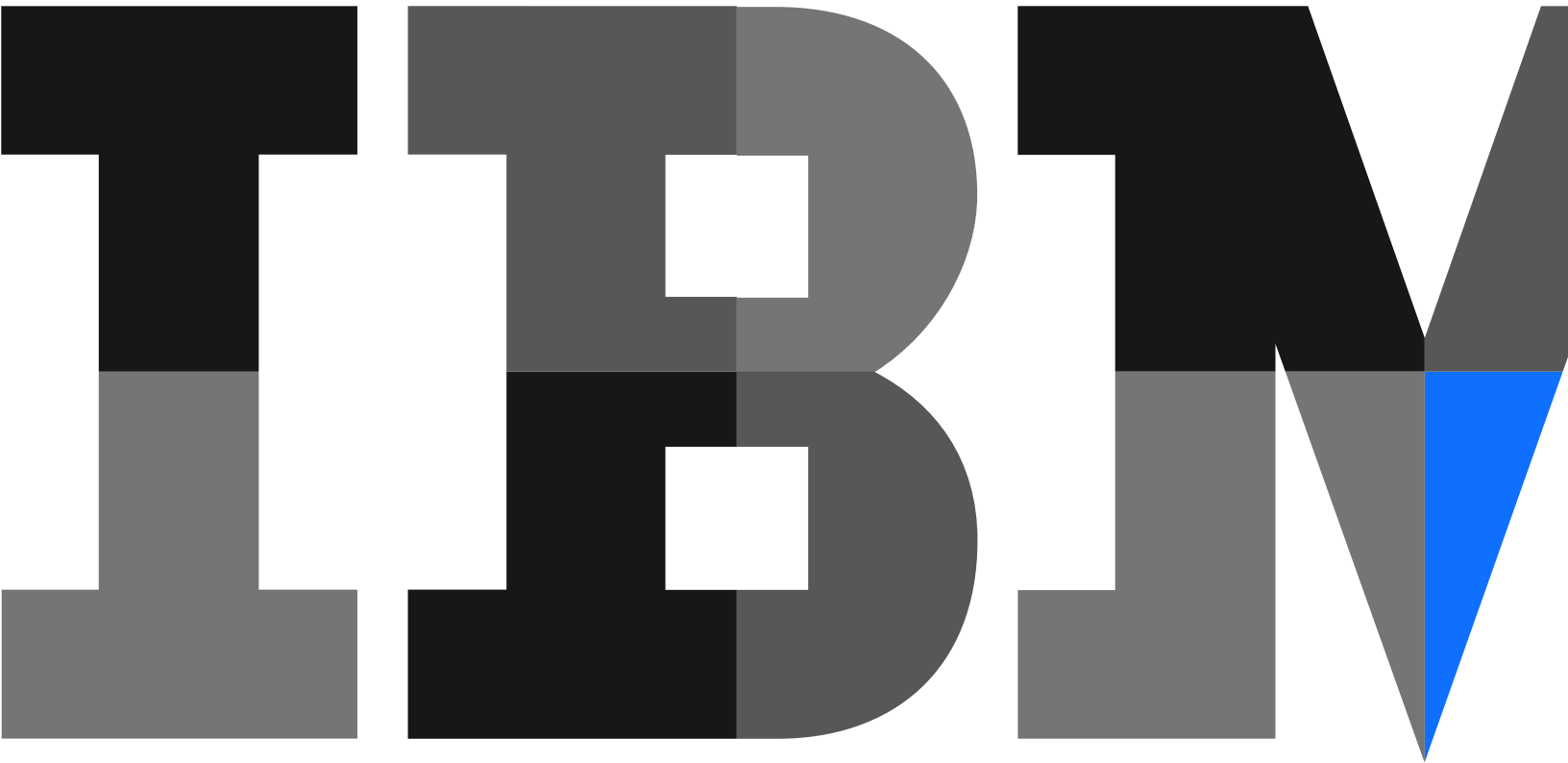


Spreadsheets for planning? A popular tool needs help.

*Mitigating the vulnerabilities while maximizing
the value of your Microsoft Excel spreadsheets*



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Overview

Companies large and small spend countless hours each year developing the detailed plans, budgets, forecasts and reports they need to drive their strategic decision-making and enterprise performance management processes. It’s critical that the information be timely and accurate, and that it can be easily updated as business conditions change. Most organizations rely on spreadsheets to build these plans and reports. However, although they’re a useful and popular personal productivity tool, spreadsheets are poorly suited for enterprise-scale planning and performance management. Errors are common. And the larger the spreadsheet, the greater the chance for a small error to be magnified, potentially exposing the organization to significant risk.

Spreadsheet-based planning: A “rough road” still plagued with potholes

A few years back, in a white paper titled “Spreadsheet Planning: Rough Road Ahead,” we outlined some of the causes and consequences of spreadsheet errors. While spreadsheet technology has improved over the years, serious problems persist, especially for those who rely primarily on spreadsheets for large-scale planning and analysis.

That white paper highlighted examples of the serious risks of spreadsheet errors. Sad to say, the list of newsworthy episodes continues to grow. Three recent examples illustrate the ongoing hazards of reliance on spreadsheets.

- In the spring of 2018, a major liquor and wine retailer in the UK lost 60 percent of its market value – £500 million – in a matter of weeks, due in part to an “arithmetic error” in a spreadsheet. The Times of London commented, “Not for the first time, human error with spreadsheets has led to disaster.”¹
- In early 2019, a large Canadian firm in the emerging legal cannabis industry cited “spreadsheet error” as a cause of under-reporting earnings. The company’s news release said “The correction was made due to a formula error in the spreadsheet supporting the year-to-date adjusted EBITDA loss calculation.”²
- In May of 2018, a large number of young doctors in the UK “had job offers rescinded following an error in the administrative process.” What happened? “A spreadsheet error was made in transferring data from one system to another.” Besides embarrassing the organization, the situation “caused ‘extreme anxiety’ for those who have made life choices based upon these offers, including arranging moves and putting deposits on new homes.”³

When used for enterprise performance management, spreadsheets and user errors can cast serious doubt on the integrity of strategic plans. They make plans and reports difficult to maintain and often inhibit – rather than facilitate – a collaborative, enterprise-wide planning process. And, as business plans and analyses become larger and more complex, the inadequacy of spreadsheet-based systems is only magnified.

Most common hazardous spreadsheet errors

Just how common are spreadsheet errors? A study cited in Marketwatch found that an alarming 88 percent of spreadsheets include some type of error.⁴ According to experts and academics who have researched spreadsheet effectiveness, three primary types of error typically occur in spreadsheet models.

- ! The first is mechanical error, which arises from mistakes in keying in data, cutting and pasting, or other simple manual operations. While a mechanical error may at first appear minor, incorrectly entered data can affect the integrity of an entire model. Furthermore, planning models tend to grow in size and complexity as available computing power increases. As the models grow, the errors created within them increase in both volume and severity.
- ! The second type of error is logic error, where an inappropriate algorithm is chosen or inapt formulas are created to implement the algorithm. The resulting flawed calculations affect not only the individual worksheet where the error appears, but the entire model, as well.
- ! The third, and one of the most common types of error, is the error of omission, where critical components are left out of a model entirely. Errors of omission, of course, are very hard to spot. As a user labors through multiple worksheets in a complex plan, the likelihood is great that a critical item will simply not be inserted and its absence will not be noticed.

It's important to note that spreadsheet errors persist even among conscientious, well-trained users and that "power users" are not immune. In fact, one study compared "undergraduate business students, MBA students with little spreadsheet developing experience, and MBA students with more than 250 hours of spreadsheet development experience. Their CERs [cell error rates] were very similar."⁵ Researchers realized that spreadsheet error is not the fault of user carelessness. It's simply a fact of life with any manual activity.

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Whether a given error is one of mechanics, logic or omission, the result will be the same: a flawed model and inaccurate calculations, hence an inaccurate or ineffective plan, forecast or report. While many large corporate finance departments have adopted dedicated enterprise planning solutions, at the department or line-of-business level, where many of the most important daily decisions are made, the spreadsheet is still the default planning tool.

Five common drawbacks to spreadsheets as planning tools

Aside from specific problems related to errors, spreadsheets present other limitations and drawbacks when organizations try to use them in large-scale enterprise performance management processes. Here are five of the most serious issues with using the spreadsheet as a planning tool.

1 – No standardization in the planning process

Spreadsheets, by design, are ad-hoc and individual. Email substitutes for systematic workflow. And without a guided, standard process, time is often wasted in "reinventing the wheel" and waiting for others to contribute and review.

Spreadsheets cannot track the progress of data contributors—or even whether contributors have begun work at all. It is a laborious task for managers to check on

the status of individual contributions and ensure they are submitted in a timely manner. Broader participation – which should be desirable – increases the difficulty of tracking that progress. The end result is a process that is limited by the pace of the slowest participant.

2 – Lack of data integrity and transparency

Anyone who has experienced a spreadsheet-based planning process has had conversations that begin with questions like, "How did you get this number? Where did it come from? Why is it different from mine?" Disconnected spreadsheets offer little in the way of data security or an audit trail to identify when, where or why changes were made, all of which leads to multiple versions of the truth. The source of the discrepancies often remains a mystery. Consequently, confidence in the numbers is undermined.

Spreadsheet-based planning processes are notorious for poor version control. It's difficult to know when or if participants are using the most recent version of a given plan. Poor version control can result in a consolidated plan based upon inaccurate or incomplete data or—owing to a mismatch of model structures—an inability to consolidate at all.

3 – Lack of collaboration

Successful enterprise planning depends to a large extent on high levels of collaboration and employee participation. Ideally, the greater the cross-enterprise input, the greater the accuracy and insight delivered in the plan. But spreadsheets tend to inhibit collaboration and participation. Due to error frequency and deployment difficulties, spreadsheet-based planning engenders a constrained, centralized process that represents only a small part of the organization. In addition, spreadsheets are typically created and propagated by finance departments, who – not surprisingly – tend to use concepts and terms that are familiar to themselves, but often unfamiliar to those at the department or line-of-business level. As a result, collaboration and participation are further inhibited.

4 – Speed is not a spreadsheet's strong suit

The business world is moving faster all the time. And to drive fast decision-making in this competitive environment

you need to access and analyze large volumes of data and get answers quickly. But when a spreadsheet's single data file is too large, it can make the program run very slowly. Spreadsheets are simply poor at dealing with large data volumes and merging multiple files. So, users can end up spending more time on data collection and verification than they do on analysis.

A spreadsheet-based planning and analysis process does not allow organizations to alter plans, reforecast, or modify budgets in real time. Making changes in a large, complex spreadsheet requires both an inordinate amount of time and great care, since it isn't always clear what changes may be needed or where. The effort required to consolidate hundreds (or thousands!) of spreadsheets can inhibit quick reaction to changes in markets or the actions of competitors.

Consider the modest addition of an expense item to a typical business plan. Two options present themselves. The first option is to manually navigate through the entire plan with its numerous workbooks, worksheets, and rows and columns, then insert a new row or column, and finally enter the desired data or calculation. The second option is to write a macro. But macro creation requires programming skills not often found outside IT departments. After the macro is written, tested, de-bugged, and run, the entire model must be reviewed manually to ensure that the macro has achieved the desired result. If it hasn't, tedious reworking is required. The time needed to create, test and debug the macro and then proof the model can be even greater than the time needed to insert the item manually in the first place. So, when conditions demand rapid reaction, real-time information is lacking and decision-makers may be forced to rely on an educated guess or "gut-level" hunch.

5 – Aggregation and application maintenance

Even if individual spreadsheets are error-free, the process of aggregating inputs from multiple users is a major undertaking that can carry on for weeks. A single person or task group has to collect the numerous spreadsheets and consolidate them into a single version, trying to maintain

files that may be linked together. If submitted models are not identical, the data will not consolidate correctly. And, of course, aggregation difficulties increase with the number of spreadsheet contributors.

The two-dimensional, row-and-column format of spreadsheets highlights a further shortcoming, which is the near impossibility of using spreadsheets for multidimensional analysis. For example, when business users want to analyze profitability by product, customer, geography, sales channel or other variable, even linked spreadsheets and the most sophisticated macros are rarely up to the task. When one figure changes, you typically don't know whether that change has properly percolated through the spreadsheet model.

Spreadsheet-based planning reinvented: IBM Planning Analytics for Microsoft Excel

All these problems notwithstanding, the spreadsheet remains a ubiquitous – and widely popular – software tool. Fortunately, there is a way to overcome its limitations and bring all the capabilities of a modern planning and analytics solution to your Microsoft Excel spreadsheets – with [IBM Planning Analytics for Microsoft Excel](#).

This solution enables finance professionals, business analysts, line-of-business managers and users on the front lines to stay in their spreadsheet comfort zone while creating more accurate and reliable budgets and plans. It retains full Excel functionality and formatting, including graphing and built-in functions. Users can explore and analyze data sourced from multidimensional planning models including the IBM TM1 database, with superior performance over wide-area networks.

IBM Planning Analytics for Excel has four models of interaction:

- 1 Exploration for slice/dice/pivot analysis
- 2 Quick reports for fast worksheet design
- 3 Dynamic reports for row interactivity (zero suppression, expand, collapse)
- 4 Custom reports for highly formatted forms and reports

	Year	Q1	Q2	Q3	Q4
4099 Gross Revenue	\$ 11,921,344	\$ 2,990,199	\$ 2,703,661	\$ 2,805,634	\$ 3,421,849
5999 Cost of Sales	8,056,974	1,937,219	1,850,184	1,929,944	2,329,627
Gross Margin	3,864,369	1,052,980	843,477	875,690	1,092,222
6099 PAYROLL	645,576	172,148	174,300	162,581	136,547
6199 OFFICE EXPENSE	67,078	16,777	16,767	16,767	16,767
6299 TRAVEL	40,938	10,339	9,959	10,352	10,288
6399 OCCUPANCY	320,000	86,923	68,462	68,462	96,154
6499 MARKETING	141,615	37,570	35,548	34,219	34,278
6599 DEPRECIATION	47,167	1,875	7,042	16,875	21,375
Total Operating Expense	1,262,373	325,632	312,077	309,256	315,409
Net Profit	2,601,996	727,347	531,400	566,435	776,814
6699 ALLOCATIONS	319,937	65,891	76,482	77,725	99,839
Net Profit After Allocations	2,282,059	661,456	454,918	488,709	676,975

Figure 2: The IBM Planning Analytics for Excel interface helps organizations leverage the existing spreadsheet skills of finance and business users.

Users can define, guide, optimize, automate and document the planning process, ensuring that tasks are done on time, by the right people. Planning users have access to a centrally managed repository where data is shared, changes are tracked, and business logic is protected, ensuring the “single version of the truth” that is so essential for confident decision making.

IBM Planning Analytics for Excel enables organizations to harness the power of collaboration, with a managed workflow. It provides data aggregation and calculations, and allows users to review and analyze results and details from thousands of data points in real time. Plus, users can store key business logic and calculations in a secure application, where changes are made only by designated administrators and are immediately replicated to all participants, eliminating errors and conflicting data.

IBM Planning Analytics for Excel enables finance professionals, business analysts, line-of-business managers and users on the front lines to stay in their spreadsheet comfort zone.

Conclusion

The spreadsheet has been a useful personal productivity tool for many years. But, it lacks controls and auditability, and depends on individual users to enter data accurately and generate complex formulas and macros. These limitations make the spreadsheet suboptimal for enterprise-scale planning.

That's why the IBM approach is ideal. It enables users to explore data, perform complex analysis and collaborate more easily across the organization. With [IBM Planning Analytics for Excel](#), users can plan, budget, forecast and analyze, using familiar Excel tools and techniques, and leveraging the software skills they already have.

Spreadsheets are and, will likely remain, a popular tool. They just need a little help.

Save time and increase reporting accuracy:

→ [Learn more about IBM Planning Analytics.](#)

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