Beyond Excel

How to Use Data Analytics for Internal Audit in the 21st Century

IDEA

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The Capabilities and Limits of Spreadsheets

Excel is a powerful tool in the world of finance.

As a ubiquitous, simple-to-use, digital spreadsheet tool, Excel has obvious benefits for accounting and auditing. The program can perform many kinds of analytical tests including:

- Horizontal and vertical analytics.
- Ratio analysis.
- Regression analysis.
- Statistics, stratification, aging and much more.

"As advanced data analytics have become fundamental to modern accounting and auditing practices, Excel has been found wanting."

Likewise, Excel can also perform some types of data analysis, such as:

- Append and merge.
- Cross tabulate and pivot table.
- Detect duplicates.
- Extract and filter.
- Join and relate.
- Sample, sort, summarize and subtotal.

However, as advanced data analytics have become fundamental to modern accounting and auditing practice, Excel has been found wanting.

In this paper, we look at:

- The limitations of an otherwise useful and universal tool.
- The problems associated with the status quo.
- How to go beyond Excel for real and effective data analytics.

It's important to note that, while we use "Excel" as shorthand in this document, we effectively mean all of the conventional spreadsheet tools widely available, including Google Sheets, Numbers, Apache OpenOffice, LibreOffice, and many other Excel alternatives.

The Extents of Excel: Data Analytics Exposes the Limits of Spreadsheets

With modern data analytics, auditors sort through vast sums of linked and interrelated data sets to reveal transactions that don't fit the normal patterns Excel might be able to find. These transactions can include everything from material misstatements to indications of fraud.

By leveraging data analytics tools, auditors are able to add value for their clients and provide insight on whether actions should be taken in light of findings, and what those actions should look like.

For example, data analytics brings the following capabilities to the table-capabilities Excel can't deliver:

- **Full dataset testing:** data analytics software is capable of examining and testing full data sets, not just a sampling of data from traditional spreadsheets. This full-set analysis allows the most thorough audits and eliminates the possibility of error due to small sample size or missed transactions.

- **Data from multiple sources:** Data analytics software also lets you easily extract and integrate data from multiple sources, allowing for quick, efficient analyses and higher quality insights, providing more value to clients.

- **Automated testing:** Data analytics enables automated testing with audit workflows and providing useful reports for future audits. This not only provides enhanced reliability of results, but also reduces cost by eliminating the need for long, costly audits thanks to on-gong monitoring. This can be particularly attractive to clients who require deep analysis but lack the time and money to do it. Automated data analytics tools allow auditors to dig deeper into data without using significantly more staff time.

LEARN MORE: DATA ANALYTICS FOR FRAUD: How is traditional fraud detection like looking for a needle in a haystack? Learn how data analytics hypercharge fraud detection.

Data Analytics a Must Have for Today's Auditors

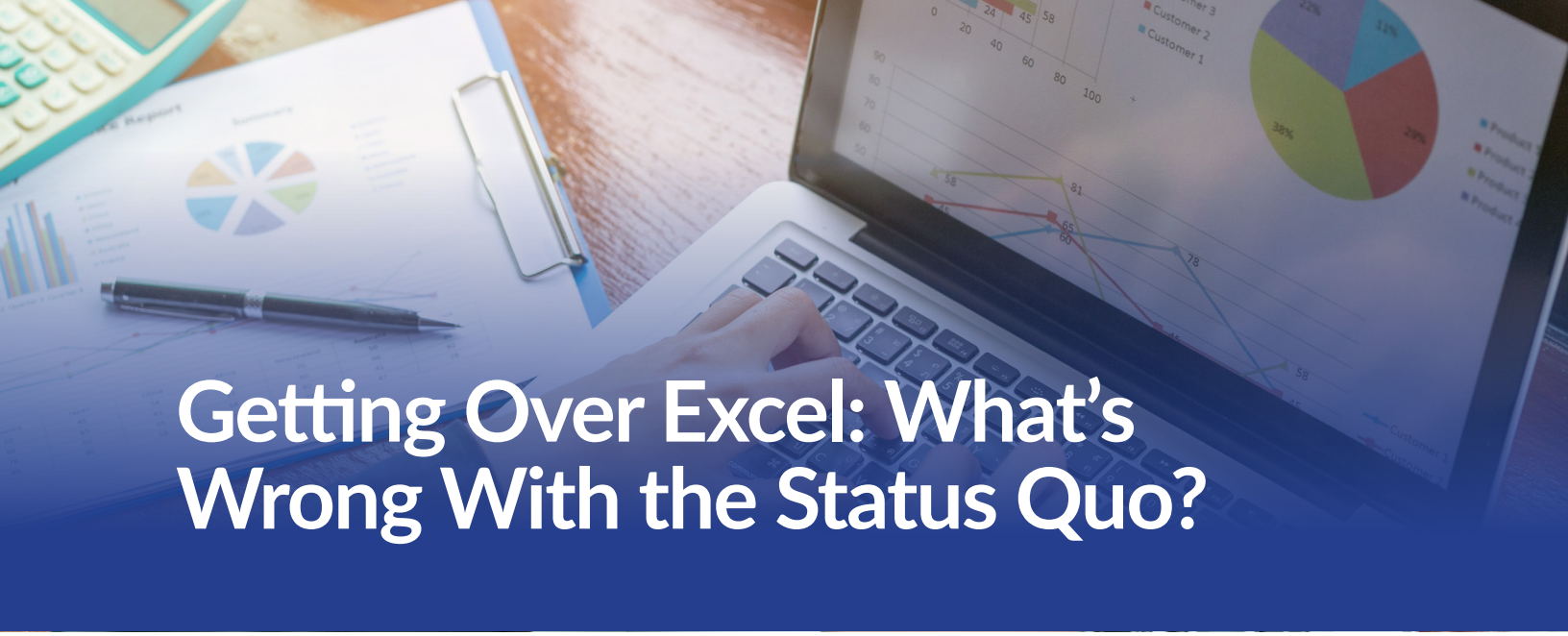
Likewise, analytics software also leverages artificial intelligence (AI) and machine learning (ML) to quickly and accurately examine all transactions and balance entries in a data set. The abilities of AI and ML to provide tailored, granular results, means not only the most accurate results, but also the possibility of revisiting areas of concern that may have been flagged in an initial analysis.

Data analytics is no longer a 'nice to have'

-IIA Financial Services and Public Sector Knowledge Brief

The IIA's recent Financial Services and Public Sector Knowledge Brief declared data analytics is no longer a "nice to have," but is now an essential part of auditing's digital transformation, providing executives and stakeholders with deeper insights into risks and opportunities.

Given this reality, whatever else its positive attributes, **Excel is fundamentally ill-equipped to handle the vast amounts of data involved in modern data analytics.** It is not the solution auditors need to use data analytics effectively or provide the kind of solutions needed for today's businesses.



Getting Over Excel: What's Wrong With the Status Quo?

Without question, we live in the era of Big Data. From Fortune 500 companies to agile start-ups, data and the ability to learn from it are increasingly the keys to success in the modern business world. And that's why the ability to leverage data analytics, while once considered just a nice-to-have, is today regarded as an essential part of an advanced, modern internal audit.

And between Big Data, cybersecurity risks, and AI, today's audit's complex needs begin to show the limitations of conventional software, like Excel.

Excel's shortcomings manifest when you're working with large data sets and on large-scale projects, and when advanced audit and data analytics is required.

Here are four key drawbacks to using Excel for data analytics.

1. Crucial data gets lost in the clutter

Excel presents all raw data at once, making it difficult to quickly sort out the essential data from what is less critical. Excel spreadsheets lack the data visualization tools that would make it easier to draw attention to and present significant sections of the data sets.

Excel caps the number of rows at around **1 million**, and columns at about **16,000.** This is ironically, a drawback in two ways.

These rows and columns are too many for any individual or group of individuals to manage and interpret usefully. They also lack the kind of relationship to the data contained to make the figures useful for real data analytics.

With a large volume of data represented on a single spreadsheet, analysis becomes difficult. With flawed analysis comes faulty interpretations of the data, leading to poor decision-making and costly mistakes.

It's remarkable any auditor would feel comfortable managing massive datasets with such fickle controls in a field so risk-averse.

2. Data loss

The danger with Excel spreadsheets is that they are prone to loss caused by human error. One errant keystroke can delete whole rows or whole columns of data, or (more perniciously) delete one cell that throws the calculations of full sheets out of whack, necessitating hours of work to see what's gone wrong.

Excel spreadsheets are in danger of this kind of error accumulation every time they are emailed to colleagues or accessed on a shared drive by team members. It can be impossible to know what changes have been made by the many hands that had access to the workbook, which can cause untold hours of work to try and untangle problems when errors have been introduced.

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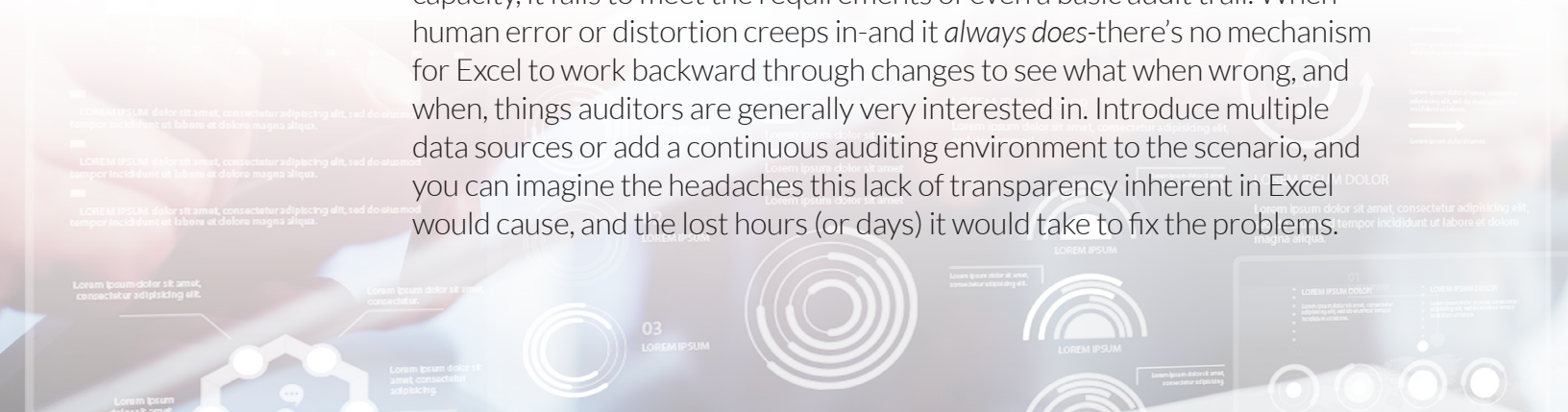
3. Data distortion and lack of audit trail

As with data loss, the figures in an Excel spreadsheet are vulnerable to distortion based on user inputs of various kinds.

Most Excel users will, at one time or another, use the program to create graphs, pie charts, and tables to help represent their data more visually and intuitively. However, even these attempts at visualization can distort data to a great extent.

Updating or upgrading the spreadsheet (such as in the transition from .xls to .xlsx formats) can result in the loss of huge amounts of historical data. Such losses make data analysis and comparisons difficult, which in turn makes it hard to correctly identify trends. A bad copy-and-paste, a flawed formula, or input errors can corrupt or distort the whole Excel workbooks' output.

And because Excel lacks version control or any kind of record-keeping capacity, it fails to meet the requirements of even a basic audit trail. When human error or distortion creeps in-and it *always does*-there's no mechanism for Excel to work backward through changes to see what when wrong, and when, things auditors are generally very interested in. Introduce multiple data sources or add a continuous auditing environment to the scenario, and you can imagine the headaches this lack of transparency inherent in Excel would cause, and the lost hours (or days) it would take to fix the problems.



4. Excel lacks data analytics libraries

One of Excel's chief failures is that it can't take advantage of the incredible possibilities in audit data analytics. While some basic data analytics tests can be run in Excel, these are time-consuming, complicated pursuits requiring advanced user skills to program and manipulate intricate macros or multiple pivot tables.

The beauty of dedicated analytics software is that it can help even relatively inexperienced users navigate a data analysis process from start to finish.

In contrast, dedicated data analytics tools-which often draw their baseline data from Excel spreadsheets-can sort and parse data with ease so that users can actually draw out the incredible insights presented within.

The beauty of dedicated analytics software is that it can help even relatively inexperienced users navigate a data analysis process from start to finish. Predefined routine tests can help users duplicate, join, or stratify data, or detect security issues in an SAP implementation, for example, all with no coding required.

And dedicated audit data analytics software also minimizes human error. It protects data in a centralized, secure system where the possibility of keystroke mistakes or emailing the wrong file version is entirely eliminated.

Getting Over Excel: How to Go Beyond Excel for Data Analytics Internal Audit

Professional-grade data analytics tools represent a step up from Excel or similar spreadsheet programs, offering capabilities that make audits more efficient and effective.

The good news is that with today's robust offerings in data analytics tools, making the move from an Excel-based workflow has never been easier.

With out-of-the-box solutions, you can quickly and easily import and combine multiple data sets; join tables together and perform analysis with multiple tables; import a variety of common data types; leverage powerful data visualization and back-end reporting functionality built right into the software; and automate and dynamically run tasks. And unlike Excel, dedicated data analytics tools don't touch the underlying data they draw from and allow auditors to track every change made within the platform.

Making the Switch

So, what should you look for when considering your switch to a data analytics solution? Here are six key features to keep in mind.

1. Look for a low-training/no-training solution

One reason to move away from Excel is the difficulty that many users have with the program without extensive training or certification. Leveraging the program's more advanced functionality requires knowledge of complex macros and pivot tables. When moving to a dedicated data analytics solution, make sure that it is genuinely user-friendly and intuitive, requiring little or no training to get people up and running. If your solution is complicated, potential users will be intimidated to use it, and your organization will never gain the full benefit of the software.

2. Easy implementation

Excel does have the advantage of being ubiquitous. It's on every computer in every business everywhere. When you need it it's just a click away, no waiting. So when considering a dedicated data analytics solution, make sure that it will be easy to install and roll out throughout your company. No one wants a long delay or a lot of downtime in order to implement a new solution. It's bad for your business, and it's bad for your clients. Favor a solution that offers easy implementation and your users won't resist using a new software.

3. Responsive support/helpdesk

Having step-by-step assistance available when you need it is hugely important. Does your solution come equipped with a wide range of help features, tutorials, instructional videos, and reminders? When you have questions that go beyond these on-board help features, can you reach out and quickly get guidance from a help desk?

4. Robust import functionality (and importing PDFs, link to recent blog)

Excel isn't designed to handle large data sets, automate analysis, or import data from a variety of sources-all functionalities that auditors and other financial professionals regularly need. And when data is pulled from multiple sources it often requires tedious and time-consuming clean up. All of this is a recipe for error to creep into the data set.

So, one of the chief benefits of a dedicated data analytics tool is its ability to pull data from multiple data streams and a variety of formats and quickly and seamlessly knit them together for analysis without the need for clean-up.

Make sure your potential analytics solution can import text files, MS Access and Excel, CSV, SAP, Oracle, SQL, and especially PDFs.

5. Visualization/Reporting

We've talked about the growing importance of data visualization to the audit process, and how it allows project managers and business owners to gain crucial insights and leverage data to make better business decisions. Does your potential solution include state-of-the-art, dynamic, and effective data visualization as a built-in feature? What is the report functionality like?

Unlike Excel, dedicated data visualization tools represent data in a detailed, consistent, accurate manner-another benefit traditional spreadsheet software can't provide.

6. Tools for unlimited functionality

The best tools are the ones that grow with you, and that meet the specific needs of your business. How does your potential data analytics solution ensure unlimited functionality for your unique set of needs?

This is what we had in mind when we designed IDEA Lab, an innovation hub for IDEA-related resources whose goal is to make accountant's lives easier and their work faster. Why get a whole new tool when you can just make the one you have do the new thing you want?

With IDEA Lab, auditors can access, download, comment on, and test working prototypes of IDEA-related resources, all from with your web browser and with no programming knowledge needed.

Create specific solutions and tools tailored to your business and then share them for use with the wider IDEA Lab community. With eight plug-ins currently, and more available in the coming months, IDEA Lab is your way to improve your day-to-day from right within a tool you already have.

To learn more about how IDEA can help you complete your audits quickly and effectively, click here.

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How CaseWare Can Help

If you're ready to make the move from Excel to a dedicated data analytics solution, and you want a secure, extensive, and efficient way to audit, CaseWare IDEA Data Analysis software is the professional data analysis tool for you.

With more than 400,000 users in 90 countries, CaseWare Analytics technologies are the industry standard for audit and finance professionals who want to use real data insights to create remarkable ROI and business improvement opportunities.