

Managing spreadsheet risk in the tax function



Spreadsheet technology continues to be a prevalent support tool for tax-planning and compliance activities. However, as these activities gain complexity and receive increased attention from numerous stakeholders, tax departments may need to refine their approach to spreadsheet management.

Deloitte hosted a [Dbriefs](#) webcast to explore the challenges and risks associated with end-user computing (EUC) technology, which included how tax departments can elevate use of spreadsheet technology for tax-planning, provision, and compliance activities by moving from ad hoc calculations and reports to a standard and governed analysis program. Presenters reviewed protocols for improving effectiveness and mitigating risks when it comes to data quality, version control, and complementary software. More than 3,000 participants shared their own views through responses to polling questions and posed during the webcast.

Tax departments' use of spreadsheets today

Spreadsheets have become an almost irreplaceable business tool for tax departments, offering flexibility and the ability to create ad hoc calculations that enable an array of analyses. Spreadsheets are prevalent throughout the tax cycle; tax functions use them to enter and process financial data and transactions and may support virtually every document with regulatory and compliance implications. The table below highlights some of the tax processes, as well as finance organization processes, that commonly rely on spreadsheets.

Many tax teams do not just use spreadsheets to compile and consolidate data, but also to apply complicated rules to produce the necessary results.

Moreover, tax spreadsheets can be unusually complex due to the calculations embedded within them and the numerous other spreadsheets and applications that they may be linked to. Many tax teams do not just use spreadsheets to compile and consolidate data, but also to apply complicated rules to produce the necessary results.

Provision	Compliance	Other tax processes	Finance organization
<ul style="list-style-type: none"> Consolidation, and reporting Foreign data collection Subprocesses, such as ASC740-30 (formerly APB 23), and ASC718-40 (formerly FAS 123R) 	<ul style="list-style-type: none"> Schedule Ms Intercompany/transfer pricing Apportionment 	<ul style="list-style-type: none"> Uncertain tax positions Planning Audit support 	<ul style="list-style-type: none"> Inventory tracking and valuation Calculation of reserve balances and other liabilities Internal and external financial reporting Financial consolidations Reconciliations Regulatory reporting

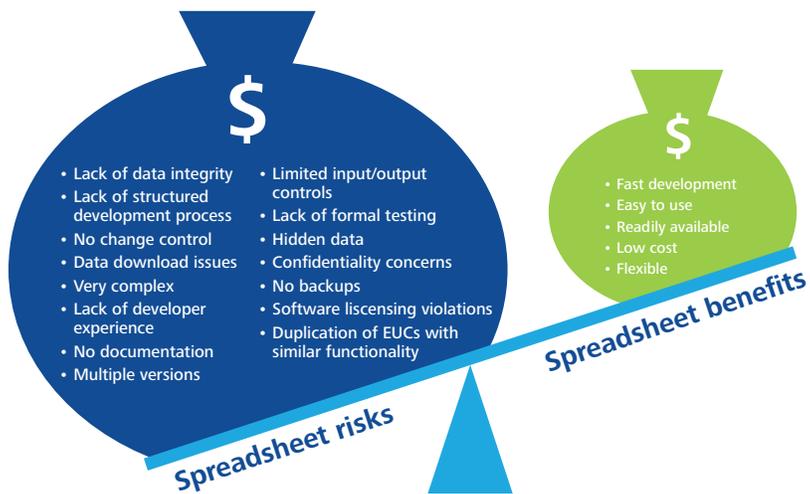


Exhibit 1: Spreadsheet risks and benefits

Spreadsheets do have important inherent benefits—they allow users to perform functions and calculations on a timely basis without requiring IT expertise or the ability to work with complex data cubes (Exhibit 1). Those benefits, however, are countered by a number of significant risks, such as version control and lack of testing—particularly as spreadsheets become more advanced and complex.

Increasingly, though, spreadsheets are coming under the scrutiny of management, auditors, and regulators who expect to see better management and control over what have historically been mostly ad hoc calculations.

Examples of the challenges and risks with status quo

Active links

One particular issue is the use of active links between workbooks and other types of applications and databases. Workbook usage and updates over time may cause links between workbooks to break. This in turn forces users to spend time troubleshooting instead of checking the integrity of numbers from a tax perspective. Risk also increases when the links are external — especially to other uncontrolled sources, such as websites or other functions’ shared files or even someone’s local drive — and pull in data that is outside of the tax function’s control (i.e., created and managed by someone else). But avoiding the use of links can be problematic as well. It encourages copying and pasting data from other sources, creating more manual steps, and the inability to refresh required data through the process.

Reliance on massive, single-step formulas

Spreadsheets often start “simple” and as a business or the analysis becomes more complex, the calculation grows. Columns, rows, tabs, and calculations are added to make the analysis more complete, and the logic within the workbook or set of spreadsheets becomes more and more complicated — and more complicated to manage. This can result in long refresh times each time the model is updated. It also produces dependencies on those individuals who know how to use and update the spreadsheet. If a formula designer leaves the role, the result can be delays or inaccurate numbers due to lack of knowledge or proper rigor or controls around its use, not to mention potential “lost” hours for relearning model logic. Another issue can be the creation of “magic cells” by users who “know” the end result they need but can’t get the data flow to work as expected. These types of work-arounds can destroy the data integrity of the entire process. Finally, “one-user-per-workbook” restrictions also can create process bottlenecks, inefficient workarounds, and a vicious cycle of uncontrolled spreadsheet growth.

Loss of control of spreadsheet-based models

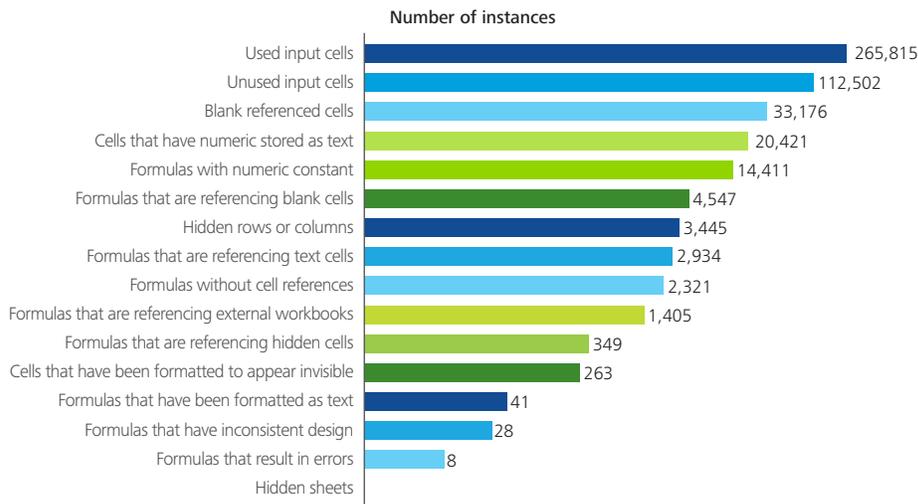
Complexity can slow the speed of calculations and model turnover. As the number of unique workbooks grows, users can lose track of a particular workbook’s purpose, why it calculates an adjustment a particular way, or what would happen if it is changed. Version control also can be an issue, as users mistakenly perform work on incorrect or outdated versions of workbooks or with outdated data.

The point here is not that we need to eliminate the use of spreadsheets; they play a necessary and valuable role, but they require a certain amount of caution. Through fraud, abuse, or, more commonly, errors, spreadsheets, and EUC applications can increase risk exposure and lead to financial or reputation losses, fines and penalties, legal challenges, job loss, and more.

Spreadsheet analytics and diagnostics

There are ways to mitigate risks in spreadsheet use. For example, server- or desktop-based tools and toolbar add-ons can perform spreadsheet integrity checks. Other tools integrate directly into spreadsheet applications. Automated workbook analysis software can analyze spreadsheets for specific risk criteria, such as external links, calculations that result in errors, inconsistent formulas, hidden rows/columns, and other known risk areas. Users also can leverage tools to fix existing errors, streamline workbook structure, or identify and lock cells that contain key formulas.

Exhibit 2: Sample output of a spreadsheet integrity check



Running a spreadsheet integrity check can provide a variety of results (sample output illustrated in Exhibit 2) — some that are informational and some that are true red flags. For example, the sample output highlights the number of formulas with “numeric constants.” In some cases, that numeric constant may be a valid part of the calculation; but in others cases, a user may have entered it to adjust the calculation to produce an expected result, without further examination as to why the data flow was not producing that result.

Another red flag may be the number of formulas referencing external workbooks — 1,405 in the example above. While this number may or may not be high, depending on the circumstances, what it does signal is the potential that some links may not update when a user refreshes a workbook. Another area that may justify a second look is “hidden sheets,” some of which can only be found by looking at the spreadsheet workbook code. Hidden sheets can be relevant in looking for fraud, although they also can be the result of honest mistakes. Other examples results that warrant further examination include “formulas with errors” or “inconsistent formulas” where for example a number has mistakenly been inserted into the middle of a row of formulas.

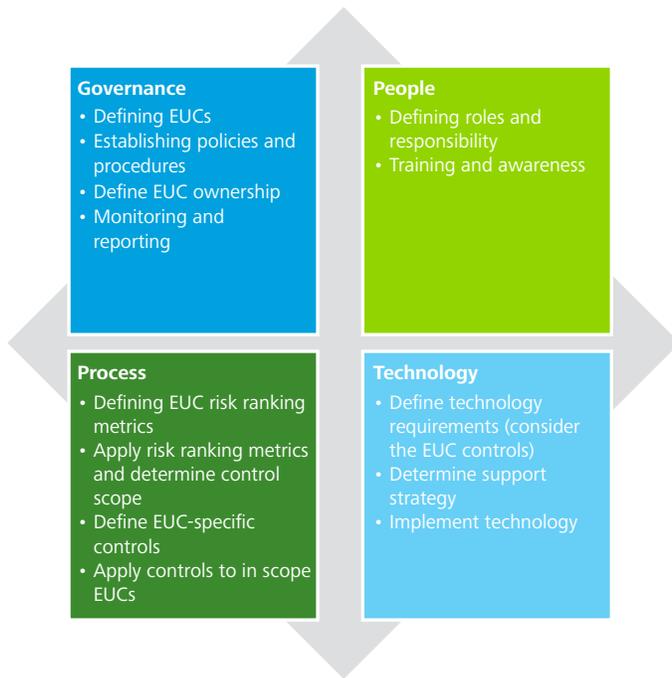
A decision tree analysis is a more specific type of analysis, often used to understand the origin of a spreadsheet and its content and to test assumptions and inputs. This analysis analyzes spreadsheet output cells (of those that contain formulas) and provides cell-level detail of each input cell for each formula — showing where information flows, how it gets there, and the formulas being used. Spreadsheet users can review consistency between calculation methodologies and check assumptions of calculation inputs.

A relationship diagram is another type of diagnostic tool that analyzes a workbook to show all workbooks on which it depends or from which it pulls information. Connections and dependencies arise between workbooks via external links. Users can validate data sources and workbook relationships, as well as the scope and size of spreadsheet models with multiple workbooks. This analysis also shows spreadsheets as a system of interrelated workbooks instead of isolated, stand-alone workbooks. Users can do a lot of this work by understanding the data sources, workbook relationships, and the scope and size of models.

Spreadsheet management programs

While spreadsheets may seem like a simple technology, comparatively speaking, they are very complex to control and manage. As a result, there is no one-size-fits-all solution for spreadsheet management. To effectively manage these risks for the enterprise, organizations should implement a holistic EUC management program which should consider the four traditional areas of governance, people, process, and technology (Exhibit 3).

Exhibit 3: Key controls for spreadsheet management



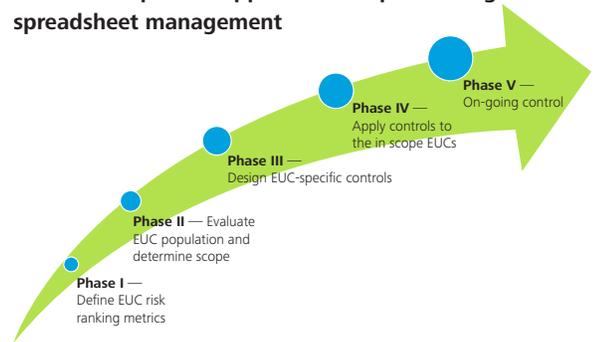
Governance is critical; without it, tools may just overcomplicate matters. Consider what would happen if you equip a bad carpenter with power tools! These steps can help in establishing an appropriate level of governance for spreadsheet management:

- Identify existing EUC applications, including spreadsheets, and risk rank them based on usage and risk.
- Develop policies and standards for use.
- Determine the structure of the EUC environment — is it centralized, decentralized, or a mix of the two? Many organizations have a mix, with a centralized group that can help administer, train, and explain the technology.
- Define key risk metrics and establish and implement reporting mechanisms.

The **people** dimension begins with understanding key stakeholders and gaining their buy-in. “Owners” may not be the people using the spreadsheets, but they will feel much more comfortable knowing that the process is

accurate. It is also important to assign key stakeholder roles within the program — a steering committee, business unit representatives, and user administrators. These are individuals who understand the risks and goals, how to use the tools, and how to track key metrics. Training and awareness are also important — but training should be tailored to stakeholder roles, and the timeline should be consistent with goals and not completed too early in the program.

Exhibit 4: A phased approach to implementing spreadsheet management



Given the complexity of spreadsheet management within the tax function, the **process** for introducing it must be thoughtful. Exhibit 4 outlines a phased approach to consider around spreadsheet management.

This approach begins with defining and gaining agreement on the risk ranking metrics to be included before determining which spreadsheets to include. This foundation is necessary for designing the right controls, which will vary by environment but may include backups, server protection, security, change management, version control, testing, and segregation of duties between spreadsheet creation and use. Various tools can facilitate application of those controls (Phase IV), providing functionality, such as tracking every cell, what’s changed, by whom, on what day, and why the change was made (via user notation). Finally, ongoing control involves training users, ensuring they understand the benefits, and monitoring use and results.

As noted, a variety of **technology** tools can facilitate spreadsheet management. A technical assessment is a good starting point for determining scope, infrastructure, security, and role design. Depending on the organization, it may be appropriate to have different tools for different groups and/or geographic areas. Throughout technology selection and implementation, other areas of the framework — governance, people, and process — should be considered and revised as appropriate. Finally, it goes without saying that the rollout process should be realistic and tailored to the needs of the organization.

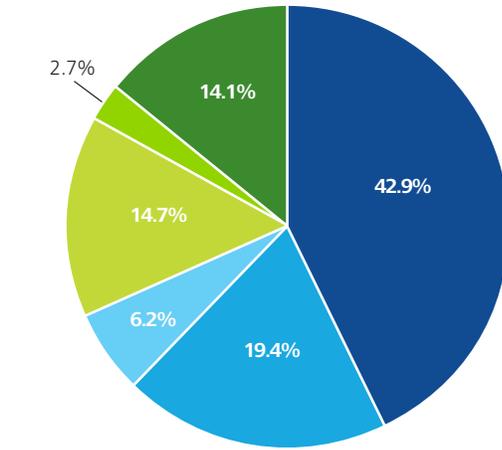
Tax executives' perspectives

Deloitte hosted a [Dbriefs](#) webcast to explore the challenges and risks associated with EUC technology, which includes spreadsheets, and how tax departments can elevate use of spreadsheet technology for tax planning, provision, and compliance activities by moving from ad hoc calculations and reports to a standard and governed analysis program. Presenters reviewed protocols for improving effectiveness and mitigating risks, including data quality, version control, and complementary software. More than 3,000 participants offered their own views through responses to polling questions posed during the webcast.

Even with growing automation, tax departments use spreadsheets across the spectrum of their responsibilities. When asked which one area most heavily utilizes spreadsheets, nearly half (43 percent) of webcast participants responded with tax provision, while 19 and 15 percent, respectively, cited the tax compliance and data collection processes. Only 6 percent chose tax basis, and just 3 percent transfer pricing.

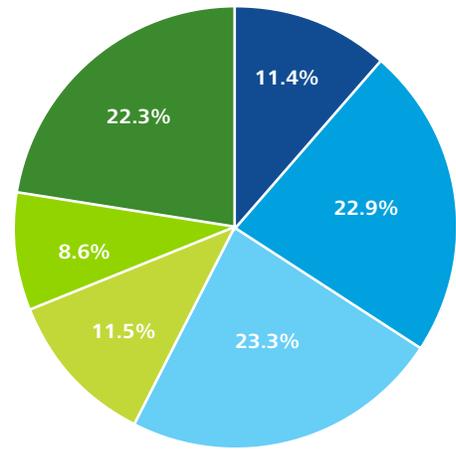
As spreadsheets grow in complexity along with the business, they can become more inefficient to use and administer — requiring more time to review formulas, update for new entities and adjustments, etc. In fact, 20 percent of webcast participants said their teams spend at least 30 percent of their time administering key spreadsheet models versus using them to calculate desired results. Nearly half (46 percent) estimated that their teams spend 10–30 percent of time on administration. Only 11 percent reported that their teams spend less than 10 percent of time on spreadsheet administration.

In which tax process does your company most heavily utilize spreadsheets?



- Tax Provision
- Tax Compliance
- Tax Basis
- Data Collection
- Transfer Pricing
- None of the above/not applicable

What percentage of your team's time is spent administering (i.e., rollover, updating for new entities and adjustments, and reviewing formulas) key spreadsheets models vs. using them to calculate the desired results?



- Less than 10%
- 10%–20%
- 20%–30%
- 30%–40%
- > 40%
- I don't know or not applicable

Source: Deloitte's Tax Operations Dbriefs webcast, "Managing Spreadsheet Risk in the Tax Function," held on December 12, 2013. Polling results presented herein are solely the thoughts and opinions of survey participants and are not necessarily representative of the total population.

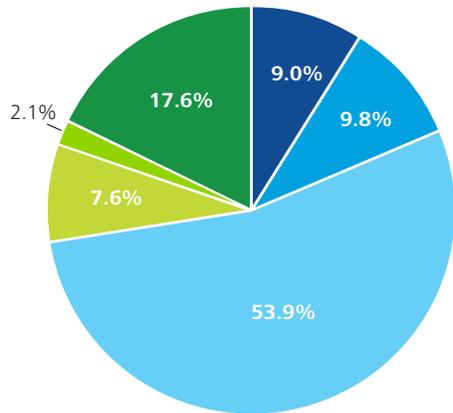


Building a better spreadsheet

Critical spreadsheets often start as solutions for one-off needs, with no foresight as to whether they will ever be used again. In many cases, all or much of the information resides in one tab, making it more difficult to analyze and manage a spreadsheet over time. Well-modeled, and layered spreadsheets can be much easier to manage. These use separate tabs for data, formulas, outputs, assumptions, documentation, etc. It may be difficult to convert a complex spreadsheet to this structure, but this is a good development practice to consider when looking ahead.

Various tools can help with analyzing and mitigating spreadsheet risk. More than half (53 percent) of webcast participants said the greatest benefit of analyzing spreadsheets would be increased reliability. About 10 percent felt the greatest benefit would come from reduced processing/loading times, while 9 percent said such analysis would help them sleep better at night, and 8 percent said the greatest benefit would come from knowledge of file population and purpose. Only 2 percent said this analysis would not provide any benefit.

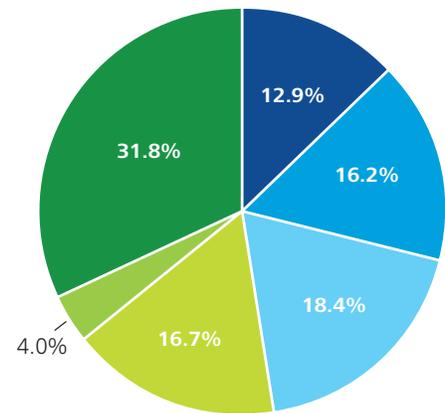
What would be the greatest benefit to your tax department from analyzing your spreadsheets using an analytics approach?



- Sleep better at night
- Reduced processing/loading times of spreadsheets
- Increased spreadsheet reliability
- Knowledge of file population and purpose
- I don't see any benefits
- Don't know/Unsure

When asked whether they could see their department supporting a major change in technology used to perform day-to-day tax operations, webcast participants offered disparate views. Sixteen percent said they would get a good majority on board, while 18 percent said support would be split. Another 17 percent said they would not expect great support, while 13 percent said they've been looking to do something like this. Only 4 percent said their organization would not support such change.

Could you see your tax department supporting a major change in technology used to perform day-to-day tax operations?



- We've been looking to do something like this
- We'd get a good majority on board
- Probably half would support, half would oppose
- We would not have great support
- Nobody wants this
- Don't know/not applicable

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