Data and Business Intelligence Strategy 2023 – 2028

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Dorset Council

Contents

Foreword

Cllr Spencer Flower, Leader of the Council

Data is one of our most valuable assets as a council and helps to inform how we best deliver our services to meet the needs of our communities.

Over the next five years we want to make even better use of data and insight as we continue to deliver our ambitious Council Plan and ten council commitments. We will proactively seek data and business intelligence that can help with decision making and ensure we continue to be transparent in how we use, keep and store data.

This strategy puts down the foundations for a data-first approach across the council and our future data and information aspirations.

It will ensure data is embedded in everything we do to improve the outcomes for people in Dorset.

Matt Prosser, Chief Executive of Dorset Council

This strategy sets out our approach to become a data-led organisation over the next five years. It recognises that data and business intelligence needs to be at the core of our decision making, using good quality, relevant and timely information to inform and improve the services we provide to our residents.

It recognises the need to remove barriers where we can, making data accessible to all those that need it while aiding better collaboration across the council. It will become part of the council's DNA and day-to-day practices so we can all work more effectively and efficiently.

Equally, it highlights how we will work with our public sector partners to ensure we share evidence and insight to improve, plan and ultimately shape the services we provide.

Executive Summary

- The Data and Business Intelligence (BI) strategy establishes the council's ambition to place the use of data and intelligence at the core of decision-making and policy development.
- Our vision is to become a data driven, intelligent council. To evolve into a proactive data driven organisation, enabling successful delivery of the Council Plan, and improving outcomes for the people of Dorset.
- The strategy outlines the foundations needed to enhance our forecasting, reporting and analysis in support of evidence-based and data-driven decision making. Ultimately this will improve the efficiency of our services, the quality of outputs and improve outcomes for the people of Dorset.
- This is a 5-year strategy and accepts that over this period technology will change and evolve, shifting the 'art of the possible' and opening-up new opportunities to use our data in new innovative ways.
- A series of workshops were completed with colleagues from across the council, our partners in the Integrated Care Service (ICS), and via an Elected Member joint Overview Committee workshop.

The workshops identified 8 key missions and themes covered by this strategy:

- Data Culture and Mindset – valuing data as a key asset
- Data Quality – improving data quality
- Technical Requirements & Infrastructure – ensure we have appropriate technology and infrastructure
- Business Intelligence and Data – develop and invest in business intelligence and data science
- Skills and Learning – develop our people's data skills
- Data Governance – establish clear governance to manage, utilise and care for our data
- Business Intelligence and Data Science - we will develop and invest in our data science capabilities
- Data Ethics - we will consider the whole picture to justify and determine the collection, use and impact of data

Introduction

Why we need a Data and Business Intelligence Strategy

Dorset Council was formed in April 2019, as part of Local Government Reorganisation and brought together 6 councils into one new Unitary Council. The recently refreshed over-arching Council Plan outlines five strategic priorities:

1. Protecting our natural environment, climate, and ecology
2. Creating stronger, healthier communities
3. Creating sustainable development and housing
4. Driving economic prosperity
5. Becoming a more responsive, customer focused council

These priorities are supported by a clear delivery plan towards making Dorset a great place to live, work and visit. The Data and BI strategy is positioned in support of all of the above five themes. Making good use of data will underpin delivery of all aspects of the wider council's objectives and hence illustrates the importance of this strategy for ensuring success against the wider council's objectives. In support of these priorities, the council has a comprehensive transformation programme to improve services for residents. This specifically references the need for Dorset Council to implement an intelligence and data-driven approach and the informed use of data will underpin all elements of the council's ambitious transformation plans. These include:

- Being more commercial – Modernising the way we operate to ensure we are business friendly, to behave in a more business-like way and commission as one council.
- Putting our customers first – Working together to design and deliver modern, accessible services to our customers.
- Delivering climate and ecological priorities – Ensuring our change programme delivers in line with our climate and ecological strategy.
- Making the best use of our assets and leading economic growth – Reviewing the council buildings and properties to ensure best use and value of assets and help drive prosperity whilst adopting a focus on places and spaces.
- Implementing a digital, intelligent, data led approach – Using our data to help us predict demand and improve our prevention agenda.
- Working with the Integrated Care System – Working with partners to transform our care services by removing traditional divisions between services, and ensure people and communities get the support and care that they need.

This Data and BI strategy establishes the council's ambition to place the use of data and intelligence at the core of decision-making and policy development. This strategy

compliments, but does not seek to subsume, various other key areas of work currently being undertaken. It recognises and complements the important and evolving work being undertaken to enhance the council's approach to Records Management (RM) and Information Governance (IG). These areas are central to realising various aspects referred to by this data strategy, particularly in relation to effective governance, quality, and life cycle management of the information we hold. Other areas include ICT and the systems needed to support our data-driven approach; BI & Performance as the central service for the provision of intelligence and insight; and the evolving Customer Strategy which aims to use data to improve our customers' experience. The strategy also supports the council's digital vision to become a 'digital council in a digital place, putting people and their needs first using design and modern technology to improve people's lives'. Further, it sits alongside the broader and evolving ICS data strategy. At various points the strategy will allude to these important areas, but where our focus is on becoming a data-driven and intelligent council. These key areas of the council will all use and refer to data in different ways, viewing data via different lenses.

The strategy will outline the foundations needed to enhance our forecasting, reporting and analysis in support of evidence-based and data-driven decision making. Ultimately this will improve the efficiency of our services, the quality of outputs and improve outcomes for the people of Dorset. As an ambitious council, we recognise the huge potential that better use of our data holds for identification of new opportunities and service improvements both in terms of delivery and value for money. It is anticipated that all future Dorset council strategies will reference where and how they are able to support the data-driven ambition outlined in this data and BI strategy.

The COVID-19 pandemic has been a major disrupter and challenge in all our lives. For Dorset Council it provided a compelling opportunity to realise the power of our data and how joining-up and sharing data with our partners could realise tangible and meaningful benefits. Data helped us to inform our response to the pandemic and ensured the necessary support for those in need. We used technology to share data with partners organisations, acting as a joined-up system to help those in need. This included significant partnership working across Health and the Voluntary and Community Sector, using data to aid our most vulnerable residents.

> *'In the wake of Covid-19, local government organisations have a huge opportunity to supercharge their services by harnessing the power of their data. (…) Over the course of the pandemic, one thing that has become increasingly clear is that when councils are able to leverage user data, they can make better services that respond to the needs of those users.' (Glen Ocskó, Head of Local Government, Made Tech)*

As we move into the 'new normal' we should not lose momentum, learning from the pandemic to improve our use of data and intelligence to effectively deliver against our council plan priorities. This strategy captures the momentum post-Covid of the 'new-

normal,' harnessing a desire to build on these foundations and realising our ambition of being a data-driven 'intelligent' council, using data to improve resident's experiences and outcomes.

Looking ahead we must strengthen our intelligence and foresight to navigate further major challenges that could impact our operations and our communities, from an ageing demographic to climate change. Over the next three decades we will need to act rapidly on climate, nature, and adaptation. Stewarding our operations and Dorset to cleaner, greener systems for how we power, heat, feed, house and transport ourselves, including seizing the health and economic opportunities it could deliver, will need to put data at its heart.

Dorset Council is part of an Integrated Care System (ICS) and has recently become a founder member of the new Dorset Data and Analytics Centre of Excellence (DACOE) reflecting its role in the wider system towards using data and analytics to improve outcomes for people in Dorset.

Through a series of discussion and workshops with people from across the organisation, and with colleagues in Public Health and our wider Integrated Care System (ICS) partners, we have identified that we would like our council to be a place where we:

- value our data as a key asset
- take pride in the quality of our data, and take responsibility to ensure it is accurate, complete, consistent, valid, unique, and relevant – particularly when entering data into systems
- strive towards near real time data wherever possible to aid decision-making
- develop and invest in our BI and data science capabilities to bring data together, enabling new insights to challenge existing ways of working, inform decisions, inform policy and improve outcomes
- make increased use of advanced data techniques such as artificial intelligence, machine learning and data mining to maximise the power of insights derived from our data
- enable and make use of quality data from external sources
- invest in our technology and infrastructure to enable enhanced data insights and increase our ability to derive value from big data
- enhance automation of operational reporting and focus increasingly on BI
- procure interoperable systems which allow data to be linked, allowing deeper insights to be derived from our data
- provide data in easy to use, accessible reports and dashboards through establishing a cloud-based data warehouse and using a common platform (PowerBI)
- provide training to users on how to get the most from PowerBI reports and dashboards

- democratise our data and provide open access to our data wherever practicable and appropriate
- develop our internal organisational data skills and knowledge
- ensure we use our data ethically and respect people's privacy
- make sure our data are secure and access to sensitive information is controlled via user permissions and appropriate governance, including for dashboards and reports
- have clear frameworks in place to manage, utilise and care for our data throughout its lifecycle, including for its disposal and archiving where appropriate
- understand the provenance of our data, adopting the principle of using master data sets rather than duplication
- where appropriate share our data internally where this enables us to deliver better services and outcomes for the people of Dorset
- work with our partners to share data across systems where this enables us to deliver better outcomes and it is appropriate to do so, including supporting the delivery of the Integrated Care Partnership Strategy
- provide open access to data wherever this is both possible and appropriate, allowing our communities to use this for furthering community outcomes

This is a 5-year strategy and accepts that over this period technology will change and evolve, shifting the 'art of the possible' and opening-up new opportunities to use our data in new innovative ways. The strategy therefore provides the foundations for understanding and using our data which can be further developed during future iterations.

What do we mean by Data?

Data is a wide-ranging term which can encompass a range of things from numbers inputted into a computer system, to visual or audio data, or paper-based. Data is all around us but requires context and processing to become meaningful/useful. For the purposes of this strategy, data will be understood in the following terms:

> *'In the most general sense, data refers to a collection of individual values that, when processed, convey information'. (techterms.com)*
>
> *And*
>
> *'…facts or numbers, collected to be examined and considered and used to help with making decisions'* (Cambridge Dictionary).

Data is treated as distinct from information, where information in this context is akin to the BI outputs realised from the data.

> *'Information is something that provides the answer to a question of some kind or resolves uncertainty. It **is** linked closely to data and knowledge, which is why the terms can often be confused.' (delta-net.com, added emphasis)*

And

'Data that has been processed, e.g. Information can be about facts, things, concepts, or anything relevant to the topic concerned. It may provide answers to questions like who, which, when, why, what, and how.' (Cambridgeinternational.org)

The strategy therefore considers the linked but distinct areas of data and BI – the move from the raw, unprocessed through to the informed, ordered intelligence used for decision-making in a data-driven, intelligent organisation.

(Rahbek, A.S, 2022 - Workplace Insights – How To Benefit From Workplace Analytics (askcody.com))

In doing so it outlines the foundation areas for delivering a data-driven approach for Dorset Council.

Data is all around us and we use it every day and can be either quantitative (e.g. how much/how many), qualitative (e.g. customer feedback/experience), or visual (such as spatial data in maps). Data can also be structured or unstructured and the type of data will have a significant bearing on its use, storage and analysis. Structured data comprises of values held in a table or relational database which can then be subjected to quantitative analysis. Examples could include election results, temperature measurements, financial transactions.

'data that can fit squarely into a table or a relational database, where every row is an observation, every column a variable, and the cells at the intersection of rows and columns contain values. Consequently, the entire database or parts of it can be subject to quantitative analysis.' (Grossman J. & Pedahzur A., 2020)

By contrast, unstructured data can be messy and eclectic taking various forms such as text, audio, or video. Examples could include the content of a speech or a blog. To analyse this information, a structure must be imposed.

'Because of the messy and eclectic nature of unstructured data, attempts to investigate them with conventional statistical methods would often be futile… To analyse such unruly data in a quantitative way, one needs to impose a structure

upon them by coding selected data points as observations and variables—that is, rows and columns.' (Grossman J. & Pedahzur A., 2020)

Data needs to be 'processed' for use in decision-making. This strategy is therefore concerned with the transformation of data into a usable and 'actionable' form so it can be analysed or used in decision-making.

What is Business Intelligence and Data Science

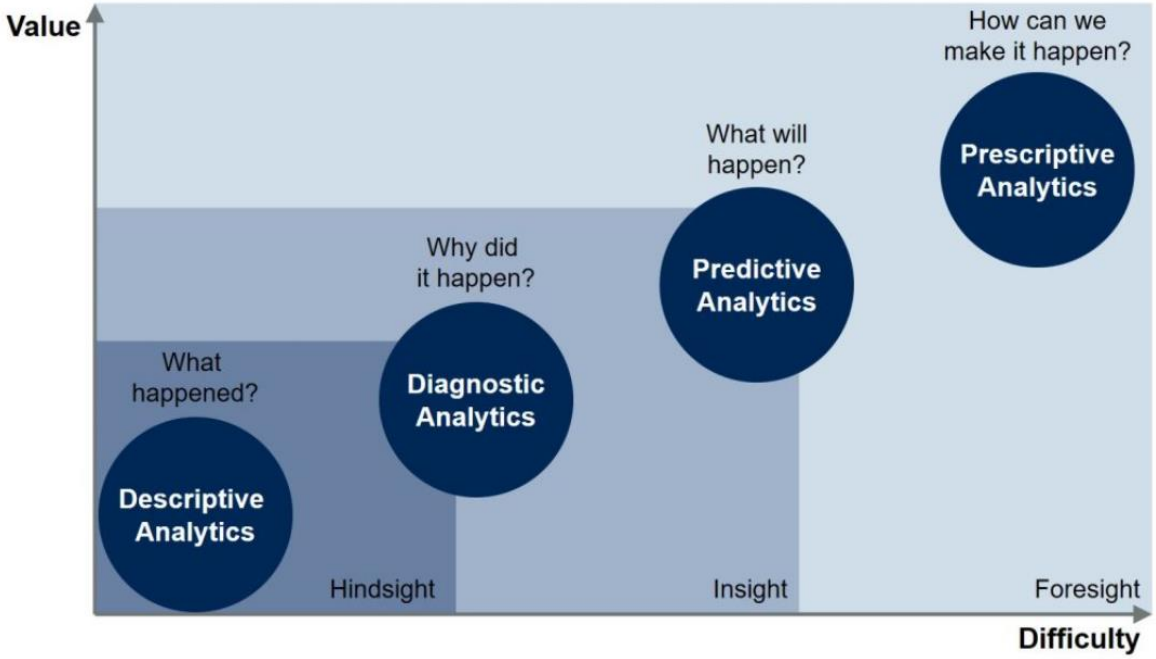
Business Intelligence takes our raw data and helps us to understand the story within. It does this by combining data and presenting it in a logical and clear way. Once processed, data can be visualised and then interpreted into an understandable 'story'. It is only at this point we can derive useful, actionable insight/intelligence.

(Rahbek, A.S, 2022 - Workplace Insights – How To Benefit From Workplace Analytics (askcody.com))

BI enables us to make informed decisions, enabling us to deliver more efficient services with better outcomes. This is something which Dorset council has already started to develop and deliver. Data Science takes a step forward in the level and depth of analysis allowing for the creation of data models to test hypothesis and for predictive analytics.

'Business Intelligence (BI) and data science are both data-focused processes, but there are some key differences between the two. In general, business intelligence focuses on analysing past events, while data science aims to predict future trends.' (CFI – Corporate Finance Institute)

Data science can make a real difference, allowing us to better understand future needs and to prepare for the needs of tomorrow. We can use BI and data science to learn from the data we hold to predict what might happen in the future.



(Gartner, 2019)

This strategy is aligned with the themes of the Council Plan and positions data and BI as enablers to deliver the council's priorities and ambitions outlined at the beginning of this document.

The Vision

Our vision is to become a data driven, intelligent council.

To evolve into a proactive data driven organisation, enabling successful delivery of the Council Plan, and improving outcomes for the people of Dorset.

Where we are today

Changes to the way we work are already happening across the organisation, including the promotion and early development of BI. Significant work has been completed since 2019 with the development of the council's performance management framework and extensive new performance dashboards provided by the central BI & Performance Service. However, to date the primary focus has been on:

(1) ensuring backwards-looking transparent performance reporting, including compliance with national statutory performance reporting requirements

(2) providing operational management reporting via interactive dashboards

This has led to a significant increase in the use of interactive reports and dashboards with an associated roll-out of the MS PowerBI platform, and whilst this represents a significant step forward in the council's use of data, there is significant scope to do more and achieve more. This includes investment in how we store, access, and use our data alongside investments in data science and predictive modelling to drive our decision-making. For example, the council currently has a data warehouse which resides on-premises. However, the current data warehouse will continue to grow as we increase our use of data, and therefore being on premise may no longer be fit for purpose. Consideration will be given to transform our platform and move towards a cloud hosted environment, considering the costs associated with both the setup, ongoing storage, running costs, and predicted growth.

We recognise there are several building blocks to put in place to become truly data driven, and this strategy recognises the importance of taking the organisation on a 'journey' towards this end. The Local Government Association (LGA) is encouraging local authorities to make better use of data to:

- design services around user needs
- engage and empower citizens to build their communities
- drive efficiencies and public service transformation
- promote economic and social growth through the innovative use of data
- be transparent and publicly accountable

Improving our use of data and BI will allow us to become increasingly proactive in delivering better outcomes and services for the people of Dorset whilst delivering value for money and a more sustainable impact on our environment.

As a council we operate in a challenging financial climate and are still counting the financial costs of the recent covid-19 pandemic. This is set against a background of a 60% decrease in Government funding for councils across the county since 2010 and the current cost of living challenge, including inflation running at a 40 year high.

Dorset has significantly more older people than many other areas of the country: 29% are aged over 65 compared to 19% in England and 12% in London. Even prior to the pandemic, demand for our services was rising, with people living longer with complex health needs. Nearly two thirds of council spending is on social care, including supporting vulnerable children at risk of neglect or abuse, disabled children and adults, and older people with significant, complex care needs. We are also seeing growing numbers of children with special educational needs and disabilities (SEND).

In relation to our climate, whilst the Council's emissions have been cut by a quarter since 2019 and Dorset's by around a fifth, we need to go much further to ensure a net zero, nature positive and resilient Dorset. Understanding of things like why and where we need energy, where we might need to charge vehicles, or where we could best create and enhance habitats will be critical to plan our trajectory. Assuring ourselves that we're on track will require boosting our understanding of our emissions (including from what we buy) and the extent and condition of our 'natural assets' like our habitats and wildlife.

Improved use of data and BI can help us to better meet some of these challenges.

> *'The use of data plays an increasing role in designing, delivering and transforming public services to improve outcomes and drive efficiencies within current financial constraints.'* (LGA)

Data can be used to model the impacts of decisions and provide predictions for outcomes. For example, collaborative data sharing with the wider ICS to support population health management can help direct early interventions and support to alleviate future pressures on the system. Additionally, data and intelligence can be used to demonstrate evidence to support funding bids and lobbying for fairer funding.

The council is already making use of data science and predictive analysis to help with the current cost of living challenge. A cost of living working group has been convened under the #DorsetTogether umbrella and has brought together colleagues from across the council and our strategic partners from the voluntary and community sector to work together on this issue. This includes organisations such as Age UK, Citizens Advice and Help and Kindness. We have used predictive modelling to understand the impact of the cost-of-living challenge on Dorset households, including using powerful mapping technology to understand where we have areas of the county suffering difficulty – or which

areas are likely to experience issues over coming months and years. The model accounts for the latest economic forecasts and includes central Government mitigation. The data has been incorporated into a PowerBI report to provide an innovative and visually impactful tool enabling the working group to consider different scenarios, including where to target resources and services to help minimise the impact on Dorset residents. The model has attracted significant interest from other councils and been showcased at various national forums. This is an example of the type of activity which will be further enabled by this strategy.

In addition, through our 5G Rural Dorset test bed and trial programme we have demonstrated the benefit of smart sensors; as the use of sensors matures and is more widely adopted, the data captured will have the power to influence how we design places and create new ways of delivering services.

> *'Smart cities and Internet of Things (IoT) initiatives combine data with technology to improve*
> *the functionality of places... The data created by these devices – physical objects equipped with sensors and network connectivity – can be used to make tasks more efficient, such as traffic management, water or air quality monitoring, and the operation of infrastructure such as street lights.'* *(local.gov.uk)*

All of the above represent an exciting opportunity for Dorset and rely on our use of data.

Data Maturity

To establish a baseline for how and at what level of complexity data is used at Dorset council, a data maturity assessment was completed.

> *'Data maturity can refer to the readiness of a local authority to take on data work of different levels of complexity' (Symons, T, NESTA, 2016)*

In 2022, two data maturity surveys were conducted, based on the NESTA LGA Wise Council Data Maturity Model. The first survey was directed to 800 managers in the organisation as representative of a group of key organisational decision makers. This survey covered several areas including:

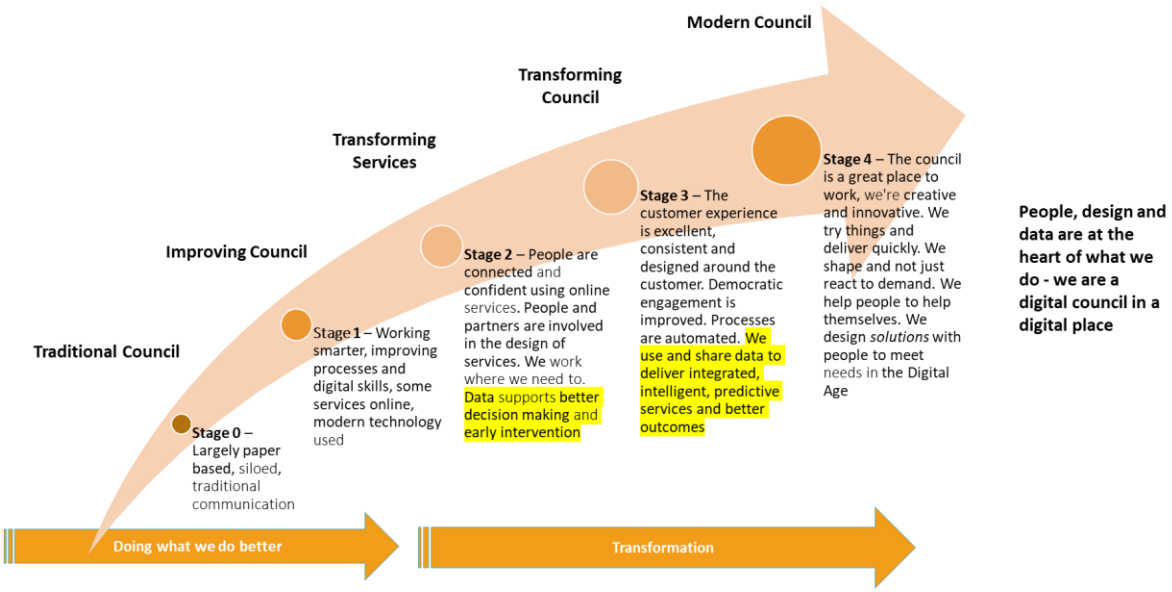
- Data Management
- Data Openness and Governance
- Data Use
- Data Skills

A score was generated based on the respondents' answers, with each score reflecting the level of data maturity. An overall level of data maturity across the council was then calculated. A second survey in the form of a 'data quiz' was then provided to all staff. This provided some broader insight into how individuals felt about using data in their area of

the organisation. Both surveys showed similar outcomes and assessed the Council as positioned between an intermediate and advanced level of maturity, concluding we are a 'Data Aware' organisation. However, the results showed that we are not yet sophisticated with our use and understanding of data.

The approach had a number of limitations, not least that it is possible that generally those who perceive themselves as more confident in their use of data completed the survey, contributing to an overly confident assessment of maturity. We will periodically re-run the assessment as the strategy is rolled-out and anticipate that greater accuracy in self-assessment will be achieved as we mature the data culture of the organisation. We will also seek to engage as broad a span of employees as possible. However, this has provided some useful initial insight and a baseline.

This Data and BI strategy is also concerned with moving the data aspects along the digital maturity curve below towards stages 3 and 4 in the Dorset council Digital Vision. (Dorset Council Digital Vision 2020, Pg 7)



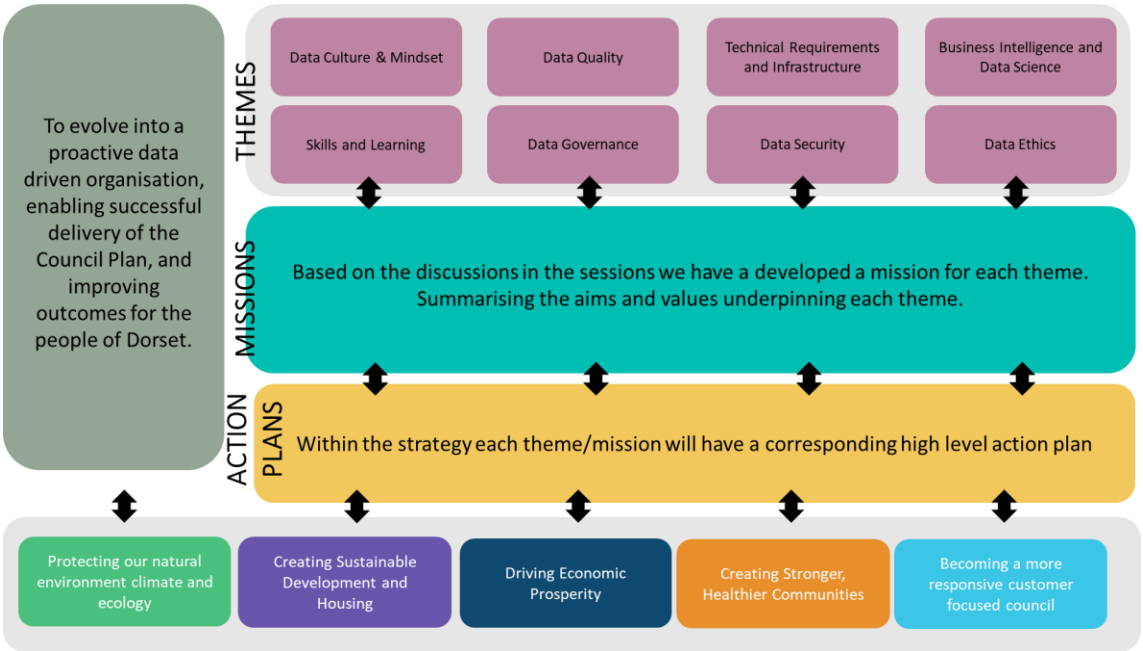
	Stage 0 - Traditional Council	Stage 1 - Improving Council	Stage 2 - Transforming Services	Stage 3 - Transforming Council	Stage 4 - Digital Council
Customer view	Feels old fashioned to deal with, old communication methods at set times, online services difficult and/or fustrating to use.	Becomes easier and faster to deal with the council, can do more online including making payments, and make contact at times and using methods that better suit needs. Still accessing services largely in ways dictated by council.	People have access, the trust and skills, to access their record and use services online which are easy to access and are so good that people prefer to use them. People are involved in the design of services and digital offer.	Easier to engage in local democratic processes. Information already supplied to the council for a different service can be re-used for another. People are proactively alerted to other services that may be of interest. Consistent services are received no matter the channel used and person dealing with.	People are dealing with a modern organisation that facilitates and co-produces solutions. The council works with me and whoever it needs, to design solutions that meet my needs and responds to our local community priorities. I am able to happily live independently and make the most of opportunities.
Employee view	Processes slow & inefficient, lots of paper, silo working, using old technology, not focused on the customer, desk based working.	Modern technology available with good support to enable flexible and mobile working, data is starting to be used to understand customer needs better, processes are being improved and made electronic making people more productive. Digital skills are considered as part of learning and development.	More channels are being used to communicate with customers, reduce demand, and processes are less labour intensive. People are working where best and reducing travel. Data is being used to target resources, intervene earlier and support better decision making.	Processes are paperless, automated, and designed around customer needs. Systems are integrated and updates provided to customers automatically. Data is joined up to provide deep insight on citizens and is integral to service planning and delivery.	The council is a great place to work. Ideas are tried out, learning from failures shared, and continuous improvement of services takes place. We really understand our customers and get great feedback. We have digital leaders across the organisation at all levels and operate in a digital way understanding the benefits of that.
Partners & Community view	Partnership working weak or ineffective.	Engagement beyond formal consultation, tools available to collaborate with the council.	Information is shared to support better care and improved outcomes.	Data is shared and joined up to deliver, integrated, intelligent and predicitive services. Data is open to communities to use and support economic development.	Communities feel empowered and supported. Our partners feel we work alongside them to design solutions. Organisations and agencies work as a whole system to prevent demand and deliver the best outcomes for Dorset.

Our Approach

A series of workshops have been completed with colleagues from across all four council directorates, our partners in the ICS, and via an Elected Member joint Overview Committee workshop. A presentation and engagement session was also completed with trade unions as part of gaining feedback on the draft strategy. These workshops have identified 8 key themes and missions covered by the strategy. These include:

1. Data culture and mindset
2. Skills and learning
3. Data quality
4. Data governance
5. Technical requirements and infrastructure
6. Data security
7. Business intelligence and data science
8. Data ethics

Each theme has an associated mission. The below diagram illustrates how the strategy acts to support the council plan.



The following sections outline the details in each of these 8 missions and the desired outcomes. This is the 'what' we would like to achieve. A high-level action plan sits alongside this strategy and will detail 'how' these will be achieved. This document therefore details the five-year strategic intentions for Dorset council with respect to becoming an intelligent data-driven organisation. The action plan will continue to be developed as the delivery of each of these themes is taken forward. At this stage high-level actions are provided.

Mission 1 – Valuing data as a key asset

Harnessing the value in our data starts with organisational culture – how as an organisation we think about data, the underlying assumptions we hold about the value of data and its importance to us. Our 'data culture' will inform our behaviour and consequently our level of data maturity as an organisation. This strategy sets the basis for challenging our underlying assumptions about data and the value it holds to our organisation. We aspire to become a data-driven organisation with a high level of data maturity. We will see our data as an asset – something to be exploited and constructively used to inform us and direct our activity. This will require us to reposition our thinking around what data is, how we use it, how we maintain it. Creating the desired level of data maturity and culture will be a fundamental aspect of this strategy upon which the other aspects of the strategy rest. Talking about being data-driven will not make us data-driven – the way we use and understand our data will be the basis for this change.

> *'Data as an asset is not only about how organisations of the future manage data, but also about how they can become information-centric organisations with data at the heart of their transformation…Enabling data as an asset requires a shift in both mindset and approach'* (KPMG - Data as an asset (kpmg.us))

Our data is a valuable and key organisational asset. Understanding data, its power and application can enrich and empower everyone to make informed, data-driven decisions across our organisation, from the front line to our strategic leaders. We will celebrate the use of data and recognises its value in the work we do. There is a key link between this mission and the others outlined in this strategy for the reasons outlined above. In particular, the mission exploring required skills and learning will play a significant part in moving the way we work with our data and embedding a new approach.

In this context a distinction can be drawn between considering data as an asset – a cultural appreciation that there is inherent value in our data which we could exploit to make informed decisions – and an information asset. The latter is a defined term in information governance referring to 'any grouping of information, physical or digital, that has value in supporting a service's work' (IG Policy). An information asset represents the information created as part of the insight creation process/the output of the data product/dashboard and hence is subject to records management and lifecycle considerations. Viewing data as an asset is about appreciating our data and valuing its potential for deriving insights/intelligence.

We will achieve this by

- Understanding our data and where it comes from
- Investing in and encouraging further data collection and data sharing from external sources (including suppliers and partners)

- Collecting and sharing further data internally to support our corporate priorities
- Unlocking the stories within our data
- Promoting data as a key and valued asset
- Taking responsibility for our data and protecting it appropriately
- Seeing the value of combining data and information to provide new insights where appropriate
- Improving the organisation's level of data maturity through training and the embedding of behaviours
- Sharing case studies and good news stories
- Ensuring that data is front and centre of design practices, using our data as the basis for change
- Recognising existing and new talent and encouraging skills sharing
- Connecting with others within our sector and outside to share best practice and improving data quality
- embedding data and insight into our digital work redesigning services and enabling continual improvement

What is the impact

- We will see a shift in the way we understand our data
- Data will be seen as the concern of everyone and relevant to everyone
- We will understand the potential of our data
- Decisions are informed and driven by data
- We will have a culture which embraces continual learning opportunities

Mission 2 – Improve data quality

We know that having data of a suitable quality is key to improving our data use as an organisation. Good data quality means that our data is fit for purpose. It should be accurate, complete, consistent, valid, unique and timely.

> *'Data science is the easy part. Getting the right data, and getting the data ready for analysis, is much more difficult'* Analytics-comes-of-age.ashx (mckinsey.com)

If our data is not of a suitable quality, then the resulting decisions and actions will not be as optimal as they could be.

> *'…management decisions informed by the use of these data analytic methods are only as good as the data on which they are based.'* (Boone, Ezell, Jones-Farmer, 2014)

It is important that we rigorously encourage a suitable level of data quality in our systems. This includes ensuring our systems are fit for purpose and user-friendly for those

responsible for inputting data at the front line of our services. It is at this initial point of inputting where we can make the biggest difference to the quality and completeness of the data we hold, and which will subsequently be used to inform decisions and ultimately improve outcomes for those we serve. We therefore need to support those inputting data to understand the requirements and to provide clearly designed processes for the collection of key data. Consideration also needs to be given to the systems we procure, and how we configure these systems to enable best quality data inputs.

Unique Identifiers

Our data will need to include accurate unique identifiers if we want to be able to join data sets/match information. Matching data between two data sets can be challenging. For example, a person in system A could be called 'Joe Bloggs' whilst in system B, they have been noted as 'Joseph Bloggs'. Both entries could have the same residential address and date of birth. To determine that they are the same person, we need to perform a 'matching' routine which results in a percentage of likely match. If both systems contained, for example, an accurate NHS number, this matching would not need to take place. This is also true of unique property reference numbers (UPRN) for address matching. In terms of data quality, both systems will need to hold the correct unique identifiers.

We will achieve this by

- Ensuring clear roles and responsibilities for the inputting of data, including providing relevant skills to input into systems effectively and accurately
- Instilling an understanding of the importance of data quality
- Ensuring accuracy and completeness of data keys (e.g. NHS numbers, UPRNs) and embedding unique identifiers in our data sets to allow for data matching
- Working to defined data standards
- Ensuring appropriate system configurations
- Considering data, its subsequent use, and system interoperability as a core aspect of all future system procurement
- Taking pride in, and ownership of, our valuable data assets
- Taking a 'right first time' approach when inputting data into systems
- Ensuring effective process design for data input
- Establishing a system of unique identifiers across all council data
- Following principles of using master data-sets rather than taking multiple copies of source data
- Working with our partners to ensure appropriate levels of data quality as part of sharing agreements
- Establishing regular checking processes to maintain appropriate levels of data quality across the organisation

What is the impact

- Improvements in speed and accuracy in statutory reporting
- Enhanced ability to combine datasets for deeper insights
- Improved accuracy and quality of decision-making
- Increased confidence in our data and clarity around level of accuracy
- A culture of 'right first time', reducing the need for retrospective data correction in systems

Case Study: Mosaic and Synergy NHS Numbers

As a test pilot for improving data quality, we have started our journey by focusing on unique identifiers in our Adults and Childrens Case Management Systems, Mosaic and Synergy. The unique identifiers which have been chosen are:

- NHS Numbers
- Unique Property Reference Numbers (UPRNS)

Unique identifiers are usually a number, a code or piece of information which is guaranteed to be unique among other identifiers. We can use unique identifiers to tie our data together to understand the story behind it, improve its quality as well as removing any duplicate record. Our pilot involved identifying records with missing NHS numbers. The NHS number is an important unique identifier and allows data to be matched across social care and NHS systems. As part of an ICS, it is important that we can join this data together and match records. Many records had missing or incorrect data which meant we were unable to match against an NHS number. As part of the pilot, we have been able to build dashboards for the teams who input the data and are the data owners to show where we have gaps or errors. We have also put in place a daily data upload to the 'NHS Spine' – this enables us to match records with numbers and populate NHS numbers where these are missing. The pilot has shown very encouraging results and 94% of open cases now include a valid NHS number.

Mission 3 – Ensure we have the right technology and infrastructure

The workshops identified several considerations for optimising our use of data and BI in relation to technical infrastructure and sound data management at Dorset Council. In setting the scene, the question of appropriate technology may also be contingent on the council's appetite to make greater use of 'low-code and no-code'. This approach refers to the development of platforms which require very limited coding knowledge and skills. This is a growing area, and it is anticipated that in the future much development will be undertaken using this approach, with reduced turnaround times and enhanced automation

opportunities. This will require consideration of the 'guardrails' placed around this activity to ensure it conforms to internal rules and best practice.

Having an appropriate technological infrastructure is key to deriving the maximum benefit from the data we hold.

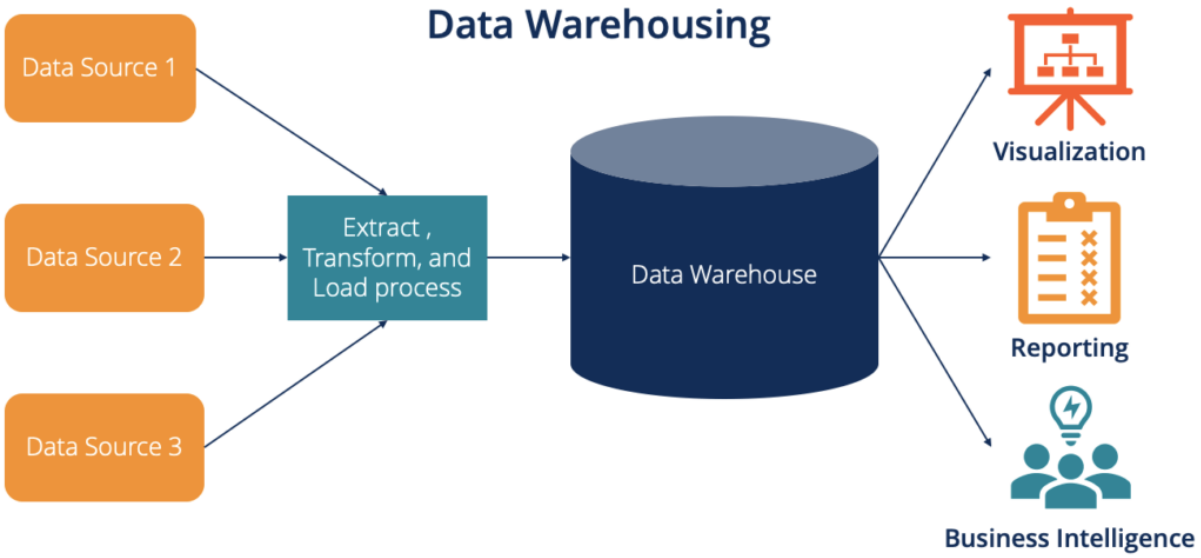
> *'…local authorities can take a look at their own data infrastructure as part of their modernisation process, and understand ways to develop interoperability between different platforms, systems and data sources inside of the organisation. This will allow them to work more efficiently and derive more value with the data they already have at their fingertips.' (Glen Ocskó, Head of Local Government, Made Tech)*

As a council we use the Microsoft platform which gives us access to an enormous range of valuable tools which can support us to become data driven. Using the Microsoft tool stack to choose the right blend of platform tools will help us to leverage not only the Microsoft Data warehouse platform, but the power integrations between Microsoft 365 technologies. The underlying technology should support the aspirations of the business. We also have Placecube, our customer platform, and links to and from this need to be coordinated. Engagement with Placecube is essential to ensure that our strategies are aligned and complementary.

Data warehouse and data lakes

We need to establish an approach which provides us a single version of the truth and reduces data duplication. This means having the ability to bring all our relevant data together into one place, and then to combine and join this data together. To do this we need to make use of appropriate data warehousing, providing a single repository for the data we will use for BI and data science purposes.

Data warehouses work via a process of 'extract, transform, and load'. Data is extracted from a variety of sources (e.g. line of business applications, SharePoint, spreadsheets, databases) and fed into a staging area in its raw format. The data then goes through several transformation processes before being loaded into the data warehouse. These processes are significant in the lifecycle of data as they will include cleansing (data quality, master data management, de-duplication) as well as advanced processes such as filtering, joining, splitting, summarizing. This ensures that high quality data resides in the data warehouse which can be easily reported, mined, or visualised in reports and dashboards.



Data Warehouse John Kutay, Striim.com

In addition to the data warehousing, we will also explore the use of a data lake as a repository to store both structured and unstructured data. Adding a data lake to our capability would allow us to store a vast amount of raw data in its native format until it is needed. This would enable the council to ingest data at a larger scale and much faster. Taking advantage of this technology will require strong governance.

There will be various options for data warehousing. The council already has a data warehouse which resides on-premises. However, as our usage increases and data requirements grow, this will not be fit for purpose to serve the longer-term data aspirations of the council. Consideration will need to be given to transforming our platform and moving towards a cloud hosted environment, including an appropriate timeframe for this, costs, and any implications for legacy arrangements.

Visualising our data – PowerBI

Dorset Council has seen a significant increase in the use of interactive reports and dashboards with an associated central roll-out of the Microsoft PowerBI platform and creation of an interactive reporting suite by the BI & Performance Service. This has been an important step forward in enabling and encouraging greater levels of self-service, where users have access to drillable reports, allowing them to move through various 'levels' of data and visualisations.

As a council we have invested in PowerBI 'premium' capacity, creating dedicated workspaces and capacity for our core BI team. This was driven by the demand from within the council for increased access and functionality from its reporting. PowerBI can easily incorporate data security without additional licensing and cost and the outputs are

available to end-users via a BI reports server which is available as part of our Enterprise Microsoft licensing agreement. The server uses the user's credentials to potentially determine whether they can view the output and which specific data is available.

Additional considerations relate to our ability to specially map information. At Dorset council we have a technical team of Geospatial specialists. PowerBI has built-in links to ESRI products (GIS mapping software), but the GIS direction is currently to move to open-source software QGIS. The decision was made based on the cost of ESRI products, but with increased adoption of Power BI, mapping options for power BI will need to be explored.

New technologies like artificial intelligence (AI) and machine learning are also bringing the opportunity to potentially derive further efficiencies in our business. Effective data management is vital to underpin these technologies, harnessing BI, predictive analytics, or adopting intelligent automation and the Internet of Things (IoT).

Procurement of new systems

Data and reporting requirements need active and complete consideration as part of system procurement processes. Currently, our line of business applications (LOB) do not always offer sufficient reporting capabilities. This then leads to spreadsheets and other databases sitting outside of the LOB applications to compensate which can create additional data loss risk or data securely implications. Procurement needs to focus on ensuring any new systems have appropriate operational and statutory reporting capabilities, where data warehousing should be utilised for joining datasets togethers to enhance insights, not for BAU operational reporting.

Procurement processes also need to consider how data can be extracted from source systems. Third party companies can charge for an API (application programme interface) or offer only manual downloads of data. This can make the cost of accessing our own data prohibitive, and consequently it becomes difficult to join data sources to derive deeper insights. New systems should, where appropriate, also to link to the local land and property gazetteer (LLPG) for addresses. When the address gazetteer is used, a unique property reference number is attached to the record which makes it much easier when joining together data sets in the data warehouse (see unique identifiers).

We will achieve this by

- Bringing relevant data together from across our currently disparate systems into a secure cloud hosted data warehouse and data lake solution
- Providing clarity on where and how data should be stored, to ensure a consistent approach across the organisation

- Working closely with business areas when developing or procuring technical solutions to ensure that business and wider organisational needs are met
- Conducting an options appraisal to decide the best storage solutions for our data including our data warehouse to ensure it is fit for the future, including an assessment of our data sharing abilities with relevant partners
- Considering the level of enterprise functionality needed to meet the aspirations of the data and BI strategy

What is the impact

- We will be able to provide timely and regular data feeds as appropriate to the business need. This may include real-time data where feasible, appropriate, and desirable for business need
- We will have a technical infrastructure which supports our data management processes
- We will have confidence in our systems, and the use of them, across the organisation
- We will make the maximum use of our investment in Microsoft Products
- We will develop and procure systems which can integrate with our existing systems
- We will free up capacity from cleaning data, effort which can be redirected towards developing insights and understanding from our data

Mission 4 – Develop and invest in business intelligence and data science

The council will make use of appropriate BI and data science capabilities to maximise data driven decision-making and provide clear tools to enable enhanced decisions. The Council has access to significant amount of data (often referred to as 'big data'). This data can be used to inform service provision and assist with directing council activity towards best serving the needs of residents both now and into the future. To tap into the value within our data assets, the Council needs to invest in new skills and activities in the areas of BI and Data Science. These combined areas allow for the modelling and subsequent visualisation of the story within and behind the numbers.

> *'The exploitation of Big Data can unlock significant value in areas such as decision making, customer experience, market demand predictions, product and market development and operational efficiency.' (Bormida, M.D. 2021)*

Investment will include the use of advanced data techniques covering data analytics, data science, insight, and Artificial Intelligence (AI). As NESTA outline:

'Invest in the data science capacity needed to perform analysis and integrate large data sets – data work increasingly requires data scientists … who are currently rare in the local government workforce. Successful projects require investment in these skill-sets, either from inside or outside the organisation.' (NESTA, Tom Symons, Councils and the data revolution: 7 ways local authorities can get more value from their data | Nesta)

In accordance with appropriate governance covering the use of PowerBI and the broader power suite of applications, self-service analytics will also be used where applicable to enhance localised decision making.

We will achieve this by

- Providing deeper insight to decision makers by combining datasets
- Using data science to provide predictive analytics and modelling capabilities
- Working with partners in the Dorset Intelligence and Insight Service (DiiS) to enable system wide data analytics capabilities
- Further developing our use of interactive reports and dashboards
- Exploring how artificial intelligence can enhance decision making and our use of big data
- Developing interactive and innovative ways of displaying data and information
- Supporting the delivery of the Council Plan by using data and insight in decision making
- Following design practices alongside data science and BI skills to realise better data-driven decisions
- Evolving clear governance around the use of data
- Focusing efforts towards deriving insight from our data, with less emphasis on compensating for poor operational reporting within source systems

What is the impact

- Enhanced decision making and efficiencies by improving use of data led techniques
- Understanding the impact of decisions by using predictive analytics
- Better informed policy decisions
- Our data visualisation will be accessible, user friendly and appropriate
- Better partnership working across the Dorset system
- Improved oversight of data in systems
- Moving from talking about backwards looking performance to how we use forward looking insight
- Enhanced intelligence and insight for understand our customers' needs and requirements

Mission 5 – Develop our people's data skills

Our organisation must be data mindful. Data is a much bigger part of our lives than we would initially think. There is a clear overlap between this mission and the majority of the other missions – in particular culture – where appropriate skills, knowledge and behaviours will underpin our ability to deliver successfully against this strategy and cultivate the required mindset and behaviour. This is also acknowledged more broadly across central Government and the wider public sector:

> *'Despite the many benefits that can be derived from data, institutionalised data culture – where data is seen as everyone's job and where data is seen to support outcomes at all levels – is lacking in many organisations across government and the wider public sector... In the future, the use of data in our work must become the norm, rather than the exclusive domain of specialists. The lack of a mature data culture across government and the wider public sector stems from … a lack of depth in data skills at all levels.' (UK National Data Strategy, 2020)*

Every employee or partner who works with us will be collecting, working with, or analysing data each day of their working lives. In line with the National Data Strategy, Dorset Council aspires towards a position where:

> *'everyone, regardless of seniority or profession, should see data as a priority in their role – with data supporting each step of policy and delivery, from scoping to ongoing performance tracking, evaluation and improvement.' (UK National Data Strategy, 2020)*

The skills and learning needed to promote a behavioural change in our use of data will include looking at our mandatory training to understand the basic level of data literacy needed. Learning and development spans the related areas outlined in this strategy, including areas such as records management, governance, data ethics, data security and GDPR. The level of data skills required will depend on the nature of the role, for example the new leadership and development academy will also include sessions on data along with related areas such as the responsibilities of information asset owners at Dorset council.

Aside from the broader data skills needed by the organisation to move us along the data maturity curve, there are some areas of the council which require higher-level, specialist data skills. These employees are generally located in the central BI & Performance Service, Public Health, and ICT. We will develop our people and providing clear data, analytics and data science career paths matched to these evolving skills. Dorset Council has recently become a founder member of the Dorset Data & Analytics Centre of Excellence, a new pan-ICS initiative to share best practice in analytics, BI and data science. This includes development of tailored training aimed at specialist data careers. The types of skills include PowerBI, data visualisation, dashboard development, SQL,

Python, R, Dax etc. We will also continue to explore data analytics and data science apprenticeship programmes and other options to up-skill.

As part of our commitment to grow and support our staff we will invest appropriate time and funding into providing knowledge and skills to exploit our data to its full potential.

We will achieve this by

- Undertaking a skills audit to understand the learning and development we need now and, in the future
- Providing ongoing learning and development for data topics
- Designing a data skill learning pathway
- Promoting data related apprenticeships
- Providing leadership level skills and learning in the areas data and analytics, both for those leading teams in these emerging areas of expertise and more broadly for leaders using new data products/tools for decision-making
- Evolving our data science capabilities to enable better predictive analytics
- Understanding and appreciating the value of data and BI
- Empowering staff to grow their skills
- Utilising the Data and Analytics Centre of Excellence (Part of the ICS central data offer)
- Evolving our current digital champions to include support for data skills and behaviour change to support a positive data culture
- Growing a culture of knowledge sharing
- Attracting data talent into the organisation

What is the impact

- Increased confidence and competence in the use of data
- Understand that data can tell a story
- Increased adoption of data analytics tools
- Strong appetite to use relevant data for decision making
- Established development pathway
- Application of skills to develop data practices
- Sharing best practice routinely between staff
- A positive ‘modern leadership’ mindset which influences the culture
- There will be a clear and consistent understanding of data roles and responsibilities

Mission 6 – Use clear frameworks to manage, utilise and care for data

We value and respect the data we hold and recognise the inherent danger of insufficiently robust data governance.

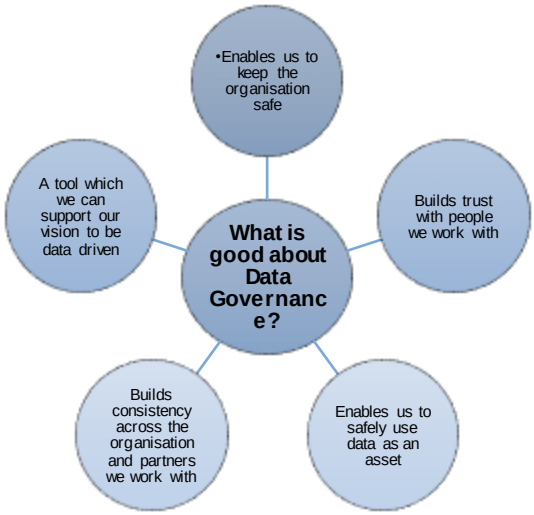
> *'Data governance of tomorrow is not only about maximizing the value of data for operational effectiveness, decision making, and regulatory requirements, but also about minimizing the risks associated with poor data management'* (us-big-data-governance.pdf (deloitte.com))

A key consideration is providing clarity over where and how data should be stored and for how long. There is currently a mixed model with data being stored in a variety of locations and where legacy storage adds complexity. A linked concern relates to trust in core systems and existing solutions where the workshops identified some areas of lower trust. This has resulted in key data being stored and manipulated using local solutions and spreadsheets, outside of core systems. This also relates to the cultural and data quality missions.

It is important to know what data we hold across the council. A data catalogue is a well-organised inventory of information about a specific data set (i.e., where data is held, who owns it, how often it is updated etc.). It can also store metadata allowing easy access to find datasets that can be used for analytics. Data catalogue discovery work is currently underway and is starting with the Place directorate.

As an organisation we acknowledge our responsibilities to manage the data we hold appropriately and the benefits of good data governance. This extends to when we commission third parties to provide any data or BI products, where these will need to fit within our agreed approach, forming part of our agreed internal platforms/infrastructure where any data links to the council's managed source and not via any replicated data/copies. Any approach to publishing reports/dashboards will also need to conform to the council's agreed licencing models etc.

The councils' Information Governance (IG) Policy outlines the IG framework for the council. IG consists of policies, procedures, roles and controls put in place to govern and control all information created, received, managed, shared and disposed of by the council. The BI and insight we create is covered by this governance alongside the management and storing of information and its lifecycle.



The council has recently established a new Strategic IG Board, chaired by the Senior Information Risk Owner (SIRO). This board is instrumental in defining processes by having DPIA (Data Protection Impact Assessments), consent, data sharing and general data governance discussions. This board is supported by four operational working groups and comprises of the SIRO, the Caldicott Guardian, decision-makers from Directorates across the organisation, a selection of subject matter experts (data protection; cyber security; archives and records; BI; legal; HR; digital) and the Chairs of the operational working groups. The four operational working groups include

1. Operational Group (focussed on policy, practices, risk and performance)
2. Technical Cyber Security
3. Digital Applications Governance
4. Organisational

The Board has authority to approve information governance policies, practices and standards developed by the operational groups. Similarly, to accept risk or enable appropriate controls to bring the risk down to an acceptable level. Escalation to SLT is at the SIRO's discretion. Directorate representatives ensure key messages are shared with Directorate Management Teams.

We will make sure that people have appropriate access to the data needed to undertake their role and will have clear frameworks in place to manage, utilise and care for our data. Following appropriate data governance is everyone's responsibility.

> *'Everyone in your enterprise has a responsibility in data governance processes. Data governance includes securing your data, organizing it, defining the access permissions, and determining the way your organization uses data. Data governance is vital for business intelligence and data analytics' (Benefits & Challenges of Data Governance \| Tableau)*

We will also look to be as open as possible with our data, adopting a transparent approach and enabling our communities to make use of our data. This reflects central Government's adoption of a policy of 'open by default' for public sector data (UK National Data Strategy, 2020).

> *'Open data is defined by the Open Data Institute as data which "anyone can access, use and share"… Transparency has traditionally been the main driver for the release of open data. Enabling people to see financial, performance and other data in local authorities creates a more open form of government that invites important public scrutiny and helps people to feel more engaged with their local government'. (local.gov.uk)*

As we roll out new, and powerful, data products and tools the council will need to wrap appropriate governance around their use. Progress has already begun in this respect, and the council's 'digital super champions' have been trained in the use of PowerBI and given a governance document detailing how it can be used and for what purposes. It is anticipated that this will be rolled out further with the super digital champions providing support for those in the business. It is hoped that these users will act as 'data stewards', individuals nominated as data experts in the business who will hold licences enabling them to publish reports designed and developed within their business areas. Before these licenses are granted, training will need to be provided on toolset and governance.

The council is in the process of setting up an Office365 centre of excellence. This will also play a role in ensuring appropriate governance of the new Power Platform tools set as this is taken forwards. Microsoft define the centre of excellence as follows:

> *'A Center of Excellence (CoE) in an organization drives innovation and improvement and brings together like-minded people with similar business goals to share knowledge and success, while at the same time providing standards, consistency, and governance to the organization.' (Microsoft.com)*

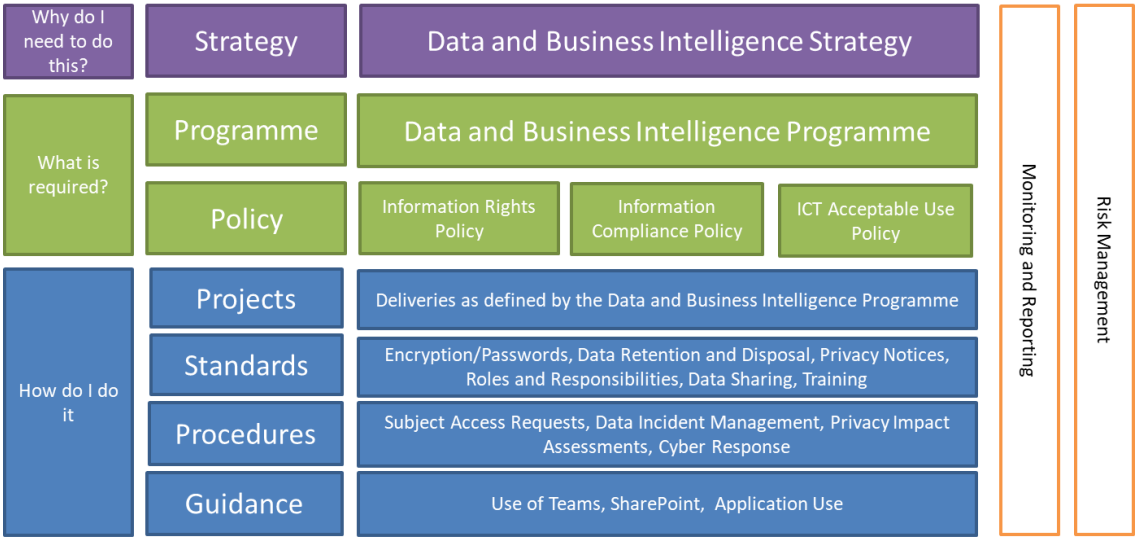
We will achieve this by

- Having logical and clear information governance structures
- Establishing the new Strategic Information Governance Board
- Developing a data catalogue for the organisation, documenting all our key data and in which systems this is located
- Clear records management, including an organisational information asset register, clear ownership of information assets and associated responsibilities and data retention schedules
- Democratising and providing open data wherever possible
- Having clear policies which support our staff to follow appropriate data governance in their use of applications

- Following relevant data standards as appropriate (e.g. addresses and the use of UPRNs)
- Having clear and logical data access management
- Following design practices which enable our data visualisations to be accessible and easily understood
- Creating clear governance and agreements with partners
- Building out the Microsoft Power Platform/365 centre of excellence

What is the impact

- Data is respected and used appropriately
- Provide open access to our data wherever practicable and appropriate
- Transparent and robust processes manage how we utilise data
- Data Asset Owners are accountable and responsible for their data assets
- Enhanced risk management of data loss by clearly defined access management
- The production of BI is consistent and follows best practice
- Be able to work with partners safely



Mission 7 – Protect the organisation's data assets

We will ensure data security is fit for purpose and protects the organisation's data assets.

> *'Data security is the practice of protecting digital information from unauthorised access, corruption, or theft throughout its entire lifecycle. It's a concept that encompasses every aspect of information security from the physical security of hardware and storage devices to administrative and access controls, as well as the*

logical security of software applications. It also includes organizational policies and procedures.' (What is Data Security? Data Security Definition and Overview | IBM)

Data security is not just about the systems we use and the physical or software protection we put in place, it is also about how we behave around data. As outlined in the skills and culture sections of this strategy, behaviours also form an important part of keeping our data safe. This includes things such as completion of mandatory cyber security training and data protection training.

'Organizations need to promote a data protection and privacy mindset among employees and integrate advanced technologies to boost data discovery, data management, data quality, cybersecurity, and information security efficiencies.' (Report_GDPR_Championing_DataProtection_and_Privacy.pdf (capgemini.com))

The council currently holds E3 Microsoft licensing. This includes core data security and compliance capabilities for the organisation. As we begin to make better, more advanced, use of our data the council will need to review whether it is appropriate to move to an E5 licence which includes more advanced security and analytical capabilities.

We will achieve this by

- Having a robust approach to information governance risk management
- Understanding the organisation's perception of security (training)
- Embedding robust mandatory training for information governance and security with associated compliance monitoring
- Articulating what good data security looks like as an organisation
- Specifying data security requirements within procurement
- Appropriate periodic review of data security policies and available functionality
- One unified consistent approach to data security practices across the organisation
- Access to data is provided based on job role and regularly audited
- Having an IT infrastructure which allows for auditing of data transfer activity both internal and external
- Embedding safe data sharing mechanisms
- Hosting arrangements for data systems and our data warehouse that are resilient to cyber attacks
- Building out the Microsoft Power Platform/365 centre of excellence

What is the impact

- Individuals understand their data security responsibilities, and this is evidenced through completion of relevant mandatory training
- A safe and trusted data security environment

- All current and future systems fulfil or exceed our minimum data security requirements
- We receive the best value for money for investment by utilising existing security policies
- People in the organisation can access the data they need
- Data is shared safely with our partners
- Making data open when we can and sharing with our partners where governance allows

Mission 8 - We will use data ethically

Data ethics is concerned with the moral use of data, and our organisational understanding of what is and is not acceptable. As we make increased use of our data and apply increasingly complex techniques to its analysis, we need to ensure that are using our data appropriately. This is important to preserve the trust of our residents, partners, colleagues and all our stakeholders. Data ethics is for everyone to consider, not just those working in the central data science team or in a compliance role. We all deal with data in some form and therefore all have a responsibility to use data ethically.

With ever increasing amounts of data comes great responsibility – we should only collect data we need and must be transparent about what we are doing with it. We should also understand the sources of our data and that appropriate agreements are in place to use the data and for what purposes. As we increase our use of data, increasingly join-up our data across the ICS and look for new and better ways to deliver services, we must always be mindful of the sensitivity of the data we use and the ends to which it is directed.

> *'We live in the era of Big Data, where governments, organisations and marketers know, or can deduce, an increasing number of data items about aspects of our lives that in previous eras we could assume were reasonably private… Digital technologies have made possible the 'datafication' of society, affecting all sectors and everyone's daily life.' (Bormida, M.D. (2021),The Big Data World: Benefits, Threats and Ethical Challenges)*

As we explore the use of advanced data techniques, including AI and Machine Learning, governance will be key to ensuring that this done in a controlled, safe, and ethical way, where any automated processes and decision-making underpinned by AI have suitable oversight. It is important to build safeguards into automated systems.

> *'One of the key challenges is that machine learning can entrench existing prejudices or biases*
> *into computer code… In addition, the code that underpins the analysis is often not open or transparent, making it hard to scrutinise the assumptions that lie within it… It will be essential to develop transparent ethical frameworks to oversee the use of*

machine learning and algorithms in public services. Alongside this, the algorithms and machine learning must have the transparency required for proper scrutiny.' (*research-paper-datavores--d1a.pdf (local.gov.uk)*)

We will achieve this by

- Developing and embedding clear and consistent data ethics principals across the organisation
- Developing and embedding a consistent approach to data collection and usage that align with our data ethics principles
- Embedding a data ethics framework across the organisation
- Reviewing our approach to collecting both qualitative and quantitative data to ensure we are inclusive and aware of bias
- Be open and transparent as to why data is being collected and what it will be used for
- Enabling and ensuring insightful, accurate and good faith interpretation of data

What is the impact

- Any data use or collection within the organisation will be in accordance with our data ethics principles
- Employees will have an improved knowledge of data ethics and how it relates to their job role
- There will be a standard data ethics framework across the organisation
- Advanced data techniques including data science and AI will be governed by appropriate data ethics considerations

What comes next

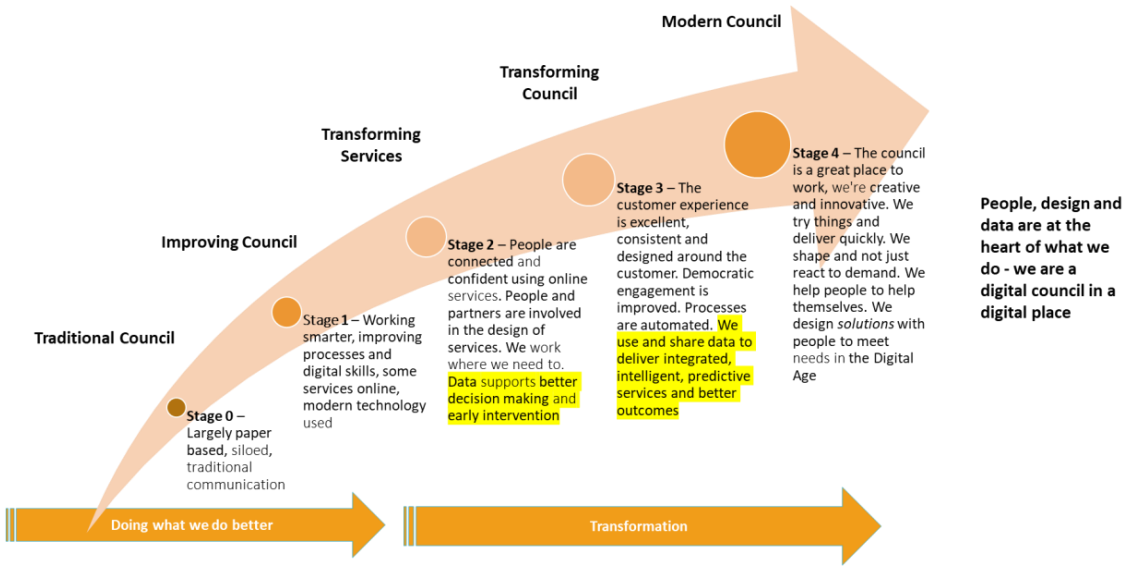
The next steps for taking the strategy forwards will involve building out the action plans across the eight missions. The strategy has identified the 'what' we would like to achieve in relation to becoming a data-driven, intelligent council and in doing so has provided direction and rationale for the areas examined under each mission. The action plan will provide more granular detail on the 'how' we will meet these aspirations. An initial high-level action plan has been established to sit alongside this strategy, but further work is now required to build these out into a delivery plan.

How we know we have been successful

The success of this strategy over the next five years will be reflected in a shift in our level of data maturity and a move along the digital maturity curve. We will see improvements in our scores across the four areas identified in the NESAT maturity model:

- Data Management
- Data Openness and Governance
- Data Use
- Data Skills

We will have delivered the foundations to move Dorset Council through stages 2 and 3 of the curve and provided the cultural, technical, knowledge and governance requirements towards becoming a data-driven, intelligent council.



Glossary of Terms

Analytics - Refers to the analysis of typically large data sets to interpret and communicate meaningful patterns and information.

'…the analysis of data, typically large sets of business data, by the use of mathematics, statistics, and computer software' (Dictionary.com)

'Analytics is a field of computer science that uses math, statistics, and machine learning to find meaningful patterns in data. Analytics – or data analytics – involves sifting through massive data sets to discover, interpret, and share new insights and knowledge. (SAP.com)

Data - This is a wide-ranging term which can encompass a variety of unprocessed facts or information. These could range from numbers inputted into a computer system, visual or audio data, paper-based or digital. Data is all around us but requires context and processing to become meaningful/useful.

'In the most general sense, data refers to a collection of individual values that, when processed, convey information'. Data Definition (techterms.com)

'Data is just facts and figures. This can be a set of value of a qualitative or quantitative variable, in other words – data that can either be measured in numbers or not. Data is measured, collected, reported, and analysed.' What is the Difference Between Data, Information, and Records? | DeltaNet (delta-net.com)

Data Catalogue - A catalogue which maps out the data held by the council, where this is located, the owner, how the data is used and the purposes for which it can be shared.

'…used to catalogue and communicate the structure and content of data, and provides meaningful descriptions for individually named data objects.' (USGS - Data Dictionaries | U.S. Geological Survey (usgs.gov))

Data Culture - 'the collective behaviours and beliefs of people who value, practice and encourage the use of data to improve decision-making. As a result, data is woven into the operations, mindset and identity of an organisation. A data culture equips everyone in your organisation with the insights they need to be truly data-driven, tackling your most complex business challenges.' Data culture | Using technology & culture to drive business decisions | Tableau

Information - Data in context with a particular meaning.

'Information is something that provides the answer to a question of some kind or resolves uncertainty. It is linked closely to data and knowledge, which is why the terms can often be confused.' What is the Difference Between Data, Information, and Records? | DeltaNet (delta-net.com)

'Data that has been processed, e.g. grouped, normally by a computer, to give it meaning and make it interpretable…Information is data that has meaning… data in a meaningful form becomes information. Information can be about facts, things, concepts, or anything relevant to the topic concerned. It may provide answers to questions like who, which, when, why, what, and how.'285017-data-information-and-knowledge.pdf (cambridgeinternational.org)

Information Culture - Information culture relates specifically to information management.

'A subset of organizational culture concerned with norms, values, and patterns of behaviour that influence how information is used in an organization. Group information processing, information orientation, and information politics are all manifestations of information culture.' What is Information Culture | IGI Global (igi-global.com)

Information Management - Information management is the collection, storage, curation, dissemination, archiving and destruction of documents, images, drawings and others sources of information. What is information management? | APM

Record - information created, received and maintained as evidence in the course of council business

'A record is anything that supports the business such as business decisions, policy documents and approval documents. This includes emails, paper documents or electronic files that provide evidence of business activity. Data and information can then be held as a record both physically in a book, or electronically in a computer file. Most of the information you use in day-to-day working life will be classed as a record as a result.' What is the Difference Between Data, Information, and Records? | DeltaNet (delta-net.com)

Records Management - 'the systematic control of an organisation's records, throughout their life cycle, in order to meet operational business needs, statutory and fiscal requirements, and community expectations. Effective management of corporate information allows fast, accurate and reliable access to records, ensuring the timely destruction of redundant information and the identification and protection of vital and

historically important records.' Records Management | National Records of Scotland (nrscotland.gov.uk)

Structured data - raw facts or figures that are usually stored in relational databases and organised in defined columns and rows.

Unstructured data - content held in documents, email, images, videos, and web pages that and are not organised in a pre-defined way.

UPRN (Unique Property Reference Number) - The Unique Property Reference Number (UPRN) is the unique identifier for every addressable location across the UK. Unique Property Reference Number | Power of UPRN | GeoPlace LLP

References

- Analytics-comes-of-age.ashx (mckinsey.com)
- Better use of data | Local Government Association
- Boone, Ezell, Jones-Farmer, 2014, Data quality for data science, predictive analytics, and big data in supply chain management: An introduction to the problem and suggestions for research and applications, International Journal of Production Economics, Volume 154, August 2014, Pages 72-80
- Business Intelligence vs. Data Science, Sebastian Taylor, Jan 2023, Business Intelligence vs. Data Science (corporatefinanceinstitute.com)
- Cambridge Dictionary - DATA | English meaning - Cambridge Dictionary
- *Cambridgeinternational.org* 285017-data-information-and-knowledge.pdf (cambridgeinternational.org)
- Championing Data Protection and Privacy a source of competitive advantage in the digital century, Report_GDPR_Championing_DataProtection_and_Privacy.pdf (capgemini.com)
- Data as an asset (kpmg.us)
- *Data Definition (techterms.com)*
- Data governance for next-generation platforms, Deloitte, us-big-data-governance.pdf (deloitte.com)
- Datavores of Local Government Using data to make services more personalised, effective and efficient, Tom Symons, July 2017, research-paper-datavores--d1a.pdf (local.gov.uk)
- *delta-net.com* What is the Difference Between Data, Information, and Records? | DeltaNet (delta-net.com)
- Dorset Council Digital Vision 2020
- Gartner, March 2012

- *Glen Ocskó, Head of Local Government, Made Tech, Public Sector Digital Transformation Forum – PSDTF - Overcoming digital, data and technology challenges in local government: 3 actions you can take « Public Sector Digital Transformation Forum*

- Glen Ocskó, Head of Local Government, Made Tech, Public Sector Digital Transformation Forum – PSDTF - Overcoming digital, data and technology challenges in local government: 3 actions you can take « Public Sector Digital Transformation Forum

- John Kutay, Data Warehouse vs. Data Lake vs. Data Lakehouse: An Overview of Three Cloud Data Storage Patterns | Striim

- Marina Da Bormida, 2021, The Big Data World: Benefits, Threats and Ethical Challenges | Emerald Insight

- Microsoft Power Platform Center of Excellence Kit - Power Platform | Microsoft Learn

- National Data Strategy - GOV.UK (www.gov.uk)

- Political Science and Big Data: Structured Data, Unstructured Data, and How to Use Them. POLITICAL SCIENCE QUARTERLY | Volume 135 Number 2 2020. Political Science and Big Data: Structured Data, Unstructured Data, and How to Use Them (luigicurini.com)

- Rahbek, A.S, 2022 - Workplace Insights – How To Benefit From Workplace Analytics (askcody.com)

- Symons, T., 2016, Councils and the data revolution: 7 ways local authorities can get more value from their data, Councils and the data revolution: 7 ways local authorities can get more value from their data | Nesta

- The Benefits And Challenges of Data Governance, Benefits & Challenges of Data Governance | Tableau

- What is Data Security? Data Security Definition and Overview | IBM