

Internal Audit Tools

**Selected Add-ins and Utility Programs for Increasing
Audit Effectiveness and Efficiency**

Agenda

- **Excel Add-ins**
 - Spreadsheet IQ
 - Active Data
 - Spreadsheet Professional
 - XL Audit Commander
- **Flowcharting Alternatives**
 - Microsoft Applications
 - Smart Draw
 - AllClear
 - Inspiration
- **Statistical Applications**
 - RAT-STATS

Spreadsheets Controlled??



- Recent attention results from Sarbanes-Oxley compliance
- Dependence on spreadsheets makes accuracy and reliability a concern for all organisations
- Recent studies of spreadsheet accuracy indicate error rates from 45% to more than 90%
 - KPMG Management Consulting audited spreadsheets from over 21 major UK banking and financial organisations. 92% of the spreadsheets dealing with tax issues had significant errors, 75% had significant accounting errors, and 59% were judged to have poor design
 - The European Spreadsheet Risk Interest Group has collated a list of more than 89 publicly reported errors of up to US \$1billion due to inadequate spreadsheets and/or spreadsheet controls.
- Recent studies by RevenueRec.com and IDC indicated that:
 - 92% of companies in the studies depended on spreadsheet to manually process their revenue data
 - 57% of companies could not finalise their revenue numbers within the normal close process
 - Dependence on spreadsheets was 2nd most commonly named challenge in implementing revenue policies and timely-accurate generation of revenue numbers

Spreadsheets Controlled??



What do most organisations do about the lack of spreadsheet controls??

NOTHING

Spreadsheets Controlled??



- **What should organisations do?**
 - Establish a policy for the development, control, and use of spreadsheets, particularly those providing critical information
 - Inventory the spreadsheets available (not just those in use)
 - Have appropriate tools that can document spreadsheets - so that the requirements will be met and can be shown to have been met.
 - Have appropriate tools that can test spreadsheets - so that spreadsheet errors can be identified and eradicated.
 - Ensure that all involved in the spreadsheet creation process are aware of the issues and have training to address them.
 - Internal audit verification that policies and standards are being followed
- **AuditNet has a comprehensive spreadsheet documentation and control guide available to its subscribers.**

Spreadsheets Controlled??



- **Testing within Excel**
- **Spreadsheet Audit and Control Add-ins**
 - **Spreadsheet IQ**
 - **Active Data**
 - **Spreadsheet Professional**

- **Capabilities**
 - **Spreadsheet discovery & inventory**
 - locates all critical spreadsheets within a network (e.g. employee PCs, network drives, etc.).
 - generates detailed inventory report of the spreadsheet population, including key metrics such as file name and path, file size, number of formulas, errors, nested IFs, external links, named ranges, blank cells, invisible cells, hidden rows/columns/sheets, locked cells, warnings, and a variety of other configurable parameters
 - **Risk assessment & analytics to evaluate complexity, integrity, identify common errors, and assess risk**
 - multi-workbook audit trails, workbook and cell analysis, workbook and cell change history, and interactive workbook and cell dependency diagrams
 - reports can be printed, exported to Excel and PDF formats
 - Maintains Prodiance Electronic Evidence Binder as audit work papers where results of spreadsheet analyses are organized, indexed and made searchable


- **Capabilities**
 - **Spreadsheet Documentation**
 - Detailed documentation to be created and organized using a built-in Microsoft Word editor.
 - Documentation can be created at the inventory, spreadsheet, worksheet, and cell levels with attachments at each level.
 - Documentation is stored as a companion file to the original spreadsheet
 - **Post development or post audit targeting of significant spreadsheet concern areas**
 - Cell painting tool for applying pre-defined color schemes to formulas, errors, input cells, and external links
 - Color schemes can be defined according to corporate policies
 - Automatically re-applied after spreadsheets are modified
- **Cost – US \$595 for single license**

Spreadsheet IQ

Workbook Analysis Report

Printed: Mar 09, 2007 04:19 PM
User: PRODIANCE\eperry
File: C:\Documents and Settings\eperry\Desktop\Spreadsheets\Treasury analysis worksheet.xls

Workbook Analysis Report

PRODIANCE 

Summary

Creation Date	May 24, 2004 11:31 AM	External Links	0
Modified Date	Mar 09, 2007 04:19 PM	Sheets	1
File Size (bytes)	43,008	Hidden Sheets	0
Title	Treasury Analysis Worksheet	Very Hidden Sheets	0
Author	eperry	Hidden Rows and Columns	2
Named Items	2	Occupied Cells	269
Formulas	112	Blank Cells	495
Array Formulas	0	Merged Cells	2
Formulas With Errors	15	Validated Cells	0

Formulas With Errors

Sheet Name	Cell Address	Formula	Value
Treasury Analysis Worksheet	D51	=D47/0	#DIV/0!
Treasury Analysis Worksheet	E40	=SUM(E37:E39)/0	#DIV/0!
Treasury Analysis Worksheet	E46	=+G40	#DIV/0!
Treasury Analysis Worksheet	E47	=SUM(E44:E46)	#DIV/0!
Treasury Analysis Worksheet	E51	=E47/0	#DIV/0!
Treasury Analysis Worksheet	F40	=SUM(F37:F39)/0	#DIV/0!
Treasury Analysis Worksheet	F44	=+E44/\$E\$47	#DIV/0!

start | Inbox... | 2 of 35... | Home... | Work... | Desktop | My Documents | Address | Go | 4:19 PM

Spreadsheet IQ

The screenshot displays a Microsoft Excel spreadsheet titled "Treasury Analysis Worksheet.xls". The spreadsheet is organized into several sections: "Model key", "Annual cash buffer percentage", "Cash forecast targets", "Liquidity analysis", "Other short-term assets", "Investments summary", and "Treasury analytics".

An "Apply Scheme" dialog box is open, showing the following settings:

- Formulas: =SUM(A1:A20)
- Formulas with Errors: #DIV/0!
- Used Input Cells: 123
- Referenced Blank Cells:
- External Links: =C:\Bdexam\Workbooks\Sheet11033
- All Other Cells: Abcd
- Clear Conditional Formatting:
- Apply to: Active Sheet

The spreadsheet data includes:

Asset type/description	Beginning of year amount	Annual yield	months	Additions	Withdrawals	amount	Earned income
Certificates of deposit	\$50,000.00	2.12500%	3	\$0.00	\$50,000.00	\$0.00	\$265.63
Certificates of deposit	0.00	2.25000%	6	75,000.00	0.00	75,000.00	843.75
Other short-term assets	0.00	0.00000%	0	0.00	0.00	0.00	0.00
Total short-term assets	\$125,000.00			\$75,000.00	\$125,000.00	\$75,000.00	\$1,059.38

Asset type/description	Beginning of year amount	Additions	Sales	End of year amount
Stocks	\$500,000	\$0	\$250,000	\$250,000
Bonds	200,000	0	100,000	100,000
Other investments	0	75,000	0	75,000
Total investments	\$700,000	#DIV/0!	#DIV/0!	#DIV/0!

	Beginning of year amount	Beginning of year %	End of year - \$	End of year - %	Variance %
Cash	\$1,200,000	59.3%	\$1,870,000	#DIV/0!	#DIV/0!
Short-term assets	125,000	6.2%	75,000	#DIV/0!	#DIV/0!
Investments	700,000	34.6%	#DIV/0!	#DIV/0!	#DIV/0!
Total	\$2,025,000	100.0%	#DIV/0!	#DIV/0!	

- A collection of tools to build, test, document and use spreadsheet models more quickly and effectively and reduce the number of errors created
- Building spreadsheets
 - Set up sheet in standard format
 - Create, format, choose colour, select borders and copy a cell with a single key stroke,
 - Translation bar that provides a translation of the current formula (cell references) into English at the bottom of the screen
 - Formula tracer provides a printable visual diagram of all antecedents of a formula to any depth to show complete derivation of a number
- Testing tools evaluate spreadsheets for 25 common error types and flags cells containing identified errors.

- **Documentation tools**
 - Summary report of basic information for workbook and sheets included
 - Report of range names, external references, data inputs, unique formulas
 - Report of blank inputs and current input values
 - Listing of calculations in both Excel formula and English text formats
 - Spreadsheet comparison tool to verify consistency in inputs, formulas, and results (Important test for spreadsheets distributed within organisation for data input to be returned and combined at higher level. Verifies whether lower level unit has made unauthorised changes.)
- Usage efficiencies with enhanced tools for sensitivity analysis (“what if”) and breakeven analysis
- Cost – GBP 295 for single license

Spreadsheet Professional

Microsoft Excel - test.xls

Edit View Insert Format Tools Data Window Help

Spreadsheet Professional Build Test Document Use Other

$=L46+L47$

B

C

D

E

F

G

H

Spreadsheet Professional - Formula Tracer

Inc depth

Dec depth

Inc zoom

Dec zoom

Document

L49: PROFIT AFTER TAX
 $=L46+L47$

L47: Tax1
 $=-Tax!L17$

Tax!L17: Total Tax Charge
 $=L15+L14$

L44: Rolled Up Interest
 $=SUM(L39:L43)$

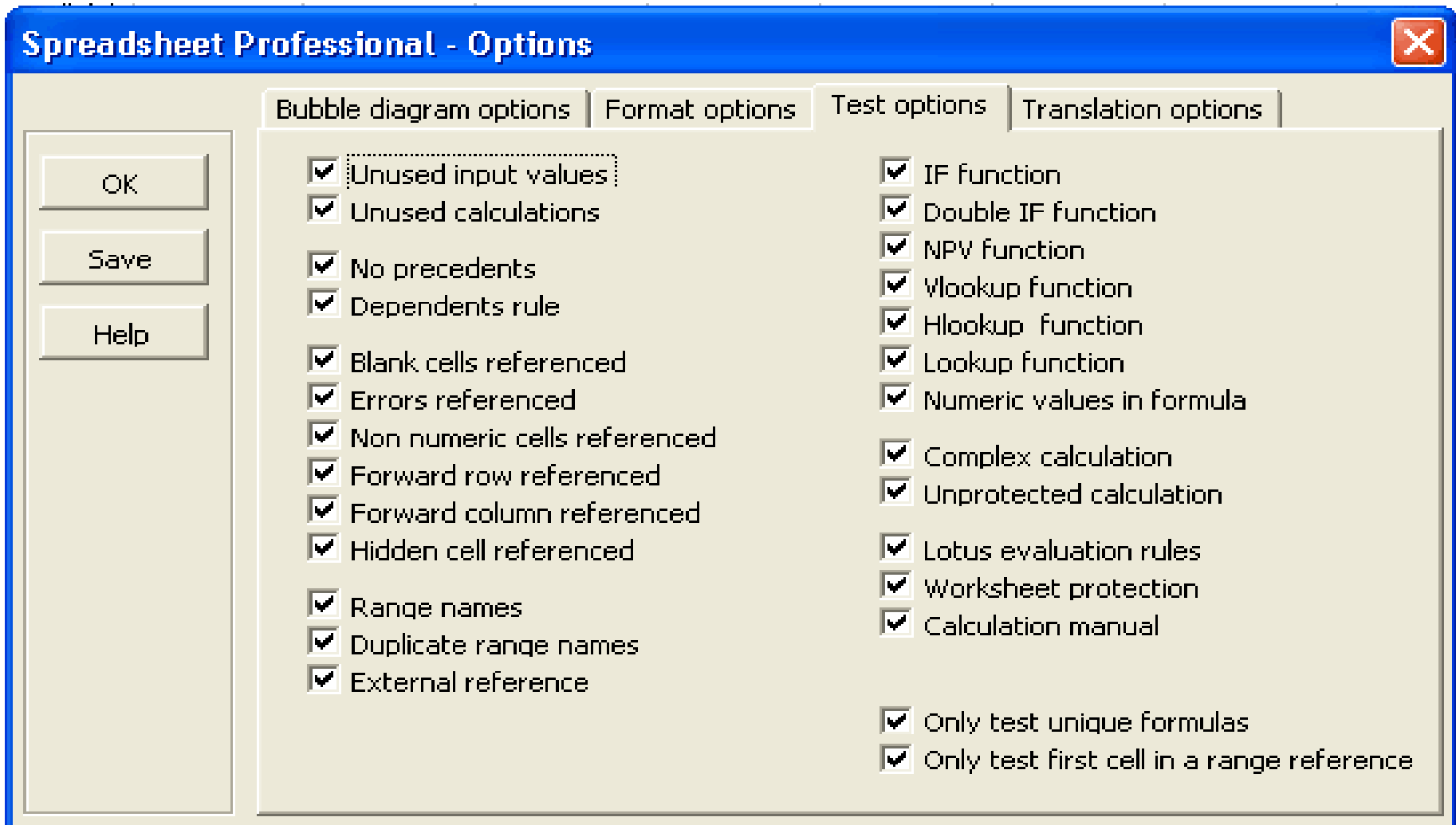
L46: PROFIT BEFORE TAX
 $=SUM(L18:L22)+L37+L44$

L37: Net Cash Interest
 $=SUM(L24:L36)$

L18:L22: EBIT:Other income

Spreadsheet Professional

Types of errors tested



Spreadsheet Professional



Portion of error report for a small spreadsheet

Summary statistics

Range analysed	A1:DI17
Number of numeric inputs	201
Number of formulas	916
Number of unique formulas	37
Unique cells are those that are not copies of the cell to their left.	
Percentage of unique formulas	4%
Number of labels	66

Potential errors summary

Possible error condition

	Frequency
Unused input value	14
Unused calculation	14
Forward row reference	2
IF function	1
Numeric rule	12
Complex calculation	2

Protection not enabled.

This sheet is not protected. Users can overwrite the contents of any cell even if the cell is locked.

Test notes.

Only unique cells have been tested.

Remember to check cells that are a copy of the cells shown on this report.

Only the first cell in each range referenced by a formula has been tested.

Unused input value

A number has been entered which is not used in any calculation.

Potential errors to watch for:

1. A calculation contains an incorrect reference.
2. The writer of the spreadsheet may have forgotten that this input value exists and hard coded the value directly into subsequent calculations.
BU103:BU109, BU111:BU117

Active Data



- **Manages workbooks by creating indexed table of contents sheets of all of workbooks at a single location (one computer or network).**
 - Global Search and replace across all of your workbooks.
 - Workbook Navigator allows rename, create, move, print or hide your sheets and open, close or save workbooks.
- **Data analysis features**
 - Merge, match and compare at sheet level; query, tag and select rows; sort, summarize, sub-total, split, sample, stratify; analyze duplicates, detect gaps in sequenced items such as cheque and invoice numbers.
 - Perform Benford's Law and other applicable digital analysis tests on your data to detect variances and fraud.
 - Select column of data and calculate descriptive statistics including totals, averages, standard deviations, variances, medians, max-min.
 - Sort data using 6 keys, instead of the 3 keys available in Excel versions before Excel 2007.
 - Additional audit tests available for purchase (US \$99 to \$199)
- **Cost – US \$249 for single license plus \$45/yr tech support**

Audit Tests in Excel

- **Standard Excel Tools and Add-ins**
- **Excel for Auditors – reference book**
- **XL Audit Commander**
 - **Analytical audit software - used for:**
 - **Identification of duplicates, gaps, outliers, population summaries, data classification and stratification, univariate statistics, sample size computations, percentiles/quartiles, Federal holiday dates, histograms, etc.**
 - **Testing Benford's law, cumulative monetary amount sampling, interval sampling, cross tabulations, account ageing, summarization, day of week analysis**
 - **Obtaining Chi Square, checking credit card numbers (Luhn-10), round numbers, top/bottom 5,**
 - **Producing charts - histograms, trend lines, Pareto charts to analyse data**
 - **Requires training in specific algorithm and command language structure**
 - **Works on Excel data converted to ASCII file formats**
 - **Cost - FREE**

Flowcharting Alternatives

- **Microsoft Applications**
 - Excel, Word, PowerPoint
 - Visio
- **Smart Draw – rapid insertion of flowchart symbols**
- **AllClear – text to graphics conversion**
- **Inspiration – free form mapping and conversion to text**

Statistical Tools

- Excel Data Analysis
- RAT-STATS

Reference Links

- **Excel Add-ins**
 - Spreadsheet IQ – www.prodiance.com
 - Spreadsheet Professional - www.spreadsheetinnovations.com
 - Active Data - www.informationactive.com
 - XL Audit Commander - www.ezrstats.com
- **Flowcharting Alternatives**
 - Smart Draw - www.smartdraw.com
 - AllClear - www.proquis.com/page.asp?page=2
 - Inspiration - www.inspiration.com
- **Statistical Applications**
 - RAT-STATS - www.oig.hhs.gov/organization/OAS/ratstat.html#2
- **General Reference**
 - Audit Software Net - www.auditsoftware.net
 - Audit Net – www.auditnet.org
 - Tech Republic – www.techrepublic.com
 - European Spreadsheet Risk Interest Group - www.eusprig.org
 - Mr Excel – www.mrexcel.com

Questions and Discussion