CPAB eXchange

ENHANCING AUDIT QUALITY THROUGH DATA ANALYTICS

New and emerging technologies, including data analytics, are providing opportunities for auditors to improve the effectiveness and efficiency and overall quality of the audit.

We expect to see a significant increase of data analytics usage over the next few years as data analytics capabilities continue to evolve. We support continued innovation in this area to improve audit quality.

Below are our initial observations of the use of data analytics in the audit based on discussions with firm leadership, review of methodology and guidance materials and inspection of audit files where data analytics were used in 2018.

There are several potential opportunities to improve audit quality using data analytics:

RISK ASSESSMENT

Improve the auditor's understanding of the business and ability to identify higher risk accounts or transactions that require additional effort during the audit.

EXECUTION OF THE AUDIT

Auditors can perform interrogation and testing on a larger volume of transactions, reducing sampling risk, and increasing the ability to identify potential misstatements.

COMMUNICATION

The auditor can communicate audit findings and insights more effectively to audit committees and reporting issuer management.

We encourage all key stakeholders to consider the opportunities and challenges of implementing data analytics in the audit and the impact on audit quality.

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TYPES OF DATA ANALYTICS PROCEDURES USED IN PRACTICE

To date, the Canadian Public Accountability Board (CPAB) has observed that data analytics use broadly falls into three categories:

1. 'Matching' of accounts and transactions:

The level of sophistication varied from very simple scenarios to more sophisticated routines as illustrated in the following examples:

Less complex

More complex

Example 1

Matching debits and credits of journal entries and comparing to what would be expected under the financial reporting framework for that industry.

For a manufacturing company, a debit to receivables and a credit to revenue would be expected, but a debit to accounts payable and a credit to revenue would be an exception.

Example 2

Matching 100 per cent of a transaction stream. Using a common identifier (e.g. the transaction ID), the data analytics tool can reperform the three-way match process by automatically matching the shipping document to the invoice to the cash received and flag any exceptions (in quantities and/or dollars).

2. Data visualization:

Data visualization is plotting data to tell a story. It typically includes bar/pie charts and scatter plots to graphically depict the data set. Data visualizations are often used as a compelling risk assessment procedure and to enhance audit committee communications.

Take the example of a retail entity with several physical stores located across the country:
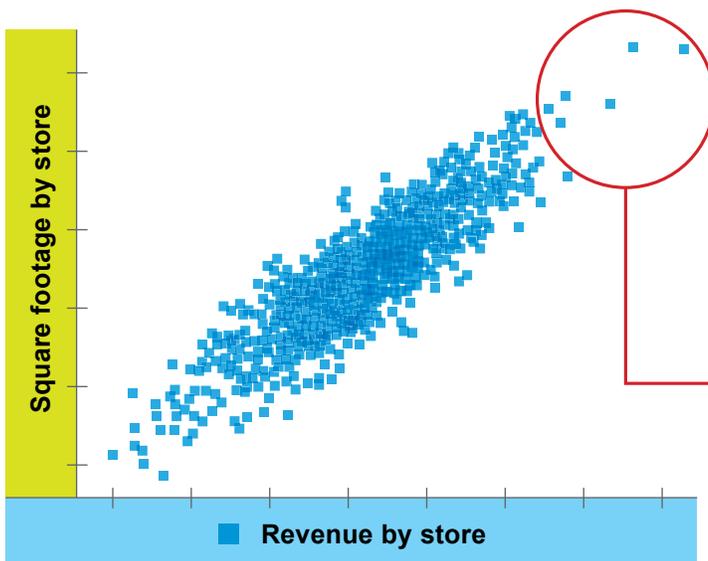
Based on the team's understanding of the entity, most stores are expected to have consistent performance of revenues by square footage. Therefore, in the scatterplot diagram, they would expect that the majority of the stores will be grouped together.

The engagement team can use this data analytic to visually identify exceptions (identified in red) and design audit procedures as appropriate.

3. Automating traditionally manual procedures:

Data analytic tools were also used to automate audit procedures over routine processes (e.g. sales and purchases) that would otherwise be performed manually. For example, reperforming the credit limit analysis and the accounts receivable aging analysis. By automating otherwise manual routine audit procedures, audit teams can focus on other significant risk areas where professional judgement is required.

BARRIERS TO WIDESPREAD IMPLEMENTATION

Based on our discussions with audit firms, there are several possible barriers to widespread use of data analytics. The most significant barriers relate to the complexity of client information systems and the investment of time required by client management and audit staff to support the extraction of data.

Auditors have always requested data as part of their audit procedures. However, the sheer volume of data in a data analytics environment can make it challenging for the auditor to extract a complete and reliable set of data.

In addition, the data must be in a format that can be used with their data analytics tools. The format of the data extracted varies according to the enterprise resource planning (ERP) systems used by reporting issuers ranging from in-house developed legacy systems to complex ERP systems (e.g. SAP). We expect that audit firms will need to continue to develop tools to extract information from a large variety of ERP systems to support continued growth in the use of data analytics.

Successful extraction and formatting of data will also require continued collaboration with reporting issuer management and the auditors to ensure the necessary information is provided in the required format.

INSPECTION FINDINGS

CPAB's 2018 inspection findings related to data analytics fall into the following major categories:

- Audit procedures to verify data integrity
- Evaluation of results

Audit procedures to verify data integrity

We identified instances where the engagement team did not perform sufficient procedures to verify the completeness and accuracy of the data used in their audit testing. Just as in the traditional audit, engagement teams are responsible for auditing the completeness and accuracy of the data used in the audit. as well as auditing the data attributes being relied on (e.g. dates, quantities, etc.). To respond to data integrity risks, auditors need to fully understand the data inputs and how the tool is using that data in its routine.

CPAB noted that engagement teams that were supported by a data analytics coach who had specialized in-depth training on the use of the data analytics tools and the supporting methodology had more effectively taken steps to ensure the integrity and completeness of the data used in their audits.

Evaluation of results

While data analytics often reduces sampling risk, it creates new challenges as a data analytic procedure can result in hundreds or even thousands of exceptions. An exception, often referred to as an outlier, can be defined as a result outside of the auditor's expectation, but is not automatically considered an error or misstatement.

Auditors must develop an approach to investigating exceptions / outliers to determine whether they are in fact misstatements. This can become increasingly challenging where the number of exceptions increases (sometimes into the thousands).

In our inspections we noted instances where the engagement team did not adequately investigate the nature of outliers identified from their data analytics techniques or provide an explanation of why this investigation was not necessary. Any results not meeting the engagement team's expectations need to be investigated to ensure these do not represent misstatements.

Again, CPAB noted that where a data analytics coach was involved in assisting the engagement team, this resulted in a more effective evaluation of exceptions / outliners.

> **EMERGING RISK**
> As audit firms increase their use of data analytics, they are obtaining larger data sets across a large number of reporting issuers. Firms must protect the confidentiality and privacy of all the data obtained and retained by the firm.

WHAT AUDIT COMMITTEES SHOULD CONSIDER

1. How does data analytics improve the effectiveness, efficiency and overall quality of the audit?

2. Have there been any challenges in obtaining data in a usable format? Has the auditor received appropriate support from the management team to enable the use of data analytics in the audit? Were there any data analytics routines the auditor planned to perform but was unable to do so?

3. How does the audit team ensure it has the adequate knowledge and skillset to perform the planned data analytics routines and evaluate their results?

4. Did any data analytic identify specific higher risks of material misstatement or actual material misstatements of the financial statements?

5. How does the auditor store and handle our data? What data is retained and for how long is it retained? What steps are taken to ensure the security, confidentiality, and privacy of data?

WHERE DO WE GO FROM HERE?

The use of data analytics in the audit will continue to increase across Canada making this a critical area of focus for regulators, auditors, audit committees and management. We encourage all key stakeholders to consider these challenges as they implement data analytics as part of the audit process.

CPAB expects to issue further communications on this topic as data analytics capabilities evolve and we see more instances of data analytics use in our inspections.

Learn More

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