

Internal Audit

Data Analytics Strategy 2022/25

Date: November 2022



Executive Summary

Data is a key asset in supporting the council to deliver the best possible services. Given internal audit's role in adding value and improving the organisation's operations, we can use data analytics extensively to assist in achieving these objectives.

As a council we are data rich and internal audit has tools at our disposal to provide assurance and insight efficiently and effectively by utilising this data through considered planning, suitable resourcing, and appropriate time allocation.

Our ambition is to continually improve our use of data analytics, expanding our coverage, adapting to new risks, and embracing new techniques and technologies to deliver our objectives.

The aim of the strategy is to ensure we prioritise our areas of focus and use available data sources to their full potential. We have made improvements in our use of data over recent years, but we also recognise that further progress is achievable.

Data and analytics are constantly developing, and as a council we have a challenge of keeping up to date with this fast pace of development and innovation. It's important for us to look at how we can maximise the opportunities of the rapid improvement and use of technology and use new innovative ways of working to enable us to work smarter.

This strategy is the starting point to building a strong foundation for our data analytics ambition over future years.



Introduction

Leeds City Council is a data rich organisation and, as such, Internal Audit is presented with opportunities to continually consider how data analytics can add value to our role in providing risk-based assurance, advice, and insight.

This strategy outlines our vision, aims and key areas of focus for data analytics to assist with the delivery of the internal audit plan.

The purpose of this Data Analytics Strategy is to:

- Set out the vision and aims integral to embedding data analysis within Internal Audit
- Evaluate our current position by undertaking a SWOT analysis and a data analytics maturity assessment
- Identify areas where data analysis can support the continued improvement of our service



Vision

Our vision is to continually improve our use of data analytics to contribute to a dynamic internal audit service, providing assurance over key financial systems, responding to fraud risks, and supporting delivery of the audit plan.

The volume of digital data and availability of data analytics tools encourages a reconsideration not only of the traditional approach to audit sampling and testing, but at all stages of the audit life cycle (See Appendix A). Extending the use of data analytics within Internal Audit will:

- Contribute to greater challenge and assurance during individual audits and across the overall audit plan, as reviews of key processes and controls across the council become more continuous
- Increase opportunities to detect fraud, contributing to protecting the public purse and safeguarding the council's reputation
- Provide further insight into key emerging themes and risks to stakeholders across the organisation, including through visual illustrations of risks and underlying trends

Our vision will be realised through the achievement of our key aims which are outlined below and defined in the data analytics action plan, at page 8.



Aims

- Work towards implementing a continuous programme of control effectiveness across key systems, highlighting and reviewing high risk events or transactions
- Provide greater assurance through delivering testing strategies that analyse full transactional populations, rather than sampling, wherever possible
- Ensure that systems in use and data available is considered at the scoping stage of every audit and documented in a central repository, maximising data analytics potential within audits and building a comprehensive understanding of the council's full data architecture
- Be more proactive in fraud detection through data analytics, working with our experienced counter-fraud team to establish and maintain a suite of indicators which can be monitored through exception reporting
- Respond to new or emerging fraud risks quickly, engaging with available data to develop monitoring activities for areas at risk
- Continue to deliver efficient analysis on an ad hoc basis to requests from stakeholders, assessing each on merit for inclusion in the regular data analysis programme
- Increase sustainability and capacity of our data analytics programme by providing training and shadowing opportunities for the internal audit team, developing the potential for new ideas and approaches through enabling and encouraging a diversity of thought
- Seek innovative ways to use data to increase efficiency and effectiveness of the internal audit function. Monitor the number of audits incorporating data analytics and consider setting a performance target for this. Maintain a log of data analysis work undertaken with outcomes so that performance is measurable, key themes are identifiable and lessons can be learnt
- Monitor trends across key areas and share insights with key stakeholders across the organisation, utilising visualisation tools available through modern business intelligence software



Assessment of Current Data Analytics Capability

The following data analytics maturity model outlines the five typical stages of an organisations data analytics journey:



Our current level has been assessed as 'developing'. We exhibit some of the key 'defined' traits, although some elements of 'initial' capabilities persist, and therefore, on balance, a reasonable assessment of our current data analytics capability results in the level of 'developing'. The model can be viewed at Appendix B.

We are currently using our capabilities to drive some audit activities, e.g., Key Financial Systems, but a large element of our data analytics activity remains ad hoc. A concentration of data analytics competence and confidence means that data analytics achievements are driven by individuals rather than repeatable processes.

We have successfully applied data analytics techniques to key financial systems, enabling whole population testing where possible. Improvements can be made to automate these tests, following a refresh of the testing strategies for each area.

The impact of data visualisation has been apparent in dashboards created in conjunction with Financial Services to bring interactive data to budget holders, and there is significant potential to incorporate visual insights to audit reporting and ongoing monitoring of risk areas and trends.

The following Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis has been undertaken to facilitate the implementation of strategy and identify actions to assist in becoming more data mature:



SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • Senior leadership support for increased use of data analytics • Rich variety of data sources across the council • Foundation of data analytics already applied to key financial systems • Data analytics champion in Internal Audit • Corporate business intelligence tools available • Dashboards have been developed to provide insights on key areas of spend for decision makers 	<ul style="list-style-type: none"> • Significant concentration of knowledge within the team • Undefined role of data analytics within the service structure • Limited number of audit days in the plan • Ability to keep up with technological pace of change outside the council • Currently utilising legacy version of Power BI which could result in additional resources required in future to transfer / adapt developments to newer platforms
Opportunities	Threats
<ul style="list-style-type: none"> • Highly skilled and professional audit team focussed on continuous improvement and development, with an interest in data analytics • Use of analytics could reduce time spent on traditional audits whilst continuing to provide a range of assurances, particularly for key financial systems, freeing time for additional work in other areas • Increased coverage for Annual Audit Opinion as automation is increased • Prospect of further raising the profile of Internal Audit in the organisation through presenting data analytics insights face to face, visually in audit reports and interactively via dashboards 	<ul style="list-style-type: none"> • The quality of data available in different systems is known to vary • Potential data privacy issues to overcome • Supporting wider financial management in their transformation could hamper efforts to transform internal audit • Potential for duplication of work with other service areas • Access to writing and editing queries from some key systems often restricted to IDS colleagues, which reduces independence and can lead to time lags



Maturity of Data Analytics Capability

The steps towards increasing our data maturity form the basis of our key objectives which are outlined below.

The initial priority will be to design and deliver training focussed on different levels of involvement (awareness / planning and execution / interpretation), embedding data analytics across the team to stimulate different ways of working.

Target Maturity Level	Target Date	What this will look like
Defined	October 2023	<ul style="list-style-type: none">• Training delivered to the team resulting in increased utilisation of data analysis techniques across all areas of the audit plan• Data analysis programme is documented, and key processes are easily repeatable
Advanced	October 2024	<ul style="list-style-type: none">• Data analytics is consistently applied across all areas of the internal audit service• Data analysis processes are automated, providing continuous auditing where appropriate• Team empowered with skills to explore data, making room for creativity to identify additional risk areas
Leading	October 2025	<ul style="list-style-type: none">• Introduce more predictive and prescriptive data modelling such as forecasting and scenario planning• Consider the application of data science to the vast array of available data sources, with the intention of finding unseen patterns, links, and classifications to inform decision making.



Data Analytics Action Plan – Path to Maturity

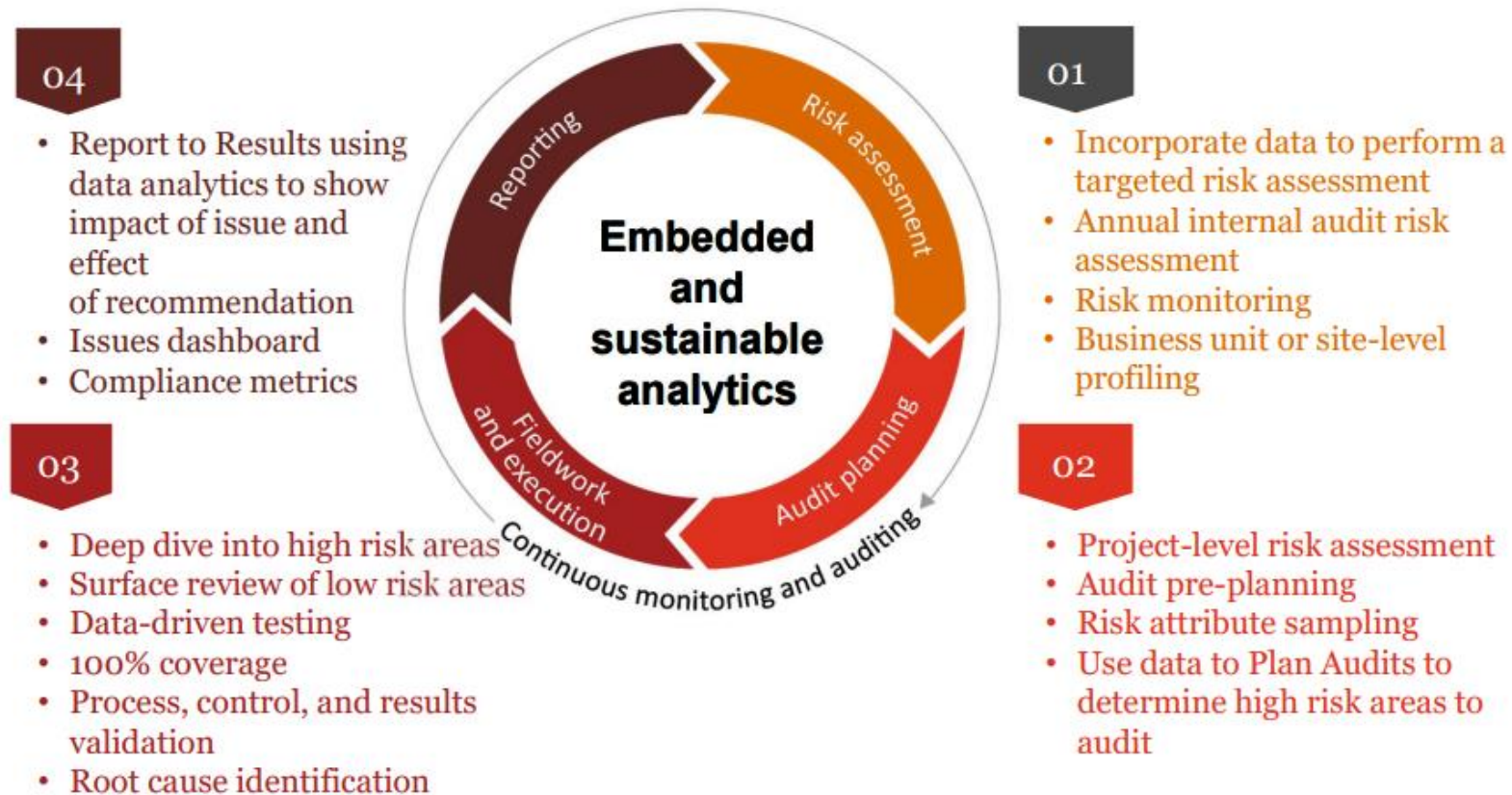
Actions to achieve 'Defined' Maturity	
Training and Development	Provide training sessions on data analysis tools and techniques for the internal audit team. Ensuring that there are opportunities to put training into practice, allocate resources to sharing knowledge and experience through working with leading auditors where data analysis work has been identified through the audit scoping process.
Key Financial Systems	Enhance existing KFS testing strategies by introducing a continuous programme of control effectiveness across key financial systems. This will initially involve a rolling programme of routine tests for each area.
Other Fraud Risk Areas	Liaise with the counter fraud team to consider new areas where data analytics could be introduced, based on experience, concerns raised, and referrals received.
Cross-Council Links	Discover and link up with other data analytic initiatives in place across other service areas, tapping into existing resources where these would enhance our audit work and reciprocating where applicable, and further developing our knowledge of the council's data architecture.
Data Analysis Network	To share ideas with, and learn from, data analysts within the council, across neighbouring authorities and the Core Cities at regular intervals.
Software developments	Invest time in gaining knowledge of the Microsoft suite of tools available corporately, such as Power Apps and Power Automate, for consideration as to how they can potentially assist us in achieving our data analytic aims.



Actions to achieve 'Advanced' Maturity	
Audit process and reporting	<p>Embed consideration of using data analytics in scoping stage of every audit. Utilising an opt-out approach, where data analytics will not be incorporated into the audit the reasons for this will be recorded.</p> <p>The purpose of each system and the data it holds should be documented at the outset of each audit, building a core repository of the council's data architecture.</p> <p>Consider how visualisations can enhance findings presented in audit reports.</p>
National Fraud Initiative (NFI)	Undertake internal NFI data matches more regularly to respond to anomalies in a more relevant timeframe.
Key Financial Systems	Building on the developed rolling programme of routine tests as outlined above, create a continuous monitoring process and reporting procedure.
Trend Analysis / Stakeholder Information	Produce trend analysis across a range of areas, to inform ongoing audits and audit planning, and present highlights and potential emerging issues to directorate leadership teams and other stakeholders.
Actions to work towards 'Leading' Maturity	
Data science	<p>Evaluate current machine learning and artificial intelligence tools and techniques.</p> <p>Identify suitable pilot areas for the application of available tools.</p>



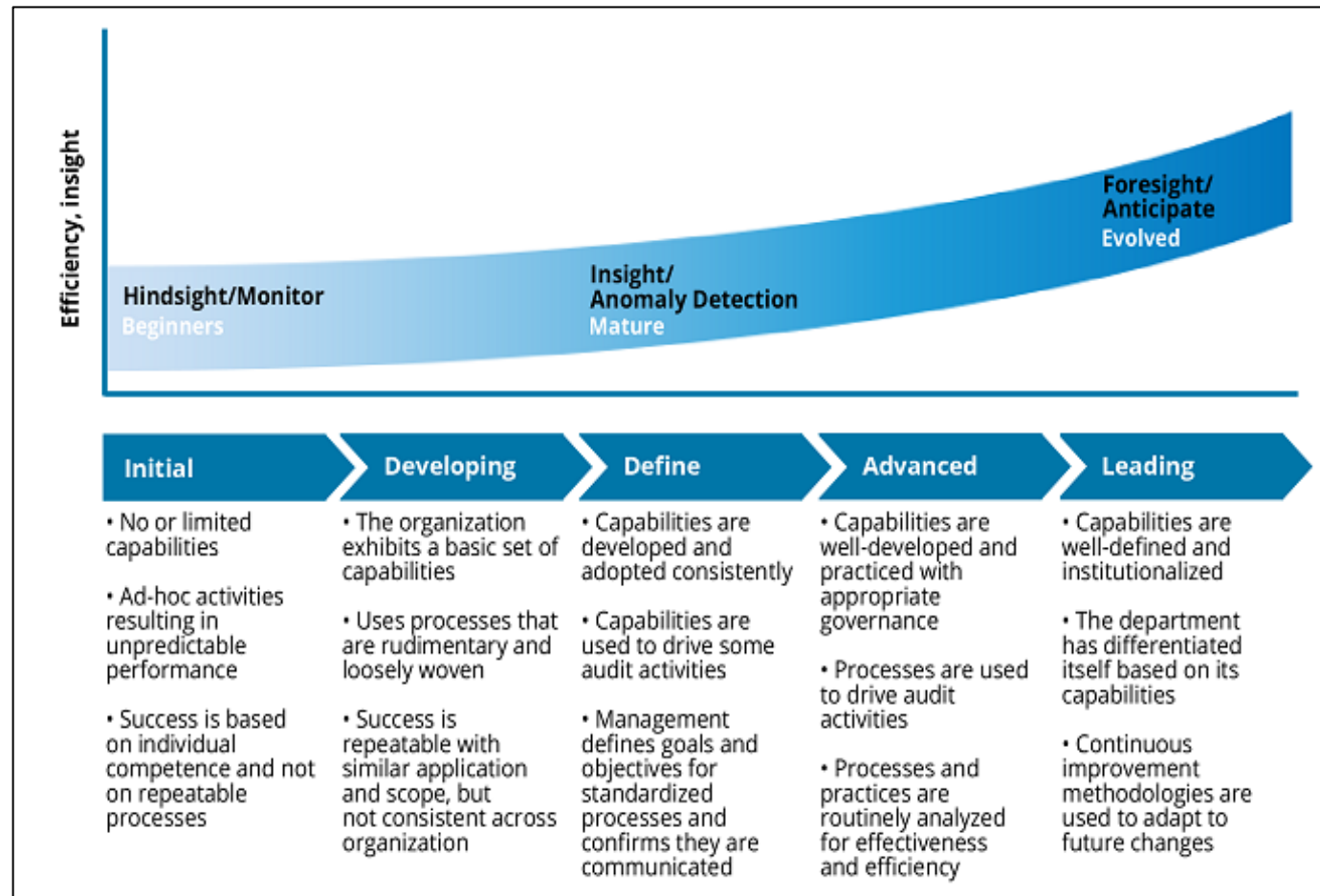
Fully incorporating analytics into the audit process¹



¹ IA Transformation to Data Analytics, PwC



Maturity of Internal Audit Analytics²



² 'Evolution or irrelevance? Internal Audit at a crossroads: Deloitte's Global Chief Audit Executive Survey

