Presents

360 perspective of EUC/ Spreadsheet Management and Control for Solvency II

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Introductions

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Spreadsheet risk by the numbers

- 95% of firms use spreadsheets for financial reporting¹.
- 90% of spreadsheets with over 150 rows contain errors¹.
- 78% of spreadsheet models have no formal quality assurance².
- 54% of errors are identified by expert users in testing³.

You DO have spreadsheets.
Spreadsheets DO have errors.
You CAN’T rely on human or manual processes to protect you.

¹ http://panko.shidler.hawaii.edu/My%20Publications/Whatknow.htm
Risks for Managers to Consider

- Company image and reputation
- Regulatory compliance & reporting
- Financial reporting and analysis
  - Accuracy of account balances used in financial reporting
  - Operational analysis, metrics and management reporting
- Reliability of subsidiary system controls
- Undetected Fraud
- Lost earnings
<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Financial Impact</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fidelity Jan 1995 Fund</td>
<td>Jan 1995</td>
<td>$1.3bn</td>
<td>Reporting error. Accountant omission of minus sign with a net capital loss treated as a net capital gain causing an abandoned fund distribution and reputational damage.</td>
</tr>
<tr>
<td>Credit Suisse Aug 2008</td>
<td>Aug 2008</td>
<td>£5.6m</td>
<td>Fine by FSA. “2.33.3. The booking structure relied upon by the UK operations of Credit Suisse for the CDO trading business was complex and overly reliant on large spreadsheets with multiple entries. This resulted in a lack of transparency and inhibited the effective supervision, risk management and control of the SCG (Structured Credit Group)”</td>
</tr>
<tr>
<td>J P Morgan Chase Jan 2013</td>
<td>Jan 2013</td>
<td>£250m</td>
<td>Misstatement value at risk. This problem highlighted a lack of review and the risks of having a complex model that is only understood by one person.</td>
</tr>
<tr>
<td>AXA Rosenberg Feb 2011</td>
<td>Feb 2011</td>
<td>$242m</td>
<td>Fine by SEC. A spreadsheet error caused an over-estimate of client investment losses. Management did not declare this mistake. The cover up leading to a fine of US$242million for this global investment manager from the SEC.</td>
</tr>
<tr>
<td>Allied Irish Bank Mar 2002</td>
<td>Mar 2002</td>
<td>c.$700m</td>
<td>Fraud. Substituted links to private manipulated spreadsheets.</td>
</tr>
</tbody>
</table>

This is the tip of the iceberg. What about those not reported? What about those not detected?
CIMCON Software Company Profile

- 25 years in business
- Pioneered Spreadsheet Management and Controls marketplace with over 16 years of experience
- Largest installed client base of over 325 customers, mostly in financial services. Customers include Top 3 of 5 UK Insurers and Top 3 of 5 UK Banks
- ISO 9001 Certified R&D Center
- 180 employees
- 24 x 7 support
Proven and Sustained Market Leadership

“CIMCON Software’s almost two-decade history, market presence, vision and breadth of functionality results in its being the highest rated vendor in this research. CIMCON’s strengths include a relatively large development and support team, solid vision, a complete feature set, including a choice of hands-on or hands-off support, and a sophisticated ability to centrally analyze the spreadsheet. As compared with other vendors in this MarketScope, CIMCON has a well-established global business with strong customer references.”

“In the most significant category of Monitoring/Control, CIMCON received the highest ranking amongst all vendors rated in the report. “The Cimcon SOX-XL Suite is a consistently strong product across all of its modules and across all requirements as outlined in this document. However, in a number of areas Cimcon is not merely ‘strong’ but has significant capabilities that should allow Cimcon to continue to justify its claim to market leadership in the enterprise spreadsheet management space”.

CIMCON has ranked # 1 in the “Spreadsheet Compliance Products” category for 2 years in a row in a global customer survey by Operational Risk and Regulation magazine.

In the 2012 survey, CIMCON moved up to # 1 in the category of “Sarbanes-Oxley Products”.

© CIMCON Software, Inc.
1. Identify and Discover
Inventory all EUCs using the automated scanning technology of XLRisk.

2. Assess
Perform a Risk Assessment to determine High Risk EUCs.

3. Analyze
Analyze the EUCs to detect and remove errors.

4. Control
Monitor all changes to the EUC with audit trails and other controls.

5. Monitor
Keep Track of New Risks and Progress using XLRisk repeating Step 1.

Get an idea of the number and scope of EUCs in use.

Determine the number of High Risk EUCs.

Detect errors and remediate the EUCs before they are put under Controls.

Monitor changes with zero end-user impact.

Sustained Controls
Andy Jones is a very experienced project manager and business analyst having worked successfully as a Subject Matter Expert - EUC Management, for the last 17 years in investment banking, retail banking, insurance and card services both in the UK and in Europe.
Solvency II Compliance

Pillar 1: Quantitative Requirements
- Robust spreadsheet management systems that quickly and easily identify a situation before it becomes serious
- CIMCON provide the traceability, audit-ability, fraud detection, security and accountability

Pillar 2: Qualitative Requirements
- Automated inventory of all spreadsheets, databases and other EUC files across the organization & its risk profile
- Perform a highly visual, color-coded logic inspection of the spreadsheet

Pillar 3: Disclosure
- Spreadsheet governance and controls with traceability, accountability and security
- Management reporting based on exceptions, dashboards and alerts
The recent 2014 Ernst and Young European Solvency II Survey indicates that most insurers are ready for implementation of Pillar I, and have made progress regarding Pillar 2. Pillar 3, however, still presents a major challenge with 99% of respondents reported not meeting all Solvency II reporting requirements, and 76% only partially meeting or not meet any requirements so far. Hence, much work needs to be done.

Given the challenges and times involved, many firms will need to rely on manual processes to provide the 2015 transitional reports. 83% have reported that they will not yet have automated systems in place and will rely on manual reporting and calculations for key risk management metrics. These manual processes will no doubt increase the use of spreadsheets and other End User Computing (EUC) applications which in turn, creates an increased need to implement robust spreadsheet management systems that quickly and easily identify a situation before it becomes serious.
Let us quickly review some of the requirements of Solvency II that would apply to spreadsheets.

**Risk Management**

“Insurance and reinsurance undertakings shall have in place an effective risk-management system comprising strategies, processes and reporting procedures necessary to identify, measure, monitor, manage and report, on a continuous basis the risks, at an individual and at an aggregated level, to which they are or could be exposed, and their interdependencies.”

- Solvency II Directive Article 44.

**Data Quality**

“Member States shall ensure that insurance and reinsurance undertakings have internal processes and procedures in place to ensure the appropriateness, completeness and accuracy of the data used in the calculation of their technical provisions.”

- Solvency II Directive, Article 82.
Solvency II Directive Requirements

Security:
Computing applications such as spreadsheets that may have material impact on the internal model should have IT controls such as logical access management, network security, physical security and business continuity.

Version Control:
“The policy shall include a specification of minor and major changes to the internal model.” - Article 115.

Change Management
“Insurance and reinsurance undertakings shall document all major changes to their internal model” - Article 125.

Documentation
“Insurance firms shall document the design and operational details of the internal model and documentation of all internal models should be complete enough to allow knowledgeable third parties to understand the model. Documentation should include the definition of the different data sets and a high level description of the risk and impact.”
“Where EUC tools, such as spreadsheets, are material to the internal model data flow, we will be looking for appropriate controls for data quality such as reasonableness checks, input validations, peer reviews, logical access management, change and release management, disaster recovery, and documentation.” Sn. 4.41

“EUC tools, especially spreadsheets, were in common use in most internal models, and nearly all the data reviews identified issues with them. In most cases, the issue was inadequate compliance with existing EUC policies and standards. Firms often did not have an inventory of critical spreadsheets classified by use, by the impact on the internal model, and by complexity.” Sn. 4.42
Solvency II and Spreadsheet Management

Data Directory/Inventory

The FSA also discovered that firms often did not have an inventory of critical spreadsheets classified by use, by impact on the internal model, or by complexity; and that communication of data from upstream system and process changes and their impact on downstream users was difficult.

Therefore, Solvency II will require all data to have a directory that will specify the source, usage, how it is used in any internal model, and where it is stored; and a company should be able to document the use of all data sources including any external data.  

Solvency II and Spreadsheet Management

The Solution:
Discovery, Data Lineage, and Risk Assessment with

XLRisk:
XLRisk can perform an automated inventory and risk assessment of all spreadsheets or other EUC files in the company. While creating the inventory, the status of each file is determined and a risk profile is assigned. This analysis provides many useful results including the identification of the most critical spreadsheets, the mapping of file and data lineage, and reporting that identifies files with specific issues.
Data Quality

‘Member States shall ensure that insurance and reinsurance undertakings have internal processes and procedures in place to ensure the appropriateness, completeness and accuracy of the data used in the calculation of their technical provisions.”

SOLVENCY II Directive Article 82 – Data quality and application of approximations, including case-by-case approaches, for technical provisions (7)
The Solution:

Analysis and Remediation with **XLAudit:**

During discovery, files with issues can be identified. Further analysis using XLAudit can pinpoint the exact location and type of errors. Typical analysis includes checking of formulas, cells, macros, and spreadsheet structure. The reporting of these errors allows users to easily visualize and remediate the problems, as well as send a clean bill of health to auditors or managers. The ability to compare two spreadsheets is also a useful tool in reviewing periodic changes.
**Approval Process**

“As part of the initial approval process of an internal model, the supervisory authorities shall approve the policy for changing the model of the insurance or reinsurance undertaking. Insurance and reinsurance undertakings may change their internal model in accordance with that policy.”

*Solvency II Directive, Article 115: Policy for changing the full and partial internal models*
Solvency II and Spreadsheet Management

The Solution:

Security, Monitoring, Controls, Change Management, and Documentation with SOX-XL:

Critical files can be monitored for changes using SOX-XL, and there can be an approval process around those changes. SOX-XL creates and maintains a cell level audit trail of changes to files and allows comments for each of those changes. Approvals can be part of a regular business process, or they can be triggered automatically based on a critical or suspicious event within a file. In addition, the software can act as a version control system to offer an alternative to ad-hoc versioning. This allows for better security on older files, version comparison, and an easy rollback to previous versions. Lastly, security can be enhanced to secure individual parts of a spreadsheet, or the entire spreadsheet based on user and status.
Legal and General Case Study
Legal & General is an international wealth management and insurance group with funds under management of over £465bn.

The solvency II programme provided a controlled environment for the business critical spreadsheets of Legal & General. This included the creation and maintenance of an improved inventory, the review and upgrade of spreadsheet standards, the remediation of non compliant spreadsheets with inclusion in the standard risk management framework of the Group.

I organised and executed a Proof of Concept on the CIMCON suite of products to include both requirement and boundary testing. I subsequently directly supported the live implementation of XLRisk, XLAudit and SOX-XL: testing the server implementations; creating and delivering user training and creating a support model to deliver this new business capability.
Legal & General Case Study
Business Context

L&G Business objective
• Reduce the risk of End-User Computing (EUC) disasters. These are predominately excel spreadsheets but could be access or other user configured but not IT supported applications.

Business imperatives
• Improve control by making the business responsible for creating and maintaining an inventory of EUCs.
• Set business targets to improve compliance and remediate the EUC estate starting with the highest risk business critical EUCs.
• Review the control framework to ensure EUCs are appropriately designed and authorised.
• Ensure that new and existing EUCs have been risk assessed and that appropriate business operational controls are in place according to the assessed risk.
• Ensure that EUCs are created and amended following EUC Policy & Spreadsheet Best Practice.
• Review and improve the EUC Policy and Spreadsheet Best practice to ensure they are fit for purpose.

Provide Strategic Tools to support
• The creation and maintenance of an inventory; the analysis of spreadsheets for errors and the monitoring of spreadsheets to detect and so prevent unauthorised or unintended changes.
Legal & General Case Study
Proof of Concept

Approach:
• We undertook a CIMCON Proof of concept before designing and implementing the live implementation of SOX-XL, XLRisk and XLAudit.

Business Objectives:
• Understand how best to use and configure the CIMCON products and to gain experience in bringing high-risk spreadsheets under control to satisfy FSA and Solvency II regulatory requirements
• Identify business requirements that were not satisfied by existing CIMCON functionality and then to propose enhancements and agree workarounds
• Design an approach to minimise the impact on BAU processes

Business impact:
• Configure so every day users see little impact unless using the tool for development, comparison or workflow.
• Amend business processes to allow the SOX-XL control function to operate
• Train Administrators to configure the monitoring of spreadsheets
• Schedule quarterly reviews to ensure the key spreadsheet inventory is maintained, audit trails produced and the correct production version used in reported figures

Recommendation:
• Roll out CIMCON to provide a controlled environment for business critical spreadsheets.
The proof of concept resulted in the following changes to the live implementation:

**Business Decisions identified and addressed:**
- On licensing, version control, access and roll out

**Enhancements and licensing:**
- Enhancements were discussed with CIMCON and solutions agreed
- Provided names of all companies in scope and verified they would be covered by the CIMCON license agreement

**Live Commissioning:**
In addition to ensuring a working environment was delivered to the business
- Ensure an XLAudit test using CITRIX connectivity
- Test running concurrent scans of XLRisk
- Test XLRisk scans for negative numbers (when enhancement delivered)
- Create user guides to demonstrate how the requirements can be met.

**Improved L&G IT requirements:**
- Assessing any potential impact on existing SharePoint / Fileservers before go-live
- Improved understanding of L&G IT infrastructure requirements
Spreadsheet discovery and Risk Assessment

We used XLRisk, a server based tool, to
1. Search the file network for spreadsheets
2. Provide risk assessment against these spreadsheets
3. Report the risk indicators and issues identified

Business issues identified by XLRisk

- The spreadsheets with significant risk of error
- Process inefficiency for improvement
- Spreadsheets used for inappropriate tasks.
- (Data transfer)

XLRisk Process:
1. Business requires Scan
2. Complete XL Risk Scan Request form
3. Create Scan
4. XLRisk server scans network
5. Report sent to requester e.g. hidden sheets, Errors, Warnings, External links
Business Process

• We trained a support team to run the XLRisk scans on behalf of the business and to provide reports for the business to analyse.
• We recommended that XLRisk be used to review the risk level across all spreadsheets and plan remediation effort to reduce the risk of error.
• We used XLRisk to produce a candidate list of spreadsheets that we reviewed against the Business’s list to ensure completeness & accuracy of the inventory.

Reporting

• The business is able to create its own bespoke reporting
**Issue identification and documentation**

XL Audit is a spreadsheet based tool that users can install on their own computer.

**Business issues identified by XLAudit**
- Identifies spreadsheet errors in a systematic manner
- Compares and contrasts different spreadsheet versions
- Excellent at determining changes in assumption and reference data held in spreadsheets
- Confirms that a spreadsheet is free from specific issues

**Business Process**

XL Audit should be run on all production spreadsheets at the following times:
- Before and after the implementation of a change.
- When a new spreadsheet is ready for testing
- At the end of a reporting period to confirm no issues

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**XLAudit Process:**
1. Analyse Spreadsheet with XLAudit
2. Identify control gaps and issues
3. Remediation to close the gaps and resolve issues
4. Testing to confirm gap closure with XLAudit. E.g. broken links, #errors, cells with inconsistent formula....

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**Audited Excel® Spreadsheet Powered by XLAudit**

- Extensive Formula Analysis
- Comprehensive Referencing
- Superior Formula Rectification
- Map Precedents and Dependents
- Extensive Lookout
- Spreadsheet Intelligence
- Value-Added Productivity Tools
Legal & General Case Study
CIMCON Tools - XLAudit

Reporting - XL Audit - Heat Map report

- A summary and detailed listing of the issues identified
- Summarizes what was / wasn’t tested
- Saved as read only to prevent alteration
- Hyperlinked references back to original spreadsheet.
Monitors high risk spreadsheets for changes

SOX-XL is a server based solution that monitors changes made to high risk spreadsheets in the background and creates a robust detailed audit trail. The audit trail is available through the intranet and can be interrogated and reported on.

Business issues identified by SOX-XL

- Unplanned changes to monitored spreadsheets
- Unauthorised access to high risk spreadsheets
- Assist with root cause analysis of issues
- Facilitates version compare between spreadsheets

SOX-XL Monitoring Process:

1. Monitoring Spreadsheet with SOX-XL
2. Change Implemented
3. Audit trail updated by SOX-XL
4. Change may be approved using SOX-XL
5. Change reported to Business Owner by SOX-XL
**Business Process**

Once configured, the tool monitors in the background without impacting the performance of the spreadsheet.

On save, all changes are recorded in the audit trail against that user and time stamped.

The manager may review the audit trail and approve the changes with comments.

**Reporting**

Reports are available both online and bespoke, listing the changes for a time period with management review and approval comments.
SOX-XL Suite Benefits

The SOX-XL Suite of tools implements Spreadsheet Management Process that is:

- Traceable
- Repeatable
- Accountable
- Auditable
- Consistent
Thank You
This Complimentary Webinar will explore the Solvency II Directive requirements in the context of EUC concerns and deficiencies highlighted by the PRA, and act as a guide for insurance companies to assess their spreadsheet risk management system, and readiness for Solvency II compliance.

Thursday, January 29th at 11:00 am GMT

To register contact:
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