Report to the Community, Cultural, and Corporate Services Scrutiny Committee
Meeting to be held on Wednesday, 12 February 2025

Report of the Director of Digital

How digital capabilities are enabling better decision making across the Council

Part I	**Corporate Priorities**: Thinking differently;
Electoral Division(s): (All Divisions);	
Contact: Peter Lloyd, Director of Digital, Tel: 01772 538993, Peter.Lloyd@lancashire.gov.uk; Vishal Mistry, Principal Data Manager, Tel: 01772 532672, Vishal.mistry@lancashire.gov.uk	

Summary

Purpose of the Report

This report provides an update on the council's position regarding the use of technology to enable better use of data and analytics across the Council, further to a report received by the Community, Cultural and Corporate Services Scrutiny Committee on 9th November 2023.

Recommendation

The Community, Cultural and Corporate Services Scrutiny Committee is asked to:

i. Note and Comment on the report which will be presented at the scrutiny meeting.

1. Background

1.1. The importance of data-enabled decision-making in local government cannot be overstated which is a focus of the current Data Strategy approved by Cabinet in October 2022.

1.2. Following this a report to the Community, Cultural, and Corporate Services Scrutiny Committee in November 2022 highlighted key aspects of both the Data Strategy and the 2019 Digital First Strategy, focusing on four key capabilities to become more data-driven:

- Implementing a data governance framework
- Defining and building a council-wide data architecture
- Implementing a data management capability
- Implementing a set of business intelligence and analytics tools

1.3. The focus on these core capabilities were inteded to:

- Grow the use and maturity of Data tools across the Council services
- Ensure good data foundations were in place such as governance, management and access to useable data.
- Introduce tools and training to allow more services and key officers to unlock the power of their data
- Put in place strategic data architecture to support a more evidence-based decision making approach.

1.4. The focus of this report is on technology offerings and training to build capability. The importance of governance cannot be overstated. Understanding who owns data and how data is handled is critical, not only for improving data quality but also for reducing related risks in decision-making and those related to data loss, reputational, and financial damage.

2. Progress to date:

Digital Functions

2.1. Over the last few years, the council has developed a strong data engineering function within digital services, which brings data together from multiple systems to create actionable insights through technology infrastructure and tools such as:

- a data analytics platform that enables the Council to capture and store data in a data lake. Enabling multiple data sources and data sets to be aligned in one place.
  modern data science tools like PySpark, providing a scalable solution for storing and manipulating data in an automated, repeatable, and cost-effective manner.
- The continued use of SQL tools

2.2. The Data Engineering team works closely with the Councils Business Intelligence team to make best use of data in a way which can drive better decisions and management information.

Introduction of a Data Lake

2.3. In 2023 the Council embarked on a more strategic approach to unlocking the potential of its data as part of its ambition for Council wide data architecture.

2.4. The LCC Data Lake was introduced to serve as a centralised repository for structured and unstructured data, to support a more efficient and effective appraoch data analytics. The benefits of a Data Lake include scalability, flexibility, cost-effectiveness, and advanced analytics capabilities.

2.5. Azure Synapse Analytics is another critical tool introduced at this time, offering an integrated analytics service that combines data warehousing and big data analytics. Its benefits include a unified experience, scalability, integration with other Azure services, and efficiency.

2.6. This capability now gives the Council the opportunity to access and use data in a more streamlined manner and has under pinned a number of solutions such as:

- a Master Data Management and Data Sharing Tool in Children's Services (See 3.1)
- Multiple Assured Data Sets for Adult Social Care, Road Safety, Multi-agency Data Exchange, Training Course Management, IT Incident and Demand Management, Education Management which drive service based decisions and performance. (See 3.3)

2.7. We are maturing our use of the data lake and developing our skills and competency to get the most out of it. It was a key part of the previous Data Strategy to define and build a council-wide data architecture, and it will be crucial in our emerging future strategy

Master Data Management (MDM) Toolset

2.8. In 2024 the Council started its implemenation of MDM toolset in line with starergy to Implementing a data management capability and Council wide data architecture.

2.9. An MDM toolset ensures data consistency, accuracy, and stewardship across the organisation. By automatically matching data from multiple systems based on a set of business rules, it identifies the best source of data to build a golden record. This golden record can contain the most accurate details for all attributes, such as name, date of birth, and latest address from multiple systems.

2.10. The benefits of MDM include improved decision-making, compliance, and operational efficiency such as:

- Children service supported families programme, to enchnace the service to match data froom mutiple systems (See 3.1)
- The MDM solution can also improve the consistency and quality of the Council's data. This will ensure any decisions are supported by up-to-date data

Power BI

2.11. The Coucil introduced Power BI as its stratgeic Enterprise Data Visualisation tool. Digital services support the infrastructure and make data available to various services, which then create reports and analytics under a self-service approach.

2.12. This powerful business analytics tool provides interactive visualisations and business intelligence capabilities. It is made up of two components:

- **Power BI Desktop:** Connects to various data sources, transforms and cleans data, and creates complex models. Users can design interactive reports with dashboards, graphs, and maps, enabling in-depth analysis and better understanding of Council operations for data-driven decisions. (See 3.35.4)

- **Power BI Service**: An online platform for sharing, collaborating, and distributing Power BI reports and dashboards. It provides environment for publishing reports from Power BI Desktop, ensuring stakeholders have access to the latest data and insights for informed decision-making.

2.13. Together, Power BI Desktop and Power BI Service provide a robust solution for data analysis, reporting, and collaboration, empowering users to make informed decisions based on comprehensive and up-to-date insights. This is now becoming widely used across the council. A survey of the usage has been conducted, which is under the Power BI Survey Results section of this report. (See 5.4)

2.14. To support the rollout of Power BI during 2024, the digital service will work with Learning and Development to create a bespoke training course for the County Council. This course will promote its use and ensure it is used safely under a developing governance model. This will enable users to make the most of the data available to them. (See 4)

Geographic Information Systems (GIS)

2.15. The Council has a long-established Geographic Information Systems (GIS) service that provides mapping, spatial analysis, and visualisation. It offers various services, such as MapZone for officers and Mario for residents. It plays a crucial role in the future Council's data strategy.

2.16. The Council leverages ArcGIS, a comprehensive GIS platform, to enhance its decision-making processes. ArcGIS enables the Council to perform detailed spatial analysis, which is essential for understanding geographic patterns and relationships. This can support decisions with a spatial element, such as planning service delivery and analysing data with a strong spatial component. (See 3.4)

3. **Examples of how the Capabilities are being used today:**

3.1. Master Data Management and Data Sharing Tool in Children's Services

Type: Toolset, Data Sets

Description: Creates a comprehensive view of a child by matching information from disparate systems and creating a golden record. This supports families by helping the Council meet its statutory responsibility to identify Children in Need and provide early help to prevent needs from escalating. Additionally, it supports work funded

through the Supporting Families government programme by the Department for Education.

How this is helping services:

- Practitioners having better quality data and a holistic view of families and young people they are working with, resulting in better outcomes.
- Establishing links between systems and services.
- Providing more targeted support before the point of escalation.
- Using data analytics to shape the county council, and partners' future strategic vision and planning for services within Lancashire.
- Supporting how to allocate resources effectively to support children and families in need.
- Integration of disparate systems to create a comprehensive view of a child's needs.
- Identifying and providing early help to prevent the escalation of needs.

3.2. **Automation of School Data via the Wonde API**

Type: Data Sets via API Integration for PowerBI

Description: Makes near-live school data available to the county council, helping meet statutory reports for Attendance/Sickness returns by providing the local authority with details of pupils of compulsory school age who fail to attend school regularly.

How this is helping services:

- Resource Allocation ensuring that schools receive appropriate funding and support.
- Performance Monitoring allowing interventions to improve learning outcomes.
- Monitoring school improvement plans to ensure continuous enhancement of educational practices and student outcomes.
- Providing accurate data for accountability purposes, allowing the county council, to report on school performance and progress to stakeholders, including parents and government bodies.

3.3. **Multiple Assured Data Sets for Adult Social Care, Road Safety, Multi-agency Data Exchange, Training Course Management, IT Incident and Demand Management, Education Management**

Type: Data Sets for PowerBI

Description: Assured data sets have been delivered to the Business Intelligence Service, supporting data products and analysis for various departments, including Education and Children's Services, Adult Social Care (ASC), and the wider organisation. Assured data sets provide several key benefits to the council, ensuring data consistency and accuracy across the organisation, which is crucial for making

informed decisions.

How this is helping services:

- Accurate data helps councils allocate resources more effectively, ensuring that funds and services are directed to areas with the greatest need.
- Enhancing service delivery by ensuring that information is accurate and accessible, enabling services to become more effective and streamlined.
- Facilitating interoperability, allowing seamless data exchange between different services, both internal and external, which is particularly important for collaboration with partners such as the NHS and Lancashire Constabulary.

3.4. **Councillor Dashboard**

Type: GIS Dashboard

Description: The Highways Councillor Dashboard is an online application, designed to give County Councillors and nominated Highways/support staff access to key highways information/statistics, including safety defects (potholes and trip hazards), gullies, capital carriageway and footway schemes, street lighting faults and grit bins, based upon the boundary of a selected electoral division.

How this is helping Councillors:

- Providing up-to-date highway information to Councillors so they can answer questions from residents.
- Community Engagement: enhance community engagement strategies and address residents' concerns more effectively.

4. Capability development – Training

4.1. Tools such as Power BI make data readily available to officers. There was a clear need to establish and develop a training program. Without proper training, officers might struggle to fully utilise the tool's capabilities, leading to inefficiencies and potential data misinterpretation.

4.2. During 2024, Digital Services worked with Business Intelligence and Learning and Development teams to create an induction course for Power BI to ensure its safe use within Lancashire. The aim of this course is to empower officers with the skills to effectively analyse and visualise data, to make informed decisions.

4.3. This was done by piloting a two-day training course for a small group of people. The knowledge and materials gained from this pilot would be used to develop an internal course that Learning and Development Officers would offer to the County Council..

4.4. From January 2025, the county council now offers the following courses:

- **MS Power BI Introduction Part 1 of 2 Course**: This course will take the user from working with raw data to producing a report and stunning visuals in MS Power BI. This course is for employees who want to work with data figures to transform them into visuals for ease of use in decision-making and to improve services.
- **MS Power BI DAX & Measures Part 2 of 2 Course**: This course introduces participants to working with DAX and Measures to enhance reporting in Power BI. This course is for existing users of Microsoft Power BI, having completed Step 1 MS Power BI Introduction, which focuses on functions using Measures, Calculated Columns, and Calculated Tables. This is Part 2 out of 2 for the Power BI course to be marked complete.

4.5. Nineteen delegates attended both the Overview session with the Digital Champions and the Pilot, and eight delegates attended the first course on 15/01/25. The current capacity for training between January and July is for 266 people.

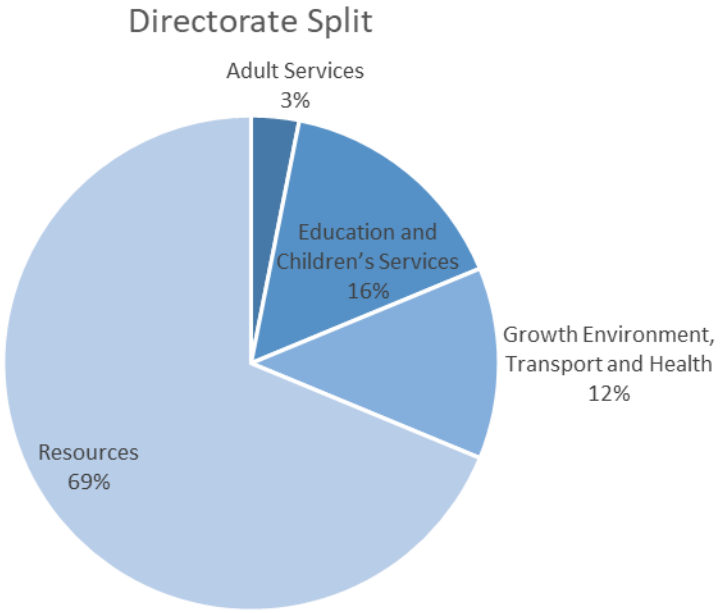
4.6. Since we launched the offer, and at the time of writing (16/01/25), 84% of places have been booked, with 224 places booked over both courses. Due to demand, Learning and Development are looking to increase capacity for this course as soon as resource and room availability allows.

5. Power BI Survey Results

5.1. To understand how the tools we have introduced support decision-making and data analytics, a survey of Power BI users who have the ability to publish dashboards and reports was conducted.

5.2. The county council has 83 Power BI users who can create and publish reports. During December 2024, Digital Services conducted a survey to understand where Power BI is being used, who is using it, what level of competency there is, and what areas of improvement are needed. Thirty-two officers across the county council responded to the survey, which is a 38% response rate.

5.3. Many of the users are within the Resources Directorate, primarily due to the Business Intelligence team, which is a shared service.



Summary of Use Cases Highlighted in the Survey

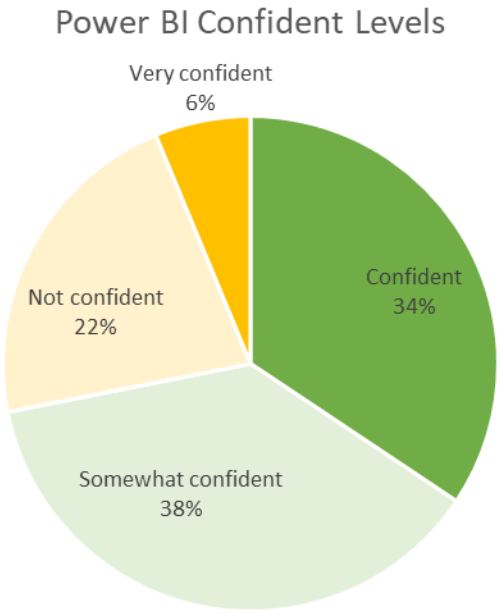
5.4. These use cases have been created by end users in service, using the toolset enabled by Digital Services.

Use Case	Description	Decisions Supported
Emergency Analytics	Compiling analytics on emergencies and presenting visuals to leadership teams.	Identifying trends and incidents, resource allocation, and emergency response planning.
Strategic and Operational Dashboards	Creating dashboards related to ECS areas and corporate strategy reporting.	Strategic planning, performance monitoring, and operational improvements.
Incident Analysis	Reporting on incidents, building usage, infections, community safety, and road safety.	Safety measures, resource allocation, and trend analysis.
Business Engagement	Developing daily refreshed dashboards showing KPIs across various areas.	Performance tracking, target setting, and business strategy adjustments.
Workforce Data and Intelligence	Providing dashboards and reports on workforce data like absence and vacancy management.	Workforce planning, absence management, and resource allocation.
Directorate Performance	Monitoring service performance, resourcing, and casework management.	Service improvement, resource management, and performance evaluation.
Feedback and Service	Analysing feedback results	Service quality

Monitoring	for various services and triggering actions based on scores.	improvement, customer satisfaction, and issue resolution.
Community Safety Services	Analysing demand for community safety services through a comparative index.	Resource allocation, safety measures, and service demand planning.
Training Data	Collating, evaluating, and reporting on training data.	Training needs assessment, course development, and performance tracking.
Multi-Agency Data Dashboards	Creating dashboards for multi-agency partnerships like the Lancashire Resilience Forum.	Programme management, status reporting, and inter-agency coordination.
School and Pupil Information	Providing data on statutory timescales, caseloads, timeliness, and resource allocation.	Educational planning, resource allocation, and performance monitoring.
Sales and Subscription Analysis	Monitoring sales opportunities and developing dashboards for school attendance data.	Sales strategy, subscription management, and attendance tracking.
Ad-Hoc Dashboards	Creating dashboards for special projects and supporting external partners.	Project management, data analysis, and visualisation.

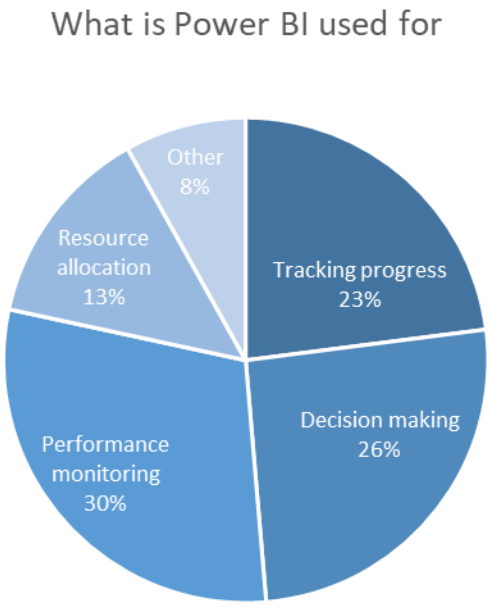
Competency

5.5. The survey results indicate a high level of engagement with Power BI among data leads, with many respondents using the tool daily or weekly. This frequent use suggests that Power BI has become an integral part of their workflow. Confidence levels among users are generally high, with several reporting very high confidence in their ability to use the tool effectively. However, there is a noted need for more training, particularly in advanced features such as DAX formulas and data modelling. This highlights the importance of ongoing training and support to ensure all users can fully leverage the capabilities of Power BI.



Operational Examples

5.6. Power BI is widely used across various departments for analytics and reporting. It supports the creation of strategic and operational dashboards, which are used to analyse incidents and report on key metrics such as building usage, infection rates in care settings, and road safety statistics. Many services use Power BI to track progress, monitor performance, and make data-driven decisions. For example, dashboards are used to monitor workforce data, track child protection proceedings, and analyse community safety trends. These operational examples demonstrate the tool's versatility and its critical role in supporting data-driven decision-making.



Benefits to the Services Using It

5.7. The benefits of using Power BI are manifold. Firstly, it significantly improves efficiency by automating data analysis and reporting processes, reducing the time spent on manual updates. This automation allows staff to focus on more strategic tasks. Secondly, Power BI provides valuable data-driven insights through its powerful visualisation capabilities, helping services to understand trends, identify risks, and make informed decisions. Thirdly, the tool enhances collaboration by facilitating the sharing of reports and dashboards with team members, management, and external stakeholders. This improved communication and collaboration lead to more cohesive and informed decision-making processes. Lastly, users reported that Power BI has a high impact on their work, making it easier to manage projects, track performance, and allocate resources effectively.

5.8. While the survey results are largely positive, there are areas for improvement:

- There is a need for a comprehensive training programme, including more advanced courses and hands-on workshops.
- Creating a repository of past resolved issues and corporate templates would aid in troubleshooting and standardisation.
- Improving data connectivity is essential to enhance access to reliable, assured data sources.
- The ability to share interactive reports needs to be improved.
- A governance model is required to validate reports and data.

6. **Challenges and Future Focus**

6.1. Digital Services manage a large number of business applications hosted both on-premise and in the cloud. Some of these systems have inbuilt data warehouses to support reporting; however, the majority do not, which limits the flexibility to query across systems or combine data with external sources. Consequently, data exists in silos, leading to poor data quality, missed opportunities, and a large, complex, and fragmented data environment that is difficult to manage.

6.2. Lancashire County Council has a mixture of structured (held in systems and databases) and unstructured data (network drives, Teams sites, and OneDrive).

6.3. As seen in the survey results, there is a need for more assured data sources. To meet this challenge within an appropriate timescale, Digital Services has partnered with third parties to provide additional resources..

6.4. Developing a data science capability is also a focus to enhance analytics capabilities. Additionally, strengthening governance, publishing data catalogues, and improving the availability of assured data sets are key priorities for the future.

6.5. There is a need to develop more advanced training courses to ensure officers have the right skills to analyse data and leverage the toolset we have. To achieve this, Digital Services are planning to work with Learning and Development to develop a more advanced training course in the first quarter of 2025.

6.6. To meet the data demands of the Council, we are refreshing our data strategy with the following objectives in mind:

- Create an operating model with the right capacity and capability to enable more effective and efficient services informed by actionable insight.
- Improve data quality and accessibility to support decision making.
- Enhance data literacy and skills to enable better use of data..

6.7. During 2025, the Council will seek a partner to support the data strategy refresh. This partner will:

- Complete a data maturity assessment to understand the current maturity level of data management practices.
- Evaluate a future operating model that delivers the right capacity and capability.
- Produce a data strategy with an implementation plan.

6.8. The planned data maturity assessment will provide a comprehensive evaluation of the Council's current data capabilities and practices. It will identify strengths and areas for improvement, providing a clear roadmap for enhancing data

maturity across the organisation. Additionally, it will help prioritise the systems and datasets we need to bring into our data lake to better support the Council.

6.9. The data strategy work will also review our operating model, including data governance, data quality, data integration, and the use of analytics and business intelligence tools. This includes, from a governance perspective:

- Establishing and naming data owners
- Providing training on what this means for data quality, decision-making, and reducing the risk of data loss

6.10. The findings will inform the development of a robust data strategy that aligns with the Council's goals and objectives, ensuring that data is effectively leveraged to drive decision making and service delivery.

6.11. This comprehensive approach to leveraging digital capabilities is enabling better decision-making across the Council, driving innovation, and improving service delivery for residents.

6.12. Getting our data strategy and governance right is crucial for unlocking future opportunities in Artificial Intelligence (AI) and Machine Learning (ML). Effective data governance ensures that our data is accurate, consistent, and secure, providing a solid foundation for advanced analytics and AI/ML applications..

- AI and ML models can analyse historical data to predict future trends and outcomes, helping us make proactive and informed decisions.
- These technologies can automatically identify patterns and anomalies in data, providing valuable insights without manual intervention.
- AI and ML can help optimise the allocation of resources by identifying areas of need and predicting the impact of different strategies.
- By leveraging AI and ML, we can personalise and improve service delivery, ensuring that residents receive the support they need in a timely and efficient manner.

Consultations

7. We have informed the Business Intelligence team and consulted with Power BI users with an internal survey.

Context and Implications

Legal (including Human Rights)

8. The council is bound by the provisions of the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018, which sits alongside and supplements the UK GDPR.

   The council must be able to demonstrate its compliance with the provisions of the UK GDPR and the Data Protection Act 2018 and in doing so, have regard to the relevant Information Commissioner's Office guidance in respect of its processing of personal data. More specifically, the council must:

- Comply with the six data protection principles listed in Article 5(1) of the UK GDPR;
- Implement appropriate technical and organisational measures to ensure, and be able to demonstrate, that the processing of personal data is performed securely and in compliance with the UK GDPR. These measures must be appropriate to the risk;
- Comply with its ongoing obligation to review the technical and organisational measures and update them where necessary;
- Ensure that all contracts involving the processing of personal data are in writing and contain provisions complying with Article 28 of the UK GDPR;
- Carry out Data Protection Impact Assessments (DPIA) for operations that present specific risks to data subjects due to the nature or scope of the data processing.

In respect of its contractual provision, Legal Services works closely with Digital, Procurement and Information Governance to ensure that all contracts involving the processing of personal data contain robust clauses that comply with Article 28 of UK GDPR, alongside appropriate confidentiality provisions and indemnity/liability clauses.

The council's Procurement Rules have recently been updated to include a provision that all *"All ICT procurements must be taken with the involvement of Digital Services"*. This requirement will help to mitigate the risks relating to the procurement of software and digital tools that involve the processing of personal data.

Financial

9. N/A

Equality and Diversity

10. N/A

Risk Management

11. The Council faces a risk related to the effective use of digital capabilities for decision-making. While digital tools and technologies have the potential to significantly enhance decision-making processes across the Council, there is a risk that, without good quality data, these capabilities may not be fully realised. This could lead to suboptimal decisions, inefficiencies, and missed opportunities for service improvement and cost reduction.

    To mitigate this risk, the Council is developing a data strategy to complement the digital strategy, ensuring data is managed, shared, and utilised effectively. This strategy will provide a framework for integrating digital capabilities into decision-making processes, enabling better insights, more informed decisions, and improved outcomes for our residents. By creating a data-driven culture, the Council aims to enhance transparency, accountability, and overall performance.

List of Background Papers

none

Paper	Date	Contact/Tel
Data and Analytics in Lancashire County Council Appendix A.pdf	9 November 2023	Vishal Mistry/ +441772532672
Data and Analytics in Lancashire County Council Appendix A.pdf	10 November 2022	Vishal Mistry/ +441772532672
Data Strategy Appendix A.pdf	22 August 2022	Vishal Mistry/ +441772532672

Part II Reason

N/A