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## Spreadsheets: a tool you can trust?

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For more than two decades, spreadsheets have been the tool of choice for financial services firms. But do they contain hidden dangers? *Dianne See Morrison* reports.

For years, the spreadsheet has been an indispensable tool of financial institutions, where it has been used in almost every department - from the trading desk to human resources, finance and accounting.

But spreadsheets are only as perfect as their users - which is to say they are especially vulnerable to both accidental errors and to malicious meddling.

Take the case of John Rusnak, the rogue trader formerly employed on the currency desk at Allied Irish's Allfirst bank. Rusnak managed to hide \$691 million in bad trades by quietly manipulating cells within his trading spreadsheet.

As for unintended mistakes, Professor Ray Panko, of the University of Hawaii's business college, found in a survey of top-tier business consultants who had audited client spreadsheets that 78-97% of all examined spreadsheets contain "serious material errors".

Moreover, the problem may be more severe than most imagine, as the damage done by spreadsheet errors goes largely unreported. In his recent paper *The Importance and Criticality of Spreadsheets in the City of London*, Grenville Croll, membership secretary of the European Spreadsheet Risks Interest Group (EuSpRIG) and consultant, found that two firms had lost "tens of millions of pounds" because of mistakes on spreadsheets. For obvious reasons, neither of the firms went public with these errors.

Still, the popularity of the spreadsheet has continued to thrive, thanks to its flexibility as a tool. But critics now warn that the use of spreadsheets has reached a dangerous point. It is simply a matter of time, they say, before a spreadsheet error manages to wreak havoc at a firm, if not on the global financial markets.

Much of the problem, Croll noted, is that firms are asking more and more of the humble spreadsheet. They are used increasingly to price and record more intricate financial analytics, often straining the technological limits of the spreadsheet itself. Croll noted that some of his sources had complained that the existing 256-column limit in Microsoft Excel unnecessarily limits the number of instruments in a financial portfolio, as well as constraining the level of detail in temporal models. He also found that there have been difficulties in spreadsheets over 50 megabytes, a size that is not at all uncommon. Indeed, spreadsheets 20 times larger than that do exist.

Another part of the problem, according to Luke Flemmer, managing director of Lab49, a technology consultancy, is the sheer proliferation of spreadsheets, and the fact that they are often created by non-technical persons. "The challenge with spreadsheets is that they have flown under the radar for so long. Any business person can fire up Excel and create a spreadsheet, and build quite a powerful model on them," says Flemmer.

Meanwhile, the 2002 *Sarbanes-Oxley Act* has brought more urgency to the matter. The act requires, among other things, that corporations have well-controlled financial reporting systems. But the vast majority of financial reporting is still carried out on spreadsheets, even at top-tier Wall Street firms. According to the technology research firm IDC, 85% of those surveyed for a recent report on the use of spreadsheets were using them in reporting and forecasting, and that 85% were using them for budgeting and forecasting.

Financial intelligence firm Coda puts the figure even higher, estimating that 95% of US firms use spreadsheets for financial reporting. In Europe, the widespread reliance on spreadsheets is similar. ARC Morgan, a Netherlands-based financial consultancy firm, found that of the

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multinationals they surveyed that do business in the US, 80% of these used spreadsheets for both managing the control environment and financial reporting.

This state of affairs is akin to asking the fox to watch the henhouse, or as Croll noted in his report: "Spreadsheets are not only methods of controlling operational risk but also are themselves a source of operational risk."

### Living with risk

But spreadsheets will never be entirely eliminated from banking. Even with the most robust trading engines, there are some cases that still require the use of a spreadsheet. For example, for desks that handle a bespoke trade on behalf of a client, sometimes the firm's trading system will not be able to process the trade. A trader would book this on a spreadsheet.

In the trading department they are seen as giving the firm a leg-up, allowing them to create the most dynamic trading model. They are a particular favourite in the more innovative and emerging parts of the market, such as the fast-paced world of credit derivatives.

Even for banks that have heeded the warnings of the risk of spreadsheet errors, eliminating them entirely has proved to be impossible. One mid-sized US bank embarked on a project to reduce its spreadsheet risk by identifying and eliminating all unnecessary spreadsheets throughout its firm. It was able to whittle its inventory down to 300, all of which were considered mission-critical. Even after carrying out a risk analysis on these spreadsheets, the bank still had about 30 it considered absolutely necessary to its business.

Spreadsheets are also difficult to eliminate in the finance and accounting departments, where automation has been slow to catch on, as the process depends on data flowing from multiple departments across the organisation. As any IT manager, or any operational risk manager who

has embarked on an enterprise-wide technology project can attest, getting data to freely flow from department to department within an organisation is no easy matter. Often it reveals how other departments are just as mired in data management issues.

The problem of automated finance departments is not confined to the mid-tier and small-sized banks. It extends to some of Wall Street's largest banks that complete their revenue reporting process in the same way as their smaller competitors - by extracting the necessary data from various departments and inputting them into spreadsheets. Indeed, one Wall Street head of operational risk recently confessed that *Sarbanes-Oxley* reporting was still done by this painstaking method.

### Lock down

But help may be at hand for firms. Microsoft, whose Excel product dominates the market, has been working on improvements to be released with Office 2007. Among other new functions, the new version of Excel will enable spreadsheets to be managed and controlled on a server to help ensure that information isn't altered, and so that users are working with the most current data.

Several start-ups have also emerged, each offering varying ways of managing spreadsheet risk. One such company is Prodiance, which was spun-off from Scientific Software, a technology firm that originally conducted spreadsheet monitoring for the scientific community. It found that shortly after the implementation of SOX, several financial firms were interested in buying its Spreadsheet Compliance Manager software product. It now counts ABN Amro, Wachovia and Prudential Financial among its financial services clients.

According to Eric Perry, vice-president of marketing at Prodiance, the software's main goal is to help firms get their spreadsheets under control, and keep them under control. The product first conducts an inventory. If the

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spreadsheet is being used for financial reporting, for example, the software will identify all spreadsheets critical to this process. It then helps the firm conduct a risk assessment, evaluates and analyses the spreadsheet, and assigns a risk level. Once this is accomplished, administrators of the spreadsheets can better manage and control them. The software allows the spreadsheets to be monitored for change, and for an audit trail to be left in case any changes are made. Administrators can also be alerted of any alterations.

Prodiance is now targeting those firms who need a product to help manage the spreadsheet risk of their financial reporting. No shock then that Perry reports that 75% of Prodiance's recent wins are Sox-driven. Two of its financial services clients have also extended the use of the software for their trading desk.

ClusterSeven, a London-based firm, on the other hand, is targeting the trading desks of investment banks, and especially those in credit derivatives. It too provides technology to manage, analyse and audit the activity and data generated by Excel spreadsheets in financial firms.

ClusterSeven chief executive Steve Semenzato stresses that his company's product does not change the way in which people work. Instead, the software acts much like a 'CCTV camera', keeping watch over the spreadsheet, while data is stored in a central database. The software can detect changes to the spreadsheet and fire off an email alert in case, for example, someone overwrites a formula.

Other software vendors are trying a different approach. Instead of simply monitoring spreadsheets, their products try to completely remove the spreadsheet from the user by turning it into a stand-alone application.

**Risk Integrated**, a New York-based technology vendor, started up six years ago and initially focused on building bespoke risk-measurement models for clients. But after building many of

these models in Excel, **Chris Marrison**, chief executive of the firm says that it became clear that spreadsheets were neither safe enough nor robust enough to handle these complex analytics.

The firm recently launched software called the **Enterprise Spreadsheet Program (ESP)** to try to help firms transform these spreadsheets into actual applications, and thus centralise and remove the spreadsheet from the user. As Marrison notes, this cuts down on the number of users who can alter the spreadsheet - one of the greatest sources of risk.

The spreadsheet-turned-application is then hosted on a server that is accessible on the firm's intranet. Users in far-flung locations can immediately access the data and the application, but cannot alter it. Important data can be centralised on a secure database, rather than being isolated on "little data islands" on spreadsheets, as Marrison notes.

Like ClusterSeven and Prodiance's products, ESP leaves an audit trail, and allows a 'super user' to monitor the use of the spreadsheet-turned-application. Moreover, because it has been centralised, the spreadsheet can also be examined by compliance or by a risk manager.

Marrison says ESP goes one step further than auditing and monitoring software, because by removing the complex functionality from the spreadsheet and into its own application, the application itself is actually more robust. Having created risk management models, Marrison says he knows how computationally difficult it becomes to execute the more complex analytics on a spreadsheet.

Meanwhile, the market for locking down and auditing spreadsheets remains a surprisingly small one, but vendors hope that SOX compliance will help boost awareness and sales.