

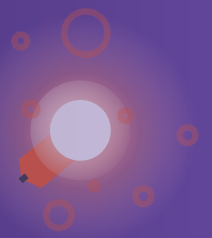


# ENGINE B

## A guide to the Audit Common Data Model

Enabling continuous, always-on audit



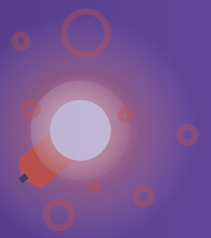


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*“The measure of intelligence,  
is the ability to change.”*

*Albert Einstein*

# Introduction



The recent criticism of the audit profession has shone a light on the need to change. It is fair to say that audit services have evolved over the years, however, technology is evolving faster resulting in a lag behind for the audit profession.

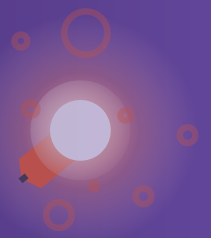
The digitisation of audit is a much-talked-about phenomenon. Auditors are indeed exploring and implementing digital innovation to drive efficiency and automate key processes. However, many are under the misleading impression that automation and paperless audits tick the box for ‘digitisation’. Many audit firms have taken into account that while the medium may have changed through the adoption of technology, nothing about the audit process itself has altered with it. This means that the same systematic inefficient and time-consuming practices still exist. And to compound this issue, many auditors are not getting to grips with the technology that ensures quicker, more accurate audit results, less exhaustive ways of accessing client data and understanding their client and their business. Essentially, auditors are not yet using technology as a way to enhance decision-making, but more as the next step up from a pen and paper.

Regulatory factors are also driving change in the audit profession. Regulatory bodies, such as the Competition and Markets Authority (CMA), are calling for improved quality of services and increased competition. The choice is too limited with the Big Four firms conducting 97% of the audits of the biggest companies. The Financial Reporting Council (FRC) has also had its say, instructing the Big Four to split audit and consultancy arms by 2024.

It's time for a change. Audit firms must get to grips with regulatory changes and data challenges and open their minds to new, empowering ways of working.

This guide explores the current challenges facing the audit sector and delves into Engine B’s Audit Common Data Model and how it works with our Knowledge Graphs. This revolutionary combination provides a game-changing, one of a kind solution that enables continuous, always-on audit powered by intelligent context-driven decision-making – **audit of the future.**

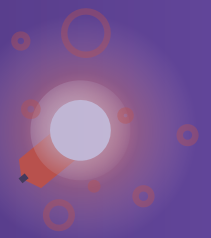




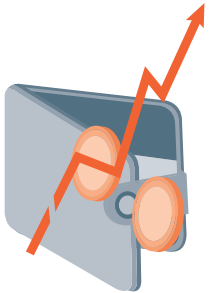
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## Regulatory Pressures



In 2019, the CMA published a paper outlining serious competition concerns and proposing changes to legislation to improve the audit sector, proposing:

- Companies choose their own auditors, and as a result are choosing those with whom they have the best ‘cultural fit’ or ‘chemistry’ rather than those who offer the toughest scrutiny .
- Choice is too limited, with the Big Four audit firms conducting 97% of the audits of the biggest companies.
- Auditors’ focus on quality appears diluted by the fact that at least 75% of the revenue of the Big Four comes from other services.

## Sporadic use of common data standards



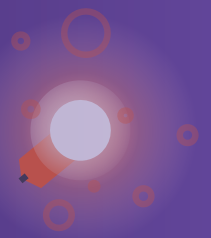
Common audit data standards through the American Institute of Certified Public Accountants (AICPA) and Standard Audit File Tax (SAF-T) are voluntary and not widely used. Additionally, these standards do not cover unstructured data, such as emails, PDFs, objects, events – all crucial to getting the big picture throughout an audit process.

## Data volumes and complexity

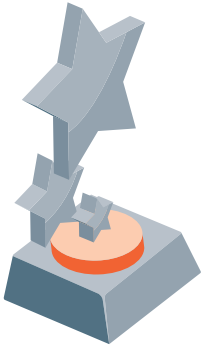


In a typical audit process, an auditor will encounter hundreds of different accounting systems and multiple systems in the same company. There are also many conflicting definitions and standards when it comes to data. Furthermore, the process of obtaining client approval for provision of data to the auditors can be time-consuming. This results in multiple attempts and a lot of back and forth between the company and the auditor on data capture. Every time an audit is performed, this complex, time-consuming and inefficient data extraction analogy is applied.

The move to leveraging technology to make data gathering and analysis more efficient has not resolved the spaghetti of different client technology systems that need to be accessed.

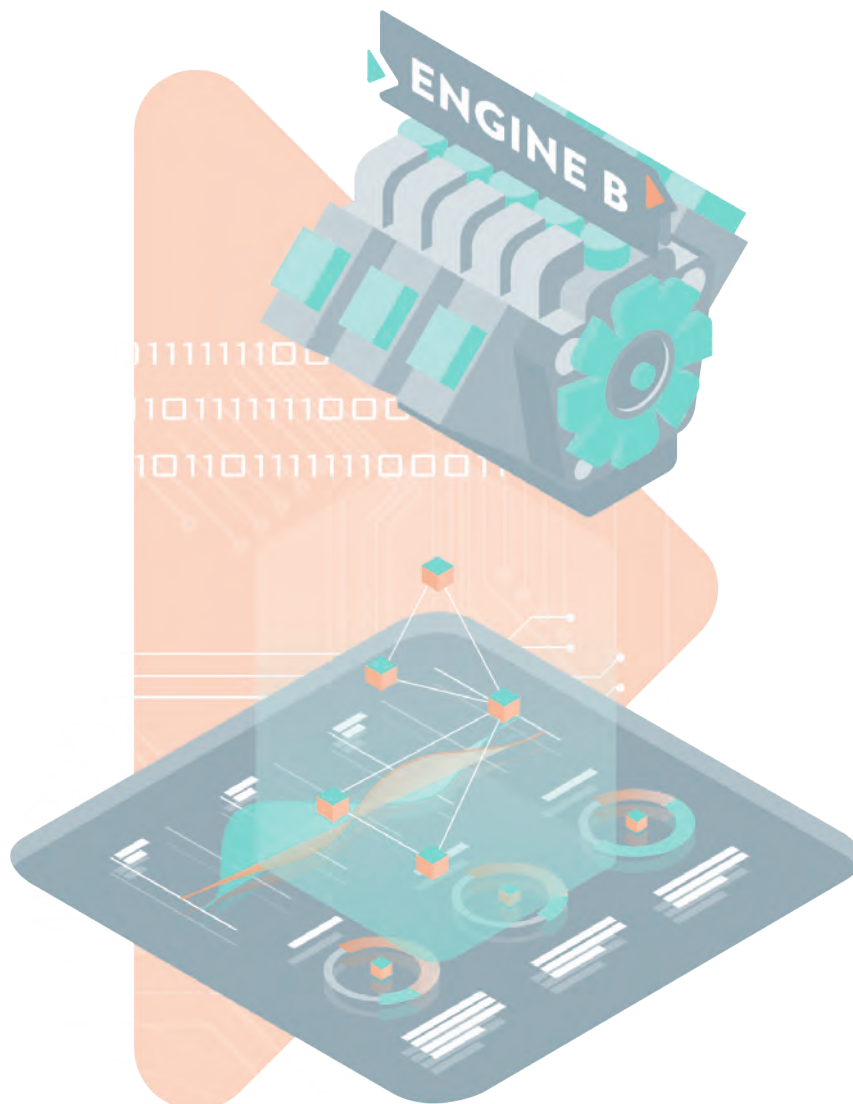


## Lack of competition

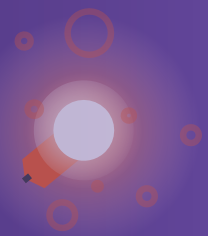


The Big Four competes to provide audit services to the largest most complex organisations and each use their market power to dictate terms to existing or prospective clients. It begs the question: Is this enough competition? Surely competition in respect of quality helps make sure that the public interest is continuously well-served and price competition ensures that audit services are provided cost effectively .

Furthermore, smaller audit firms cannot always afford expensive data extraction solutions, creating an unfair playing field.



# What is a Common Data Model?



Bringing together data from multiple systems and applications is an expensive and time-consuming task. Without being able to share and understand the same data easily, each application or data integration project requires a custom implementation.

A Common Data Model provides a shared data language for business and analytical applications to use.

A **Common Data Model (CDM)** simplifies this process by providing a shared data language for business and analytical applications to use. A CDM is a metadata system, which makes it possible for data and its meaning to be shared across applications and business processes. A CDM allows standardisation and metadata management and lineage that:

- Enhances search and analysis capabilities for metadata collection and management.
- Discovers, harvests, aggregates and provides access to knowledge.
- Accommodates different types of search queries as well as accommodating large and complex data links and relationships.

## Why use a Common Data Model?

Imagine that you have three Enterprise Resource Planning (ERP) systems – each of the ERPs have different versions. Perhaps each ERP system was created independently, with different structures to represent an entity, such as General Ledger, in nearly (but not quite) the same way. If you use a CDM, you can build your data in a standardised format (using the CDM standard entities, attributes, and relationships) and then each ERP system could use the same data. Of course, each ERP system might have its own additional data and schemas, depending on its functionality. But when it comes to data extraction for audit purposes, for example, you can access the conflicting data from the ERP systems and generate a standard definition for each data element, quickly, cleanly, and with confidence.

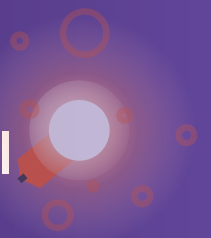
What if you need to extract data from a fourth ERP system? Your data will be ready in the CDM, so your efforts can be concentrated on analysing and interrogating the data rather than dealing with data dilemmas.

This is a rather simplistic view of this scenario. A typical auditor will have many clients, some-times hundreds, all with different ERPs, that require data extraction services. This means that the data extraction service needs to be reapplied every time an audit is done – a very clunky, and time-consuming process.

*“Engine B is an exciting cross-industry initiative which will transform corporate transactions and access to data, and we are pleased to be playing an integral role.”*

*Sharron Gunn,  
Chief Executive  
of Shared Services  
at ICAEW*

# The value of an Audit Common Data Model



In recent years, technological advancement has meant that auditors can automate audit processes and leverage Robotic Process Automation (RPA) applications and artificial intelligence (AI) to analyse General Ledgers, for example. Therefore, technological progression in the audit profession isn't a new concept. The question is this: "While these new technologies help auditors to achieve more with less, are they accessible to all audit firms, no matter their size?" The answer is a resounding no.

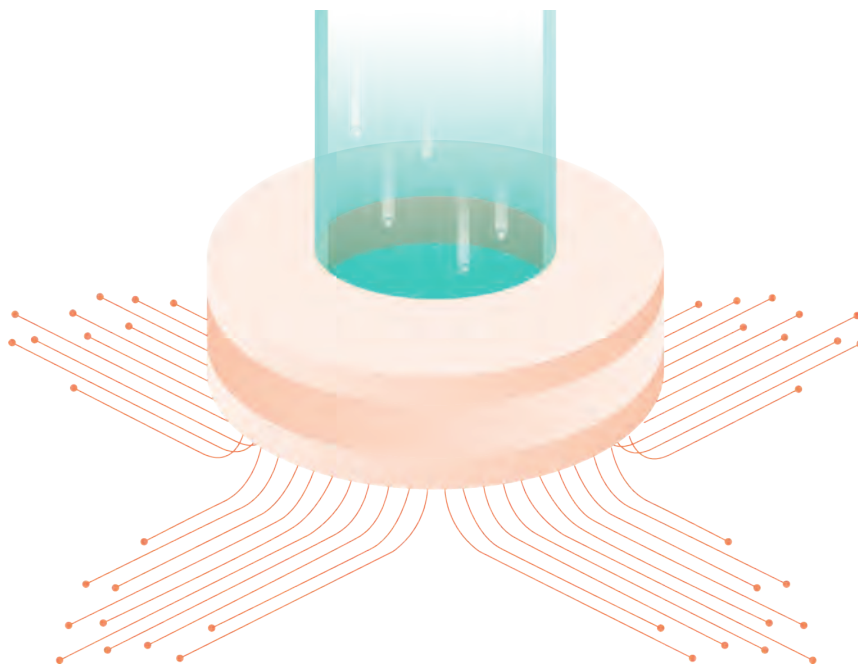
Many technologies used in the professional services industry, such as data extraction tools, are either expensive or lock you into one ecosystem where you have to use one supplier's data and analytics tools. Furthermore, these tools are developed primarily by large audit firms. As a consequence, it presents an issue for challenger audit firms or emerging players in the sector because it further increases the relative capacity of the leading firms and acts as a barrier to entry for smaller competitors.

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*Opening up the audit industry will create a level playing field for all audit firms, no matter their size.*

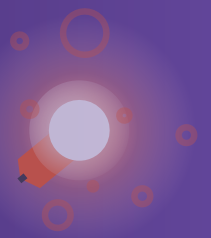
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However, what if there were a requirement to share technology? Could it serve to open up the industry and create a level playing field for all audit firms, no matter their size? This concept meets the regulatory requirements, as described on [page 5](#), to increase competitiveness and quality of services, and that is why Engine B created an **Audit CDM**.





# The value an Audit Common Data Model



## Audit Common Data Model

Imagine not needing to extract and map client data over and over again (which typically takes up 30-40% of an auditor's time), each time you perform an audit? What if an audit firm of any size could freely access one CDM to audit any organisation without having to spend money on data extraction tools? Think of the enormous time, effort and cost savings for the auditor, and its clients. Welcome to Engine B's Audit CDM.

*30-40% of an auditor's time is spent interrogating, extracting and analysing data.*

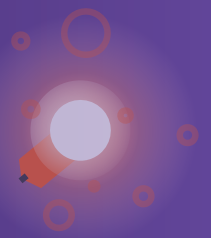


## How has Engine B created the Audit CDM?

Rather than innovating alone, Engine B worked with partners such as **Microsoft**, thirteen audit firms, academic institutions and is supported by the **Institute of Chartered Accountants in England and Wales (ICAEW)**. Collaboratively, we created a new standard for the data that auditors can use that ensures completeness and accuracy – an Audit CDM.



# What makes a successful Common Data Model?



There have been attempts made by organisations in the past to create an Audit CDM, however, these attempts have failed. Previous efforts have not been successful because they focused solely on technology. To create a CDM that transforms professional services practices takes a huge collaboration effort as well as new innovation standards. Our Audit CDM has been successful and is driving the professional services industry forward, through:

## Unique Collaboration



Our collaboration with Microsoft, thirteen audit firms, end clients, regulators and investors mean we work openly. Clients feel safe that they experience market leading innovation and the highest level of service, with significantly reduced risks.

## Microsoft plug and play capability



Microsoft is working on a Open Data Model Initiative to create open-source CDMs in different industries, such as pharmaceuticals, healthcare, and professional services. Microsoft's vision is to open up these industries so complex systems can exchange data. Engine B is the only organisation contributing to Microsoft's data project for audit, making us an integral component to Microsoft's Open Data Model Initiative for professional services.

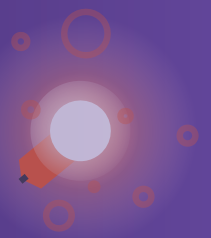
Our Audit CDM is also Microsoft plug and play friendly and easily integrates with other Microsoft solutions such as Power BI and Power Apps.

## Non-competitive offering

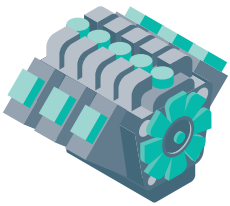


Having one revenue model that does not compete with professional services players allows our diverse group of players to work together. We act as an enabler for professional services firms, allowing clients to transform and drive their digital growth.

# What makes a successful Common Data Model?



## Unique IP - Data mapping and Knowledge Graphs



Successful data mapping bridges the gap between two systems or data models, so that when data is moved from a source, it is accurate and usable at the destination. This is key in getting the most out of your data in data migrations, integrations, transformations, and in populating a data warehouse.

Furthermore, the development of our unique Knowledge Graphs means that the Audit CDM data can be served up to enable in-depth, contextual, visual data analysis. Knowledge Graphs help to increase the capacity of challenger firms who cannot afford large internal data teams, enabling fuller competition in the audit market.



## Standardisation of schemas

A successful CDM needs a standard and extensible collection of schemas such as entities, attributes, and relationships that represent business concepts and activities, as well as well-defined semantics, to facilitate data interoperability.

## The uniqueness of our Audit CDM

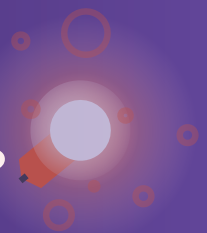
Engine B's Audit CDM works by providing a common data access platform that can be installed in any client environment. It's unique in that it enables the interrogation and analysis of both structured and unstructured data. As audit firms roll out our Audit CDM, competing firms and even non-audit services organisations can leverage the Audit CDM in the same client site.

*Engine B's Audit CDM enables the interrogation of both structured and unstructured data.*



To further transform the audit profession, Engine B has developed unique Knowledge Graphs that can sit on top of the Audit CDM to perform intricate, visual and contextual data analysis. This powerful duo creates a ground-breaking intellectual property for the audit industry.

# How do our Knowledge Graphs and Audit Common Data Model work together?



**A powerful combination, set to transform the industry.**

## What is a Knowledge Graph?

A Knowledge Graph allows us to answer the question ‘why?’. Knowledge Graphs allow intricate data interrogation by using a visual inter-relational view of structured and unstructured data and mimicking the way a human brain analyses data, by providing context. Knowledge Graphs transform data interrogation practices and provide granular levels of insight, which helps expose risks and anomalies.

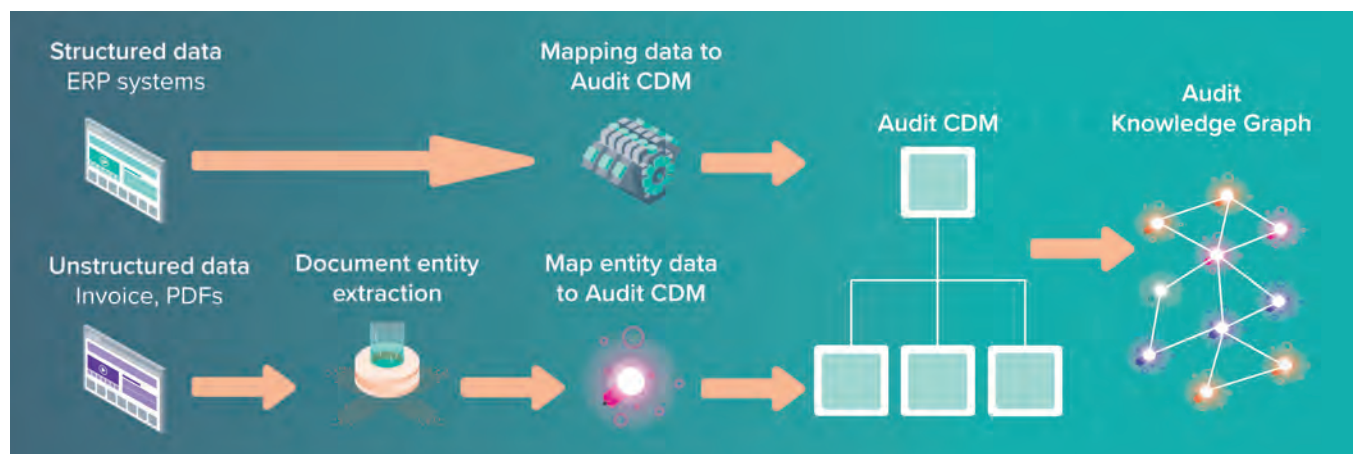
Google, for example, operates its Knowledge Graphs as part of their infrastructure. The information from the Google Knowledge Graph is used to augment search results.

*“We are working with Engine B to develop and deliver common data models within professional services. We believe that common understanding, description and usage of data will invite greater usage of technology across both structured and unstructured data to drive innovation in both audit quality, but also next-generation audit and in other areas of professional services. Microsoft is collaborating with the team at Engine B and looks forward to continued support over the coming years.”*

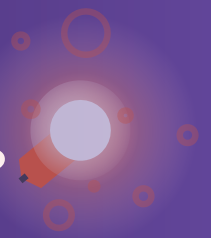
*Ulrich Homann, Corporate Vice President and Distinguished Architect at Microsoft.*

## How does our Knowledge Graph work with our Audit CDM?

Any innovation in audit methodology should capitalise on the large amounts of available client data. Auditors presently tend to perform procedures over a relatively small sample of transactions (as few as 30 or 40) and then generalise conclusions across a much broader population. By using our Knowledge Graphs on top of the Audit CDM, auditors can gain the capacity to granularly examine all transactions.



# How do our Knowledge Graphs and Audit Common Data Model work together?



## Enabling industry-wide decision-intelligence

Engine B's Knowledge Graphs sit on top of the Audit CDM giving auditors everyone one, universal source of client data (structured and unstructured) that can be interrogated and analysed. The Audit CDM creates not only a base layer of quality data, but universal data standards, thus enabling industry-wide decision-intelligence. This powerful combination of supercharged audit services enables auditors to:

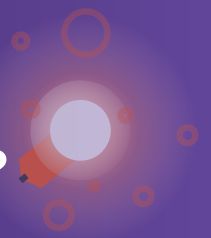
- Access one, universal source of standardised client data.
- Easily store critical information in a form that is easy to reuse.
- Make improved decisions by finding links and data relationships faster.
- Discover hidden anomalies in data, that may have gone unnoticed leading to costly fines.
- Uncover hidden data and relationships that are too complex for human cognition.
- Focus on areas of potential concern and to drill down on those items with the highest risk.



***An auditor can use a Knowledge Graph to link all unstructured documents to their structured data; helping them to intelligently evaluate risks that are often hidden in common documents in an automated manner.***



# How do our Knowledge Graphs and Audit Common Data Model work together?



## Enabling industry-wide decision-intelligence

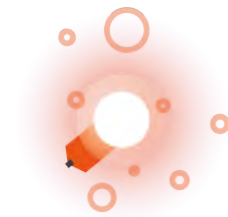
For example, an auditor can use our Knowledge Graph on top of the Audit CDM to search across and link between structured and unstructured data; helping them to intelligently evaluate risks that are often hidden in common documents in an automated manner.

Knowledge Graphs can be used to improve decision-making across a wide variety of use cases. Engine B has developed domain-specific Knowledge Graphs for:



### Fraud detection

Use our Knowledge Graphs to uncover and detect fraud quickly. Unlock hidden risks in data to make faster decisions.



### Anomaly detection

Use our Knowledge Graphs to discover anomalies in data. Make sense of huge data volumes and surface the most valuable links and relationships to understand the context created.



### Legal investigations

Use our Knowledge Graphs for property/real-estate analysis and combine them with other available data sources. This empowers professional services firms and in-house teams to seamlessly interact with non-legal services where necessary.



### Tax investigations

Use our Knowledge Graphs to analyse and interrogate suppliers, leases or contracts, and transfer pricing rules. For example, understand which suppliers are based in a certain country due to a change in import duty or analyse what lease contracts don't have a termination clause.

# Support Resources

## The Future of Audit event recording

Access Engine B's recent digital event to hear from Robert Hodgkinson of the ICAEW on the future of audit. See our Audit Common Data Model and Audit Knowledge Graphs working in tandem to provide any size of audit firm access to one common source of client data with intricate, context-driven decision-making capabilities.

[Watch the video.](#)

## Access our Audit CDM

If you would like to access our Audit CDM, then visit our Audit CDM repository on GitHub.

[Access our Audit CDM on GitHub.](#)

## Product guides

If you would like to learn more about the technology underpinning our Audit Common Data Model and Knowledge Graphs or how they can help to solve your data challenges, then download one of our comprehensive guides.

[Access our guide to Knowledge Graphs.](#)

[Access our guide to anomaly detection in audit.](#)

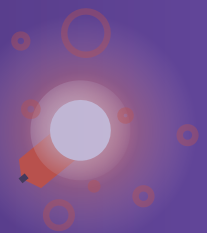
[Access our guide to audit ethics in technology.](#)

[Access our Business guide.](#)

## Talk to one of our team

Get in touch for more information on any of our products.

Contact us



Engine B is a digital technology company specialising in AI and data analytics for the professional services industry. With our Audit Common Data Model and Knowledge Graphs, we are transforming the way that audit services are delivered and helping to create a level playing field, where any size of audit firm can compete.

We work with key industry partners, such as Microsoft, thirteen audit firms, ICAEW and educational institutions to vastly improve the quality of professional services practices, to empower organisations to make better operational decisions and to advance their digital growth.

[Contact us](#) for more information on our Audit Common Data Model and Knowledge Graphs.

[Visit our website](#)

