



SOCIETY OF ACTUARIES

Article from:

Forecasting & Futurism

July 2013 – Issue 7

Spreadsheet Controls ... How to Prevent a Fire

By Darrick Fulton

The first car I drove after getting my license was my parents' 1982 Pontiac Grand Prix. This car still had a carburetor to mix air and gas in the engine (instead of the fuel injectors which all cars have today). The carburetor needed repair, so when I came to a stop, I had to carefully put my left foot on the break to stop and my right foot on the gas, to keep the car from dying. Instead of investing in a repair for an aging car, my Dad offered me the following good advice: "If the car ever catches on fire, get away from it and watch it burn." Fortunately, my car never caught on fire; however, this story from my youth illustrates the approach that many companies take to spreadsheet controls. Action is often delayed with the hope of avoiding a fire in the future.

The following instances demonstrate the danger of ignoring spreadsheet controls and some "fires" that have resulted:

- The J.P. Morgan trading losses related to the "London Whale," were attributed in part to an incorrect calculation in a spreadsheet model which resulted in more risk than intended.(1)

- A spreadsheet cut and paste error cost TransAlta \$24 million on contract bids.(2)
- Hidden fields in an Excel spreadsheet left Barclay's with more Lehman assets than expected.(2)

Spreadsheets can also be manipulated to conceal fraud:

- Falsely linked spreadsheets resulted in a \$691 million currency trading fraud at AllFirst Bank.(2)
- A rouge trader at Societe Generale manipulated spreadsheet reports to hide fraudulent trading activity.(2)
- The Ex-CFO of Voyager Learning Company used hidden rows in spreadsheets, which did not appear when printed, to conceal false accounting entries.(2)

Spreadsheets play an active role in the operation and financial management of most businesses. The benefits of using spreadsheets lie in their functionality, ease of use, and wide availability.(5) While the benefits of spreadsheets are obvious, they are powerful tools which should be used with caution. Economics Blogger James Kwak has correctly stated that spreadsheets "don't tell you when they break, they just give you the wrong number."(1) The following are risks associated with spreadsheet end-use:

- Access by Unskilled Users—Individuals who are not properly trained or not related to the process may have the ability to review or change data.
- Errors in the Spreadsheet—Cells either are not locked or output is not validated. Formulas or calculations are inaccurate.
- Lost Data—Critical data can be lost if periodic backups are not performed.
- Change Management—Changes to calculations are not properly reviewed and approved.(2)

In light of these risks, what steps can be taken to reduce spreadsheet risks at your organization? The following steps are considered to be key aspects of an effectively controlled spreadsheet environment:



© 2013 Eric Wuestenberg Graphic Design & Photography by EricWuestenberg@gmail.com

1. DEVELOP A SPREADSHEET INVENTORY

All spreadsheets within the business that support important financial amounts and processes should be inventoried. This step will help ensure the population of spreadsheets in the organization is defined and subject to review.(6)

2. EVALUATE THE PURPOSE AND COMPLEXITY OF SPREADSHEETS

After the inventory is completed, the next step is to evaluate the use and complexity of each spreadsheet. This involves determining how a spreadsheet is used and assigning and documenting a level of complexity to the spreadsheet (low, moderate or high).(4)

Spreadsheet Complexity Increases Risk: Working in the insurance industry, I have had the privilege of working with many actuaries. As a non-actuary, one thing you notice about actuaries is their love for complex spreadsheets with a multitude of formulas, links, copies, tabs, vlookups, and pivot tables. With increased complexity, comes increased risk of error, and the need for increased controls.

3. DETERMINE CONTROLS NEEDED FOR THE SPREADSHEET

The appropriate combination of controls will help mitigate the risks inherent in a spreadsheet environment.(4) Examples of spreadsheet controls include:

- Applying version control techniques.
- Limiting user access to files (consider using a secured drive).
- Locking cells to prevent unauthorized changes.
- Using passwords to limit access to spreadsheets.(5)

A listing of required controls should be developed as appropriate for your organization.

4. EVALUATE EXISTING CONTROLS

The listing of required controls should then be compared to existing controls to determine if any gaps exist.(4)

5. PERFORM A SPREADSHEET BASELINE REVIEW

As part of evaluating existing controls, a spreadsheet baseline review should be conducted on high risk spreadsheets. A baseline review consists of testing the spreadsheet to ensure the data inputs and the overall design of the spreadsheet formulas are working as intended.(6)

6. CORRECT CONTROL GAPS

As these steps are completed, missing or ineffective controls may be identified. An action plan should be developed to correct the control gaps. The action plans should ensure the necessary controls are put in place and operating as intended, with the highest risk spreadsheets receiving top priority.(4)

Implementing these steps can help ensure that your organization has an effective spreadsheet control environment ... and help reduce the risk of a spreadsheet fire.

- (1) Kwak, James, "The Importance of Excel," www.baselinescenario.com, Feb. 9, 2013.
- (2) "The Problem with Spreadsheets, A Business Case for Spreadsheet Management and Controls," www.sarbox-solutions.com, CIMCON Software, Inc., pages 5-7.
- (3) Metz, Larry "Five Common Spreadsheet Risks and Ways to Control Them," www.theiia.org, Internal Auditor Magazine, October 2007.
- (4) "The Use of Spreadsheets: Considerations for Section 404 of the Sarbanes-Oxley Act," www.auditsoftware.net, Price Waterhouse Coopers, July 2004, pages 4-6.
- (5) "Implementing Effective Spreadsheet Controls," www.McGladrey.com, April/May 2011.
- (6) Burdick, Tim, "Improving Spreadsheet Audits in Six Steps," www.theiia.org, Internal Auditor Magazine, March 2008. ▼



Darrick Fulton

Darrick Fulton, CPA, is manager, Insurance Advisory Services at the accounting firm Brown Smith Wallace. He can be reached at DFulton@bswllc.com.