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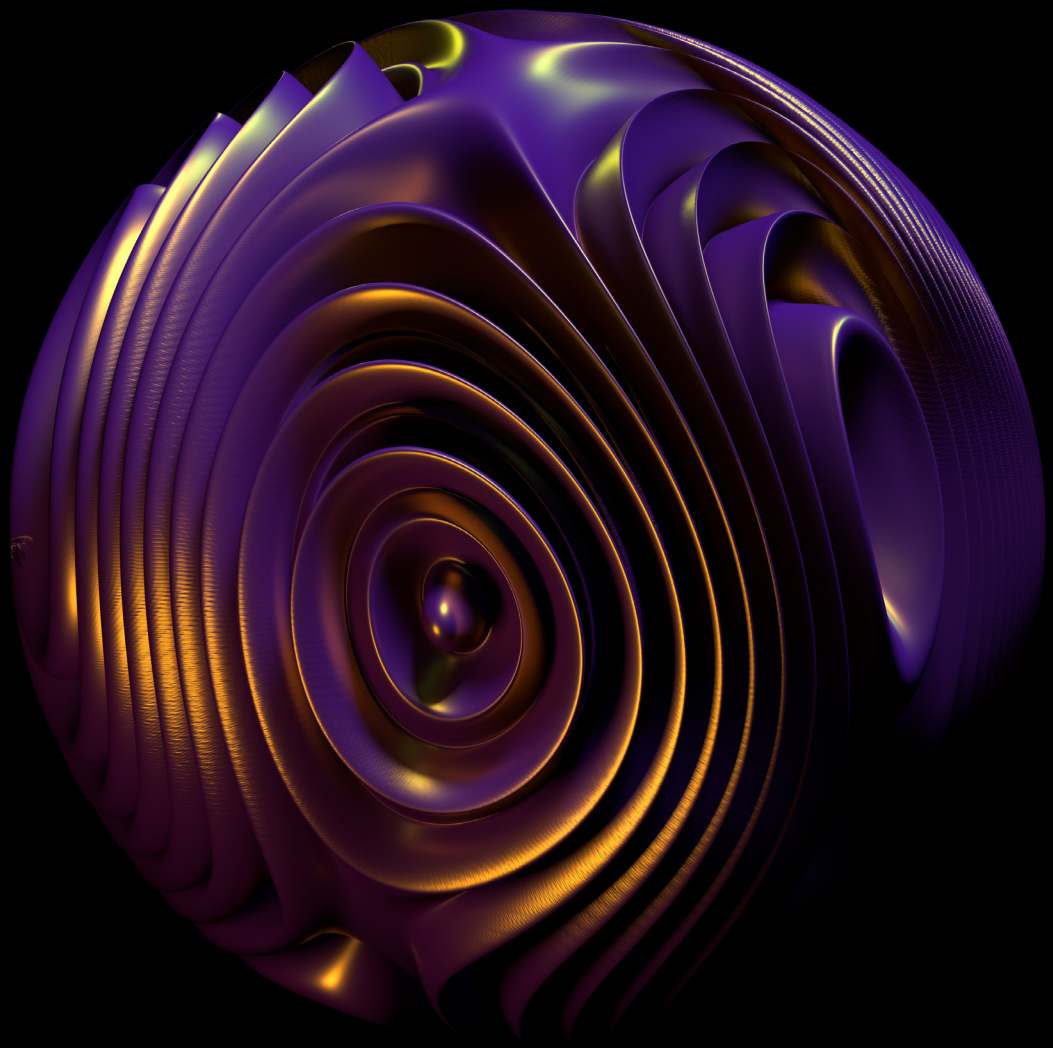

Deloitte Indonesia Business and Industry Updates

Data analytics: The future of audit in Indonesia

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The critical role of data analytics in audit

"Data is the new type of wealth for our nation; it is now even more valuable than oil," commented President Joko Widodo during a speech he made in early 2020, where he also highlighted data accuracy as key to decision-making.[1] This message was true then, and perhaps even truer now: with Indonesia undergoing rapid digital transformation under the Fourth Industrial Revolution, there is now a widespread recognition amongst players across both public and private sector domains of data analytics as a key enabler of digitisation and transformation.

Broadly, data analytics refers to the complete management of data – including its collection, organisation, storage, and analysis – with the use of a variety of approaches and technologies. Typically, insights obtained from the analysis process are used to help organisations drive business strategy and performance; manage and minimise risk; or meet other specific needs by identifying new trends and uncovering new opportunities.

Within the specific context of audit, however, a narrower definition of data analytics may be instructive (see sidebar for a brief primer on data analytics in audit). Specifically, audit analytics can be better understood as the use of technology-enabled analytical techniques to plan and enhance the performance of an audit, including its accompanying risk assessment procedures, testing of relevant controls, and other substantive analytical procedures.

By enabling auditors to carry out the exploration of large datasets to find and analyse patterns, identify anomalies, profile trends, and uncover further insights, audit analytics offers two key benefits:

1. **Ability to analyse large volumes of company transactions**
   Through the use of data analytics, auditors are able to analyse large volumes of company transactions, instead of limited sample sizes as in conventional audits. This enables them to better identify outliers and assess material misstatement risks, while also freeing them up to focus on more strategic priorities, such as enhancing audit quality and exercising their professional judgement.

2. **Insights to improve the audit process over time**
   With the ability to identify material trends relating to customer behaviour, operations, and other business issues, auditors will be able to obtain more relevant and strategic insights to improve their benchmarking and other audit processes over time.

A brief primer on data analytics in audit

The audit profession is no stranger to the concept of data analytics. Indeed, its evolution had begun decades ago in the 1980s, with the advent of Generalised Audit Software (GAS). Later, in the 1990s, Computer Assisted Audit Techniques (CAATs) were introduced on the back of the increasing popularity of computers – and subsequently, became established as the standard of audits worldwide.

In Indonesia, CAATs have been standardised and codified under Public Accountant Professional Standards (*Standar Profesional Akuntan Publik*) – in particular, within the Auditing Standard Statement (*Pernyataan Standar Auditing*) No. 57 (SA Section 327) – in which they are referred to as *Teknik Audit Berbantuan Komputer.*[2]

[1] "Jokowi: Data adalah new oil, bahkan lebih berharga dari minyak". Tempo.co. 24 January 2020.
[2] "Teknik Audit Berbantuan Komputer". Inspectorate General of Ministry of Transportation. 8 April 2019.

Leveraging data analytics in audit

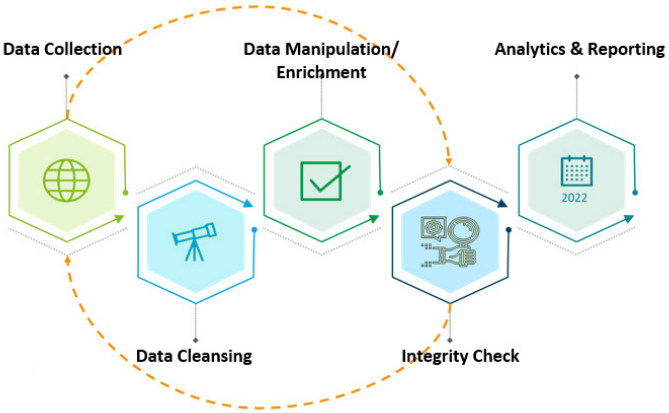
In our world today, highly complex data is constantly being created in immense volumes and at astounding speeds. This ongoing data explosion – coupled with ever-evolving and more stringent regulatory demands – has necessitated auditors to integrate analytics into their audit processes, and deploy the use of more advanced analytics tools. Modern audit analytics tools, in particular, are capable of helping auditors to not only inspect, cleanse, and transform their data, but also identify anomalies, provide insights, support decision-making – and ultimately, deliver more risk-focused and performance-focused audits.

Integrating data analytics into an audit

Typically, an audit engagement begins with the data collection process, during which data is retrieved from all depositories and systems, before it is cleansed, transformed, and processed. Then, data integrity checks are performed to ensure that the data is of sufficiently high quality to support the analysis in the next phase.

Next, data analysis is conducted to identify and evaluate the risk of material misstatements. This entails the use of a variety of analytics tools to connect, model, and visualise the data – with insights obtained from this process then used to plan and execute the necessary audit procedures to address the aforementioned identified risks (see Figure 1).

Figure 1: Leveraging data analytics at every phase of an audit

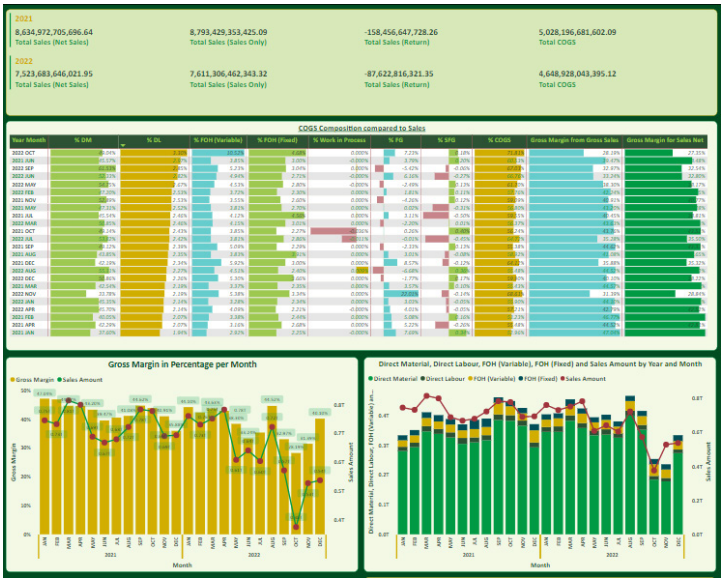


Repeat the process if the data cannot be reconciled.

Across all of these phases, a variety of data analytics tools can be leveraged to simplify data collection, enhance the accuracy of the data analysis, and provide real-time insights. Interactive dashboards, for example, enable auditors to easily import, analyse, and visualise data across multiple sources; detect trends and anomalies; monitor key performance indicators and financial trends; and generate reports detailing the level of accuracy of an organisation's financial records and its most pertinent risks (see Figure 2).

At the same time, predictive analytics can also be deployed to support auditors in analysing historical data, conducting forecasts on upcoming trends, and proactively identifying potential risks and opportunities to make more well-informed decisions for greater audit accuracy and efficiency.

Figure 2: Example of an interactive dashboard



How data analytics is transforming the field of audit

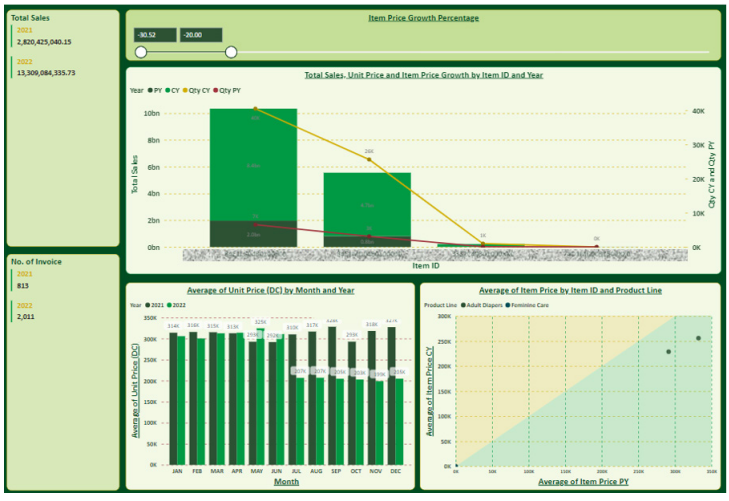
It would not be an understatement to say that the integration of data analytics into audit is transforming the entire field as we know it. To be more specific, we observe that data analytics is transforming audit in two important ways:

1. **Greater efficiency**
   The most straightforward implication of leveraging data analytics is greater efficiency. By simplifying – or in some cases, even completing – what used to be labour-intensive tasks, auditors are freed to focus on the more strategic aspects of audit quality.

2. **Sharpened risk focus**
   The real gamechanger of audit analytics, however, lies in its ability to provide a "fresh pair of eyes" or different view of the dataset to assist auditors in sharpening their focus on outliers and risks. In other words, data analytics does not merely complement an audit; it also elevates data interpretation and analysis to the next level. For example, by obtaining a more comprehensive view of an entity's transactions, an auditor can become better equipped to identify any outliers or instances where the transactions being conducted are inconsistent with the usual practice or accounting policy of the entity.

It must be acknowledged, however, that the use of data analytics in the audit process is not without its roadblocks. Variables that could influence the outcome include, for example, the availability, complexity, and structure of the data, as well as the data analysis skills of the audit professional involved. But these are not insurmountable challenges: by working closely with data analytics specialists – and the entity in question – to establish a mutual understanding of the audit requirements, priorities, and expectations, auditors can vastly improve the level of data analysis and insight that is being delivered.

Figure 3: Example of a risk assessment outcome



Real-world application of audit analytics

Based on Deloitte Indonesia's experience leveraging the use of audit analytics tools, we have found that the integration of data analytics into the audit workflow significantly improves both the accuracy and effectiveness of audit outcomes. More specifically, we have noticed several meaningful improvements in three specific aspects of an audit:

1. **Risk assessment**
   Through the use of a range of analytics tools, our auditors were able to more effectively analyse large datasets to spot anomalies, identify specific groups of accounts exhibiting characteristics of fraudulent activities or matters of audit interest, and pinpoint potential areas of risks – which can in turn be mitigated through the necessary allocation of resources.

   To understand how this works, consider an analytics dashboard depicting the multi-year pricing trends for a set of items sold by an entity (see Figure 3). With this diagrammatic visualisation, four outlier items can easily be identified as having experienced significant decreases of 20% to 30% in prices from the prior year. When extrapolated to a 100% coverage of an entity's data, it becomes easy to see how such tools can drastically enhance an auditor's understanding of a population's data and their corresponding identification of outliers.

2. Controls verification

Another area in which data analytics has been found to be particularly useful in delivering more precise audit outcomes is in the verification of controls in the order-to-cash workflow process. Traditionally, a sampling approach is adopted for this segment of the audit. However, with the use of data analytics, it now becomes possible to conduct a three-way match testing on the entity's entire dataset (see Figure 4).

Briefly, this is achieved through the use of document verifiers in the analytics tool that work to match large volumes of invoices, sales orders, and delivery orders with one another for a given period. Any unmatched invoices, sales orders, or delivery orders, are then flagged as discrepancies warranting greater attention from the auditor.

3. Recalculation of effective interest rates

Lastly, data analytics also has important use cases in the recalculation of effective interest rates for multi-finance entities. As with the previous example, a sampling approach is traditionally adopted for this segment. This means that auditors typically selected a sample of data with which to perform the manual recalculations of the effective interest rates, which are then compared against management's calculations to identify any discrepancies.

However, with the aid of structured query language (SQL) tools, auditors can now automate the recalculation process for the entire dataset (see Figure 5). This not only saves auditors a considerable amount of time, but also enables them to test entire data populations and deliver more precise outcomes.

Figure 4: Example of data analytics findings in an order-to-cash process workflow

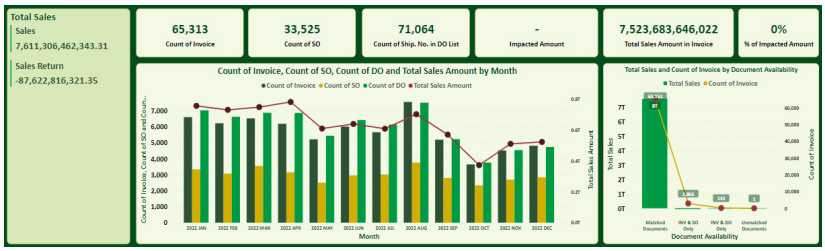
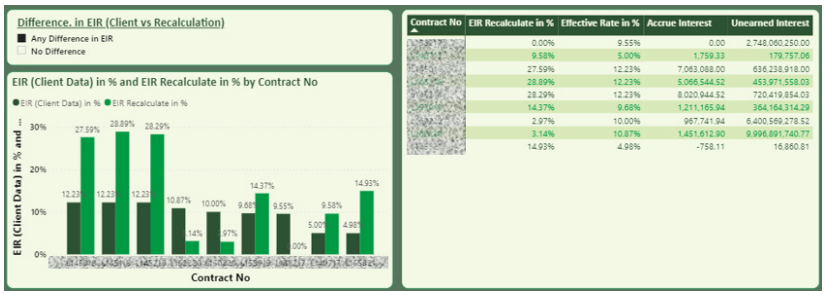


Figure 5: Example of the automatic recalculation of effective interest rates for multi-finance clients

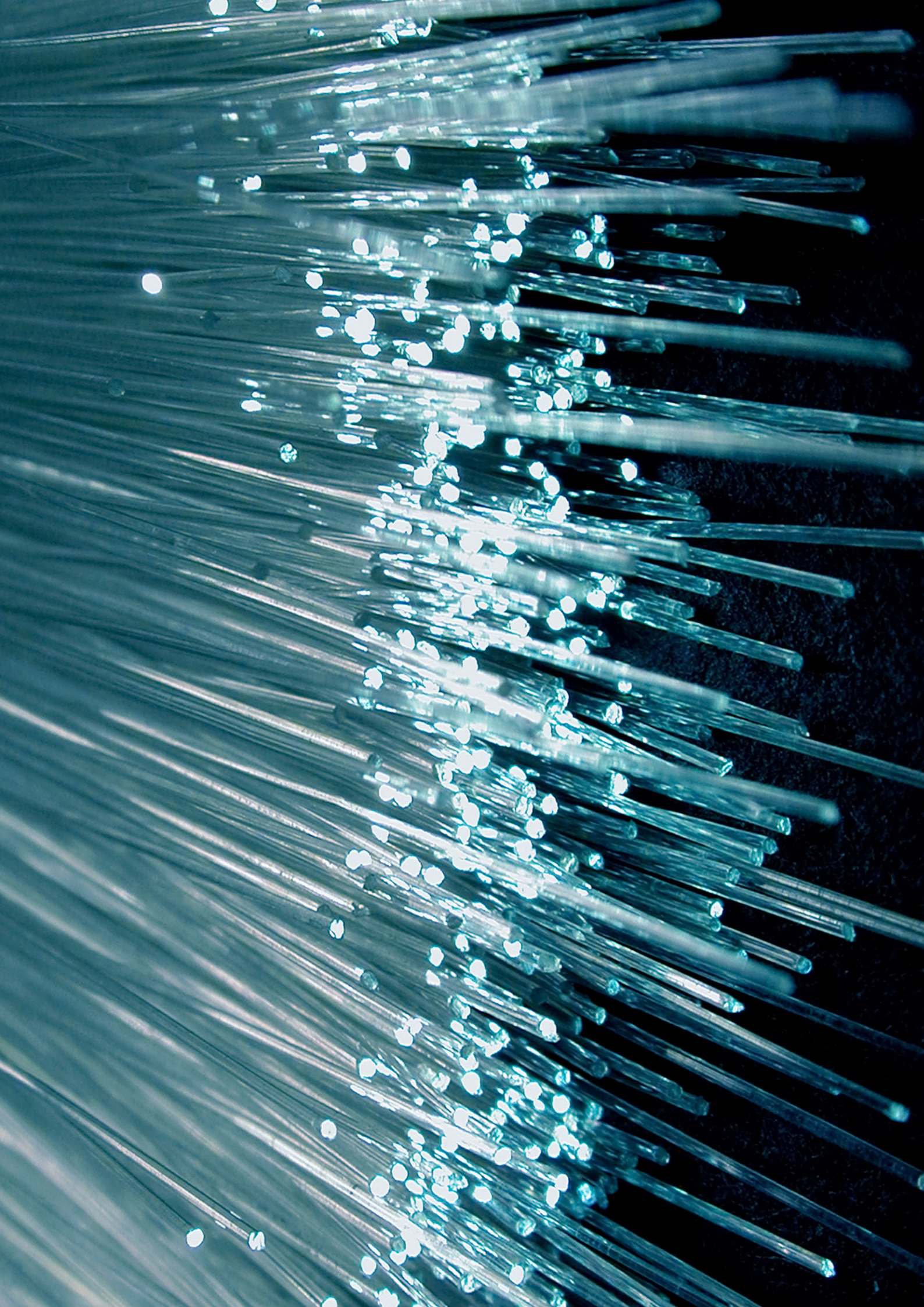


Towards the future of audit

Suffice to say, the field of audit is rapidly being revolutionised by the ongoing, seismic shift towards the greater use of cutting-edge data analytics applications. This development is, in turn, also changing stakeholder expectations of what an audit can – or should – deliver. Indeed, while audits were perceived to be a mere regulatory requirement in the past, the immense potential of data analytics to unveil critical information on an organisation's risk and performance by virtue of undergoing an audit is now driving a complete rethink of the profession.

While some sceptics may be concerned that reliance on such advanced technologies could eventually result in the elimination of human auditors, we hold a contrary and more optimistic view. Technologies, in our opinion, are only an aid for the auditor – not unlike calculators used by mathematicians in their problem-solving process. Furthermore, many of the important skills and attributes of what makes a good auditor – assessment, analysis, and judgement – are highly human in nature, and cannot be fully replicated by technology. In fact, the more likely scenario is that as technologies take on a larger burden of the manual workload, the role of auditors will only grow in importance as stakeholders rely on them to exercise their core analytical competencies in interpreting the outputs generated by machines.

All things considered, the mandate of an audit is now rapidly evolving beyond its traditional domain of regulatory compliance, and moving into a higher-order and more value-focused strategic domain. Through the appropriate use of data analytics – applied in combination with emerging technologies such as artificial intelligence and machine learning – auditors of the future are likely to take on increasingly pivotal roles not only in identifying red flags for fraudulent activities and other key business risks, but also in generating meaningful insights on the significant drivers impacting the performance of a business and, ultimately, its bottomline.



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