. There may be an organisation-wide data strategy although progress on delivery of this is not always clear. Data strategy is mostly well-balanced although may have a technology focus.
- There is some awareness of how the data stewarded by the organisation can be used to support broader public benefit and a recognition of its role in relation to important partners in the data ecosystem.

Level 3

- Senior managers are occasionally involved in high-profile data projects, but they may feel out of their depth.
- There may be several senior managers who see that data is in their responsibilities but there has been no attempt to develop a joined-up vision for how these relate or how data can be used to maximise value for the organisation.

- Councillors may occasionally be interested in data and evidence to support key decisions.
- Senior managers recognise the need to set out how data is important to the organisation, but this is not clearly articulated in terms of broader organisational objectives.
- There may be a data strategy developed for parts of the organisation and in some corporate strategies. Any strategic thinking on data doesn't adequately recognise the organisational change, recruitment and culture change aspects needed and focuses purely on analytical or technical developments.
- There is limited awareness of how the data stewarded by the organisation can be used to support broader public benefit, and no recognition of the organisation's role in the broader public sector data ecosystem.

Level 2

- Senior managers are infrequently involved in the development of data strategy and important data projects.
- No senior manager has responsibility for the use of data in the organisation – everyone sees it as someone else's responsibility.
- Councillors are unlikely to ask for data and evidence when making decisions.
- Some senior managers recognise the need for a broader consistent strategy for data, but no activity has been undertaken to develop this. There is little recognition of the need to include data considerations in the overarching strategy documents produced by the organisation. Opportunities to use data are missed or not recognised.
- There is no awareness of how the organisation's data can be used to support broader public benefit, and no recognition of the organisation's role in the broader public sector data ecosystem.

Level 1

- Senior managers lack the interest, experience, skills and knowledge to oversee or get involved in data projects.
- There is no clear organisational leadership on data issues, including in terms of legal compliance roles.
- Councillors do not make decisions based on data and insight.
- There is no formal data strategy for the organisation and data is not given importance in internal or public strategy documents. Data is seen as a hindrance to decision-making and isn't trusted, isn't believed, or doesn't exist. There is a risk aversion in terms of data use, particularly in terms of data sharing.
- There is no understanding of the value of data, no awareness of how the organisation's data can be used to support broader public benefit, and no recognition of the organisation's role in the broader public sector data ecosystem.

Theme 3: Data life cycle

This section describes the organisation's practices throughout the data life cycle, split into six different subsections:

- a. plan and design
- b. collect or acquire, and ingest
- c. prepare, store and maintain
- d. use and process
- e. share and publish
- f. archive and destroy.

3a Plan and design

This section describes activities and behaviours of organisations in relation to data at the planning and design stage of projects.

Level 5

- Data issues are explored in the planning of all new work or service design changes or digitisation. Teams leading analysis or data projects routinely identify how each project supports organisational objectives and the statutory requirements for the project.
- Data that is already held by the organisation, and others, is identified. User research is always undertaken to understand the needs of the end users of the analysis or data products being developed. User requirements are translated into data requirements and a clear specification is developed. [Data architecture](#) and modelling activities are undertaken. Learning from previous analysis or data projects has been incorporated into ways of working.
- All data products, projects and services are built for re-use and methods and approaches are documented and made available. The team has identified the [data standards](#) and patterns¹ which could be used in the project. There are clear lines of accountability, risk assessments are undertaken and there is a cyber incident response plan where appropriate.
- There is a process to identify others within the organisation who have an interest in the project, such as communications colleagues and senior managers. The team works in the open, so that others outside of the council can track the progress of the work.² Where appropriate, a plan for engagement with residents is developed.

¹ In this context a pattern simply means an agreed way of doing things, similar to the idea of a framework.

² For example, see the public roadmap shared by the Gov.uk team - <https://www.gov.uk/roadmap>.

Level 4

- Data issues are explored regularly in the planning of new work or service design changes. Most officers on analysis or data projects can identify the business objective that their project supports.
- There are clear attempts to learn from previous projects and teams are also aware of the statutory requirements for the project. Attempts are made to identify and use data standards and patterns. Relevant data already held by the organisation is identified.
- User research is undertaken regularly to understand the needs of the end user of the analysis or data products being developed. User requirements are translated into data requirements and a specification is set out. Data architecture and modelling activities are undertaken.
- Lines of accountability are reasonably clear and risk assessments are frequently undertaken. Some consideration is given to cyber security issues, where appropriate.
- Effort is made to ensure that others in the organisation who have an interest in the data project are involved. Where appropriate, a plan for engagement with residents is developed.

Level 3

- Data issues are explored most of the time in planning new work or service design changes. It is not always clear what business objectives are linked to specific analysis or data projects.
- Lines of accountability of projects are not always clear. Not all the relevant stakeholders for the project are identified up front and colleagues involved in implementation or communications are often only involved at the end.
- Whether projects are planned well or not is dependent on the project lead, as the processes and guidelines in the organisations are either not consistently applied or are not adequate / don't exist.

- The projects tend to be driven by the needs of analysis or technology rather than users. Most of the risks for the project are identified but not all are mitigated.

Level 2

- Data issues are not considered when planning new work or service design changes. The rationale for data work can be unclear.
- It's unclear who is accountable for certain projects. Relevant stakeholders may not be aware of projects being undertaken.
- Most data projects are undertaken without a clear plan or consideration of how the work will be delivered.
- The projects tend to be driven by the needs of analysis or technology rather than users. Most of the risks for the project are identified but not all are mitigated.

Level 1

- No planning of data projects is undertaken, and data is often provided / collected reactively in response to requests for information.
- There are no lines of accountability for projects and key stakeholders are not involved.
- Projects fail to learn from past successes and failures. Best practices from elsewhere are not considered.
- Projects are driven by the needs of analysis or technology rather than users. There is no assessment of project risks.

3b Collect or acquire, and ingest

This section describes the organisational behaviours at the stage at which data is collected, acquired from elsewhere and ingested into business systems.

Level 5

- There are clear processes and approaches followed for the collection and ingestion of data which adhere to industry recognised design patterns and standards, where appropriate. Teams can easily get access to data from third party suppliers and contracts require suppliers to ensure data schemas³ are open and data is accessible.
- There is detailed knowledge of data held by the organisation, as well as relevant data available externally, for example, through the [LG Inform Plus](#) Application Programming Interface (API). The organisation's data is catalogued, findable and has up-to-date supporting documentation (including metadata). There is a well-used central data catalogue, as well as good service specific catalogues, and there is comprehensive awareness of where data is stored and can be accessed which supports continuity planning.
- New data collections or acquisitions are only considered if they are identified as necessary. There is on-going work to reduce duplication of organisationally important data sets and to ensure data minimisation.

Level 4

- There are processes in place for the collection and ingestion of data and those involved have a good understanding of best practices. Teams can get access to data from third party suppliers relatively easily.

³ Schemas define standard structures for data. For more information see:

<https://schemas.opendata.esd.org.uk/?b2q9ecbe=20230608132005-1>

- There is good knowledge of data held by the organisation, as well as most relevant data available externally. The organisation's data is mostly catalogued and findable and, on the whole, up to date. There might be a central catalogue, or some good catalogues in particular services, and there is a general awareness of the locations where data is used and can be accessed.
- Data is collected in line with broader organisational strategies and decision-making. There is some work to reduce duplication of important data collections.

Level 3

- There are some processes in place for the collection and ingestion of data and those involved have a basic understanding of best practices. Teams can mostly get access to data from third party suppliers although this may not always be easy.
- There is adequate knowledge of data held by the organisation, as well as some knowledge of relevant data available externally. The organisation's data is partially catalogued and findable, but not necessarily up to date. There is an awareness of some of the locations of the data.
- Data is collected mostly in line with broader organisational strategies and decision-making. There is some duplication of data collections.

Level 2

- Processes for the collection and ingestion of data are inconsistently followed and those involved have a limited understanding of best practices. Teams struggle to access data from third party suppliers and there are no provisions in contracts to allow for easy access to data.
- There is limited knowledge of data held by the organisation and little knowledge of relevant data sources available externally. The organisation's

data is not catalogued and not findable. There is limited awareness of the locations of the data.

- Collection goes beyond operational use and mandatory reporting requirements but there is little strategic purpose behind collection or use. There is some duplication of data collections.

Level 1

- There is no knowledge of data held by the organisation, or of relevant data sources available externally. The organisation's data is not catalogued and not findable. There is no awareness of the locations of the data. Teams are not able to get access to data collected by third party suppliers of services.
- Data collection is a by-product of operational and service delivery, and driven by central Government requirements.
- Processes for the collection and ingestion of data are not followed and those involved have a limited understanding of best practices.

3c Prepare, store and maintain

This section describes how the organisation prepares, stores and maintains the data that it holds.

Level 5

- The wider organisation can rely on getting access to trustworthy data easily and in a timely manner. There is a drive to continuously improve data quality and for updating and versioning data on a predictable and reliable schedule.
- Data can be easily integrated and is linked according to recognised approaches, standards and schema. Analyses are undertaken on frequently updated data extracts rather than live data from systems. Specialists within the organisation understand data flows across [enterprise architecture](#) and these relationships are mapped.
- There is a recognition of the need for specialist skills and resources to prepare data for use by others, such as data engineers. There may be an [Extract, Transform and Load](#) (ETL) capability.

Level 4

- The wider organisation can rely on getting access to trustworthy data easily and in a timely manner. There are processes for ensuring data quality and for updating and versioning data on a predictable and reliable schedule.
- Most data can be shared and integrated, some of it automatically. There may be work being undertaken to develop a 'single source of the truth' and there are the beginnings of integration across different systems.
- There may be a limited recognition of the need for specialist skills and resources to prepare data for use by others, such as data engineers.

Level 3

- The wider organisation has access to data; however, it may not be timely or efficient. Quality assurance processes exist, though they may be

inconsistently applied. Updating and versioning of data is done on a regular schedule but may be unreliable.

- Some individual departments may have individual data repositories, but these are not overseen corporately by the IT or analytical department. Data is not, on the whole, regularly maintained or assessed for quality / being up to date.
- The need for specialist skills and resources to prepare data for use by others may be overlooked.

Level 2

- Data access is difficult and unreliable, and there is little consistency in the quality assurance processes. The schedule for updating and versioning data is not followed.
- Some teams have set up arrangements to store and maintain data they collect. A lot of time is still spent cleaning data before being able to be used.
- There is a lack of understanding of the need for specialist skills and resources to prepare data for use by others.

Level 1

- The organisation has limited access to data and no processes in place for ensuring data quality. Updating and versioning data is done sporadically, if at all.
- There are no consistent processes in place for the storage of data. Datasets are frequently stored on individual computers and are not subject to cleaning or auditing. There is no culture of making data available to other teams / individuals to support the delivery of their work. No one knows what the most up to date dataset is.
- There is no recognition of the need for specialist skills and resources to prepare data for use by others.

3d Use and process

This section describes all use and processing activities in the organisation including analysis and automated approaches.

Level 5

- Teams across the organisation use timely data to make day-to-day decisions and deliver outcomes based on insights. Teams get the insights they need through easy-to-use tools and appropriate analytical support.
- As well as using descriptive, diagnostic and predictive analytics the organisation has begun to think about identifying use cases for automated recommendations (for example identifying parking infringements or likelihood of receiving planning consent). Predictive data analysis or modelling is used to inform the design and development of services as well as to understand demand and support planning. Data is used to diagnose and evaluate the existing services delivered by the local authority and to inform the development of strategy and plans.
- There are performance analysts within the organisation who produce insights for councillors, senior managers and individual directorates.
- Data can be extracted from operational systems and is used regularly by teams to monitor the effectiveness of provision.
- There is appropriate and consistent use of data science techniques and tools. Approaches are re-used across projects – for example, [reproducible analytical pipelines](#) – and there is open sharing of results and techniques to accelerate improvements.

Level 4

- Teams across the organisation use data to make day-to-day decisions on service delivery. Teams get the insights they need through tools and analytical support.

- Predictive data analysis or modelling is used to inform the design and development of services as well as to understand demand and support planning. Data is used to diagnose and evaluate the existing services delivered by the local authority and to inform the development of strategy and plans.
- There are performance analysts within the organisation who produce insights for councillors, senior managers and individual directorates.
- Data can be extracted from operational systems and is used frequently by teams to monitor the effectiveness of provision.
- There is appropriate and consistent use of data science techniques and tools. Approaches are being trialled across projects, for example, reproducible analytical pipelines.

Level 3

- Most teams across the organisation are able to use near-time data to make day-to-day service delivery decisions.
- Data is used to diagnose and evaluate the existing services delivered by the local authority and to inform the development of strategy and plans.
- There are performance analysts within the organisation who produce insights for councillors, senior managers and individual directorates.
- Data can be extracted from operational systems and is used occasionally by teams to monitor the effectiveness of provision.
- Projects are tested on an individual basis, but there is no re-use of approaches.

Level 2

- Most teams across the organisation do not use timely data to make day-to-day decisions on service delivery.

- Data is used to describe key performance indicators of services and to report to funders, regulators and central Government but rarely to make service design decisions.
- Projects are tested on an individual basis and there is no re-use of approaches.

Level 1

- Teams across the organisation do not use data to make day-to-day service delivery decisions. Insights are not shared, and data requests are viewed with suspicion.
- Data is not used to inform decisions or is used retroactively to support decisions made. Performance information is not used by senior management to make decisions. Data in operational systems is only used to report statutory monitoring returns.
- Projects are delivered on an individual basis and there is no re-use of approaches.

3e Share and publish

This section describes the practices of organisations at different levels of data maturity in relation to sharing data, internally and externally, as well as making data and insights available through publishing.

Level 5

- There is routine sharing of relevant data with other public sector partners, not only for statutory purposes, but to inform joined up strategic planning and the coordination of service delivery, for example sharing with local health organisations. There is a programme of standardisation across these. There is an organisational template data sharing agreement which is used routinely.
- Open data is published to the highest standard (for example it is linkable) and the council publishes to an open data portal / data observatory. This published data is made use of by internal teams and partners and recognised as the most up-to-date data. There is a proactive programme to identify datasets to publish, reducing the number of Freedom of Information requests. There is awareness of recognised data taxonomies, unique reference indicators and schemas and there is automatic validation undertaken before data is published.
- Data and insights are made accessible to non-technical audiences such as residents and businesses, and products for these audiences are developed on the basis of user research and testing.

Level 4

- There are examples of data sharing with close public sector partners for statutory reasons such as domestic violence prevention and in response to requests. There is an organisational template data sharing agreement which is used routinely.

- Some data is shared and integrated either centrally or linked across the organisation. Data is proactively published as open data. For statutory data publications, national schemas are used and data is validated before publication.
- Some approaches to data publication are driven by user research insights, potentially where there are campaigns or strategically important priorities.

Level 3

- Data is shared across teams within the council and with some strategic partners, mostly for statutory reasons. Data sharing agreements are drafted on an ad hoc basis and there is no knowledge across the organisation of what agreements are currently in place.
- Some departments have infrastructure to make data accessible to others in the organisation and only some make use of data schemas and standards.
- There is a developing recognition that different data publication and communication approaches are needed for different audiences. The choice of publication tools is usually determined by IT rather than insights from user research.

Level 2

- There is limited ability to share data across the council and data is rarely shared with outside partners.
- Only mandated data sets are published, and these are not always provided in a timely manner or using data schemas or standards.
- There is little recognition that different data publication and communication approaches are needed for different audiences. The choice of publication tools is determined by IT rather than insights from user research.

Level 1

- Data is rarely shared with other organisations.

- Statutory data publication obligations are not fulfilled on time and sometimes not at all. Data is not provided in a machine-readable way in response to Freedom of Information requests.

3f Archive and destroy

This section sets out the practices of organisations in terms of archiving data and destroying it where appropriate.

Level 5

- Historic datasets that are no longer relevant are archived or, where appropriate, destroyed. The organisation is aware of all of its responsibilities in relation to the [retention of public sector information](#) and has clear processes and technology solutions to ensure compliance.

Level 4

- Data is usually appropriately archived and destroyed where relevant. Automatic approaches have been built into some systems. There is some level of expertise of the retention of public sector information responsibilities of the organisation.

Level 3

- Some teams routinely archive and destroy data, but this is mostly a manual and effortful process. There is expertise in some areas on the organisational responsibilities for data retention, but this is not widely known across the organisation.

Level 2

- Out of date data is sometimes used in error and there is limited knowledge of the organisation's responsibilities in relation to archiving and destroying data. There is little recognition of the need to archive data and no clear understanding of statutory responsibilities.

Level 1

- There are no defined policies around archiving and destroying data that ensure data is handled according to regulatory and legal requirements.

Theme 4: Systems and tools

This section describes the systems and tools used by organisations at different levels of maturity.

Level 5

- The organisation has a scalable and flexible data infrastructure which supports all stages of the data life cycle and encompasses the whole organisation. Data systems are joined up within the organisation and allow for the routine sharing of data with other organisations, for example through APIs. Principles of data portability are built into the infrastructure so, if necessary, data can be moved from one system to another and there is no vendor lock-in.
- Data owners and the IT department are heavily involved in the specification, design and implementation of data systems. Data scientists have access to the tools that they need and there is a suite of tools to support deriving insights from data available to employees of all technical levels.
- Data needs are considered at the point of procurement of systems, and through on-going service-level agreements (SLAs), to ensure that data standards are incorporated into systems and data can be easily accessed.
- Data is securely stored and backed up regularly, and there is a system in place to ensure the accuracy and reliability of data.

Level 4

- The organisation has a data infrastructure offer from the central IT department and this is generally used. Some data is available through APIs but there is not necessarily a principle of data portability built into the technical infrastructure.
- Data owners and the IT department are involved in the specification, design and implementation of data systems. Data scientists have access to some of the tools that they need and there is a limited suite of tools to support

deriving insights from data. Data scientists can install appropriate software and tools and are provided with bespoke hardware if needed.

- Data needs are considered at the point of procurement of systems, and through on-going SLAs, but data standards may not be incorporated into systems and data may not be easily accessed.
- Data is backed up regularly and stored securely.

Level 3

- The organisation is beginning to invest in data infrastructure. There is a limited systems architecture which allows for some sharing of data with other organisations and the production of some basic analyses.
- Data owners and the IT department are minimally involved in the specification, design and implementation of data systems. Data scientists are using standalone devices to run analysis tools such as Python or R.
- Data needs may not be considered at the point of procurement of systems and data standards may not be incorporated into systems and data may not be easily accessed.
- Data is backed up regularly and stored securely.

Level 2

- The organisation has a limited data infrastructure, and the architecture does not allow for sharing of data with other organisations and the production of basic analyses. It is not easy to move data from one system to another.
- Data owners and the IT department are rarely involved in the specification, design and implementation of data systems. Data scientists have limited access to some of the tools that they need and there is a basic suite of tools to support deriving insights from data. The IT department is overly cautious about the use of new tools and approaches and frequently refuses to install anything other than standard software. Access to appropriate analytical tools may be limited.

- Data needs may not be considered at the point of procurement of systems and data standards may not be taken into account, making it difficult for data to be easily accessed.
- Data may not be securely stored or regularly backed up, and there may be no system in place to ensure data accuracy and reliability.

Level 1

- The necessary data infrastructure is not in place at the organisation. The majority of data is analysed in spreadsheets and stored on individual computers.
- Data owners and the IT department are not involved in the specification, design and implementation of data systems. Data scientists have no access to the tools that they need and there is no suite of tools to support deriving insights from data.
- Data needs may not be considered at the point of procurement of systems and data standards may not be taken into consideration, making it difficult for data to be accessed.
- Data is not securely stored or backed up on a regular basis, and no system is in place to ensure data accuracy and reliability.

Theme 5: Skills and capability

This section describes the characteristics, practices and behaviours that relate to issues of skills and capability at different levels of maturity.

Level 5

- The organisation has highly data-literate staff and has access to the appropriate level of skills. The organisation has in-house data specialist roles such as data architects and data engineers. The organisation has documented promotion pathways, and recruitment and retention plans for technical and non-technical data staff.
- The organisation has a comprehensive understanding of the types of roles and individuals that it needs to use data to support its organisational objectives and has prioritised investments in hiring and retaining these professionals.
- There is a comprehensive staff training and development scheme for all staff to build their data literacy, including for councillors. There are training policies to keep analytical and data staff up to date with evolving tools and techniques. At all levels, employees are encouraged to join networks and are encouraged to present capabilities at workshops and conferences. There are vibrant specialist communities of practice across the organisation.

Level 4

- There are some highly data-literate staff, and the organisation mostly has access to the appropriate level of skills. The organisation has in-house roles such as data architects and data engineers. The organisation has documented promotion pathways and/or recruitment and retention plans for technical and non-technical data staff.
- The organisation has a basic understanding of the types of roles that it needs to use data to support its organisational objectives, but it has not yet prioritised investments in hiring.

- There is a basic staff training scheme for all staff to build their data literacy, including for councillors. There are basic training policies to keep up to date with evolving tools and techniques. Specialist analytical and technical staff can get access to appropriate training and professional development.

Level 3

- The organisation has some data-literate staff and access to the necessary skills. For high impact or high-profile projects there is a reliance on outside expertise in the form of consultants or contractors. The organisation has begun to recruit specialist technical staff and is beginning to adapt processes and ways of working to make best use of their skills and expertise.
- The organisation has an understanding of the types of roles that it needs to use data to support its organisational objectives, but it has not made any investments in hiring.
- There is some staff training available to all to support the development of data literacy although this is focused on analytical and technical skills rather than strategic data skills. There are adequate training policies to keep up to date with evolving tools and techniques.

Level 2

- The organisation has limited data-literate staff and restricted access to the required skills. The organisation has some in-house data specialist roles. The organisation has limited promotion pathways for technical and non-technical data staff.
- The organisation has a limited understanding of the types of roles that it needs to use data to support its organisational objectives and has not considered investing in hiring.
- There is a limited staff training scheme for all staff to build their data literacy, including for councillors. There is a recognition that training on data is

needed for data specialists although there is no structured approach to identifying appropriate courses.

Level 1

- The organisation has limited data-literate staff and limited access to the necessary skills and the roles of data professionals are not respected. The organisation does not have any in-house data specialist roles. The organisation does not have any documented promotion pathways for technical and non-technical data staff.
- There is no understanding of the types of data skills needed in the organisation and there has been no assessment of the current organisational capability.
- There is no staff training scheme for all staff to build their data literacy, or for councillors. There are no training policies to keep up to date with evolving tools and techniques.

Theme 6: Governance and compliance

This section describes the characteristics of organisational data maturity in terms of data and information governance, compliance with privacy legislation and other statutory requirements, as well as cyber security considerations.

Level 5

- The organisation is compliant in relation to all its statutory data governance responsibilities and this is continuously monitored.⁴ Data is held securely and safely. There is a culture of anticipation and mitigation in terms of risks and cyber security issues. Where there are breaches there is a no-blame approach and the organisation seeks to learn from any mistakes and vulnerabilities.
- There is a senior level board that oversees data and information governance within the organisation which reports to the chief executive and leader of the council. The board is supported by a nominated team which escalates issues for discussion and offers advice to council employees. These oversight arrangements are described publicly and have published data policies.
- The organisation has mature arrangements for engaging members of the public and businesses about its use of their data, for example through public participation in development of a data charter.
- The development of data products and services incorporates privacy by design and security by design, or similar approaches. Data Protection Impact Assessments are always undertaken for projects involving data, and they are well understood. The procedures and technical infrastructure for

⁴ There are several legal requirements that relate to data including General Data Protection Regulation (GDPR), Freedom of Information (FOI) and Re-use of Public Sector Information Regulations 2015 (RPSI), as well as department specific requirements.

responding to Subject Access Requests have been developed and are operational.

- Data ethics is considered routinely in project development and data sharing, and there is clear guidance on how to do so based on recognised approaches. When the organisation employs automated approaches and machine learning, an assessment is performed in accordance with the [Algorithmic Transparency Recording Standard](#). These considerations are extended comprehensively to third party suppliers.

Level 4

- The organisation is compliant in relation to all its statutory data governance responsibilities. Data is held safely and securely. There is an awareness of risks and cyber security issues.
- There is a team which has a lead on data governance, perhaps in addition to other responsibilities. There is a senior level group which oversees the governance of data across the organisation as part of its remit. These arrangements are set out in guidance and there are clear procedures.
- The council has a process for engagement with residents and businesses about its use of their data and how the council uses data for the delivery of services.
- Data Protection Impact Assessments are mostly undertaken for each project. Data ethics and algorithmic transparency assessments are undertaken consistently for all new relevant projects and services.
- There is an awareness of the importance of considering data ethics in project development, and there is some guidance on how to do so.

Level 3

- The organisation is mostly compliant in relation to all its statutory data governance responsibilities. Data is, on the whole, held safely and securely. There is reasonable knowledge of risks and cyber security issues.

- There is a team which leads on data governance, perhaps in addition to other responsibilities. In some departments there are groups which oversee the governance of data. These arrangements are not always set out in guidance, however.
- The organisation has basic arrangements for engaging members of the public and businesses about its use of their data.
- Subject Access Requests are responded to in a relatively timely manner by the organisation, although the process is sometimes uncoordinated and inefficient. Little knowledge is retained about how to approach the process. Data Protection Impact Assessments are undertaken for the most sensitive and contentious uses of data in the organisation. There may be difficulty in understanding how data is used by outside providers and services, however where this occurs it is recognised as a risk.
- There is an awareness of the need to ensure data is managed and used responsibly and ethically, and processes and procedures are in place to support this.

Level 2

- The organisation is usually compliant in relation to all its statutory data governance responsibilities. Data is not always held safely and securely. There is limited knowledge of risks and cyber security issues.
- Staff know where to go to get support and guidance on issues but mostly reactively engage when there are problems or issues.
- The organisation has few arrangements for engaging members of the public and businesses about its use of their data.
- The organisation is only just starting to undertake Data Protection Impact Assessments on sensitive projects. There is the beginning of a recognition that data ethics considerations are important but a lack of understanding of where to start.

Level 1

- There is no awareness of the need for governance of data in the organisation. The organisation has recently, or is at risk of, receiving a negative audit/inspection or regulatory intervention.
- There are no formal data and information governance groups nor any clear policy or guidance.
- The organisation has no arrangements for engaging members of the public and businesses about its use of their data.
- There is no consideration about privacy in the development of data products and services. There have been recent data breaches or there is a perceived risk of data breaches.
- Data ethics are not considered in project development, and there is no guidance on how to do so.



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