

Comparison of Generalized Audit Software

In today's modern and computerized world even small companies have huge numbers of financial transactions going through the books. As an (external) auditor, it's your responsibility to analyse these transactions and ultimately to form an opinion as to whether the accounts show a true and fair view of the company's position.

But with this huge number of transactions, it's impossible to analyse everything manually, so what is the alternative? The answer is what is known as "generalized audit software". Generalized audit software packages are tools designed specifically for auditors and have two main functions:

- 1) To facilitate and automate the testing of 100% of a population
- 2) To focus the auditors attention on specific areas or transactions which are of higher risk

Many audit firms (and internal audit departments) have already implemented audit software, however it is alarming that there are still many that have not. The most common reason for not using such software is not what you might expect, cost – it's ease of use and learning requirements. But this is a myth – audit software has become far simpler to use, and there are now even a couple of products that run within Excel.

It's been a few years since I last compared the GAS and fraud detection packages available, and as there are a couple of new players in the market I thought it was time for an update. Here we'll compare the four main GAS products. I've also included Excel in the comparison, as it's often used as a substitute for GAS, and can perform many of the more simple tasks.

We'll look at

- Data analysis functions
- Ease of use
- Other considerations
- Ways to select a product

Product	Phone	Web
ACL	604-669-4225	www.acl.com
ActiveData for Excel	613-569-4675	www.informationactive.com
Excel	See website for local office listing	www.microsoft.com
IDEA	888-641-2800	www.audimation.com
TopCAATs	+44 (0)845 8681424	www.topcaats.com

Core data analysis functions

The matrix below summarizes the most common data analysis functions by software vendor. A check mark is placed next to each function if it's a standard feature of the tool or could easily be completed using the software's native functions. For example, it may be possible to join or compare an employee address file to a vendor address file using the VLOOKUP() function in Excel, but this can be a complex function to use and isn't flexible in approach. Therefore, for the Join/Relate function below, Excel wasn't deemed to have this functionality. On the other hand, IDEA software has a Cross Tabulate command that's specifically listed as part of its standard menus and so I note in the matrix that it has this function.

Feature	Description	ACL	ActiveData for Excel	Excel	IDEA	TopCAATs
Aging	Produces aged summaries of data based on established cutoff dates	√	√		√	√
Append/Merge	Combines two files with identical fields into a single file. An example would be to merge two years worth of accounts payable history into one file.	√	√	√	√	√
Calculated Field/ Functions	Creates a calculated field (which can use a Field/ function such as ABS for the absolute value of Functions the field) using data within the file. For example, the net payroll pay to an employee could be recalculated using the gross pay field and deducting any withholding/taxes	√	√	√	√	√
Cross Tabulate	Allows you to analyze character fields by setting them in rows and columns. By cross-tabulating character fields, you can produce various summaries, explore areas of interest, and accumulate numeric fields.	√	√		√	√
Digital Analysis/ Benford's Law	Audit technology designed to find abnormal duplications of specific digits, digit combinations, specific numbers, and round numbers in corporate data. Since the objective is to find abnormal duplications, auditors need a benchmark that indicates a normal level of duplication. Benford's Law gives auditors the expected frequencies of the digits in tabulated data. The premise is that we would expect authentic and unmanipulated data to exhibit these patterns. If a data set doesn't follow these patterns, this may be a cause for auditor concern and review	√	√		√	√
Duplicates	Identifies duplicate items within a	√	√	√*	√	√

Feature	Description	ACL	ActiveData for Excel	Excel	IDEA	TopCAATs
	specified field in a file. For example, this report could be used to identify duplicate billings of invoices within the sales file					
Export	Creates a file in another software format (for example, Excel, Word) for testing. An example would be to export customer address information to Word for "Mail Merge"ing to customer confirmation letters	√	√	√	√	√
Extract/Filter	Extracts specified items from one file and copies them to another file, normally using an "if" or "where" statement. Examples include extracting all balances over a predefined limit	√	√	√	√	√
Gaps	Identifies gaps within a specified field in a file. For example, identify any gaps in check sequence	√	√		√	√
Index/Sort	Sorts a file in ascending or descending order. An example would be sorting a file by social security number to see if any blank or "999999999" numbers exist.	√	√	√	√	√
Join/Relate	Combines specified fields from two different files into a single file using key fields. This function is used to create relational databases on key fields. It can also be done in an unmatched fashion to identify differences between data files.	√	√		√	√
Regression	Regression analysis using statistical means to calculate a dependent variable balance (such as net sales) based on various independent variables (for example, product purchases, inventory levels, number of customers, etc.).			√		
Sample	Creates random or monetary unit samples from a specified population	√			√	√
Statistics	Calculates various statistics on a selected numeric field. These may be total positive items, negative items, average balance, etc.	√	√	√	√	√
Stratify	Counts the number and dollar value of records of a population falling within specified intervals. Stratifications also provide a useful view into the largest, smallest, and average dollar transactions.	√	√		√	√
Summarize	Accumulates numerical values based	√	√	√	√	√

Feature	Description	ACL	ActiveD ata for Excel	Excel	IDEA	TopCAATs
	on a specified key field. An example would be summarizing travel and entertainment expense amounts by employee to identify unusually high payment amounts.					
Test grouping	These are groups of tests all designed to be run simultaneously on a specific report or area of the accounts, e.g. journals listings, trade receivables, fixed assets, etc	?			v#	v
Highlight differences	Highlights the differences between two different versions of a report	?	?		?	v
Outlier extraction	Searches for records which lie at the extremes of a population (e.g. all invoices that exceed 3 times the average for that supplier)	?	?		?	v
Cost (for a single license)	This is the cost for a single license. Most manufacturers offer substantial discounts for additional licenses, please contact the manufacturers for further details	>\$2,000	\$249	\$400~	>\$2,000	\$199^

* Excel 2007 only

Available at additional cost

~ Office 2007 standard edition

^ Introductory price, standard cost \$399

As you can see from the matrix, all the products have similar tools and features. The four specialised products all offer more features than Excel as they are written for this specific purpose. Although Excel is an incredibly powerful tool, and will continue to be used by auditors for years to come it does fall short when it comes to more complex or specific data analysis. However, when combined with ActiveData or TopCAATs (which are both add-ins for Excel), Excel is transformed into a very powerful data analysis platform.

And while price shouldn't be the only factor to consider when choosing GAS, the cost of ActiveData or TopCAATs is less than ¼ the price of IDEA or ACL (based on single user license and already having Excel installed).

ACL and IDEA are both unrestricted to the amount of data that they can analyse (limited only by the size of your hard disk). ActiveData and TopCAATs are all subject to the same restrictions as Excel, which in versions up to Excel 2003 is 65,536 rows. However, Excel 2007 allows analysis of over 1,000,000 records and both ActiveData and TopCAATs are fully compatible with this.

ACL and IDEA are also faster at analysing data than Excel, ActiveData or TopCAATs, although none of the products were particularly slow.

Ease of use

Other than the actual features available, the most important factor when choosing GAS is the ease of use. This is often cited as being the biggest barrier to entry for audit firms (and IA departments). Even worse than this, I often speak to companies who have spent tens or hundreds of thousands of dollars on software for their staff, only to find that it's so complex that most of their staff don't actually use it!

Whilst ACL and IDEA have both got easier to use over the last few years, there's still quite a steep learning curve with them both. Both manufacturers recommend multi-day training courses, and less IT literate staff often struggle to take it all in. On the other hand ActiveData and TopCAATs are far simpler to use. Both run completely within Excel – an environment that just about every auditor is already familiar with.

TopCAATs has taken ease of use to the absolute extreme, and really is about as easy to use as possible! The unique color coded input boxes (inputs are red if they missing or contain invalid data, and green if they contain valid data), simple intuitive userforms and inbuilt help, result in minimal (if any) training requirements.

ActiveData and TopCAATs also include a number of more general tools which enhance Excel's native functionality and make life a little easier (for example the TopCAATs toolbar or ActiveData's workbook functions). TopCAATs also has an "Engagement Details" function that allows you to store information about the client you're currently working on, so you don't have to keep entering the same information over and over again.

Training

All the products listed have training not only in their functionality but also in how they can be used in a fraud detection scenario. The software vendors or independent firms using the software have produced a variety of self-study, group-study (sometimes including online tutorials), and private instruction courses. For more information, please see the ACFE's bookstore at CFEnet.com or the software vendor Web sites for numerous training options. All vendors have mailing list communities and/or forums to help connect users of their products to discuss practical application scenarios.

You should also consider the amount of training required to equip your staff with the necessary skills to use the software effectively. There's no point in spending money on software if you aren't prepared to invest in training the staff how to use it. The training requirements of ActiveData and TopCAATs are relatively minimal as they leverage the familiar Excel environment, and are slightly more geared up for everyday use by the masses. ACL and IDEA are more specialist products and tend to have higher training needs.

Data import considerations

Of course, another of the difficulties in using GAS is getting the data into the software, and getting it in a suitable format. All products provide a "wizard" that will assist in analyzing the

following file types: Excel, Access, Dbase, Delimited, and Fixed-Width. The wizard will do most of the work in ensuring data of these types is imported correctly and, for the most part, this function is all that's needed for most examinations provided that most client systems will be able to export data in an ASCII format and in one of these common file types. Some older computer systems may only be able to provide data in a mainframe format (such as IBM's EBCDIC format) and for these special instances, ACL™ and IDEA are the only tools in our software line up you can use to natively read these files

All the products also allow Open Database Connectivity (ODBC) which is the standard database access method developed by Microsoft and adopted by most accounting packages to transfer data between systems

ACL and IDEA also support the importing of print files, allowing you to easily define the fields and strip out the headers. Whilst this can sometimes be achieved in Excel, it is often a fairly manual task and can lead to poor data integrity. There are additional products that can be used to import print files to Excel, such as Import Wizard (<http://www.beside.com/download.html>)

However, in reality most modern accounting packages and databases can export to either .xls or .csv so these additional import functions are rarely used. Furthermore, it's often easier to get reports in Excel format, as this is what the accounting department at the client use to run their business!

How to select a package Test drive

When I'm in the market for a car, I may like the appearance and look of a particular vehicle. And then I'll look to see how many cars of that model I see on the road. But I finally base my decision on how the car feels. Almost any car will get me from point A to B and will provide similar functions. Shopping for fraud interrogation software is similar. Some of the bells and whistles may be requirements for a minority of users, but the core functionality and usability seems to be what most people want on a daily basis. My best suggestion is to take a test drive: obtain demo versions of the software packages (trials of both ActiveData and TopCAATs can be downloaded from their respective websites), and run the same report through each product. You can determine which product feels best. Talk to the company representatives, the help desk, and other users to help form your opinion.

Summary

When choosing Generalized Audit Software, there are many issues to consider: data analysis features, ease of use, cost, import requirements, etc. Before rushing out and purchasing expensive software for the whole department, start small and begin using some of these techniques on a few of your engagements to assess your needs. All too often I see companies invest tens of thousands of dollars purchasing and implementing fraud interrogation software only to shelve it for a couple of months and hit a brick wall when they went to use it again because they had forgotten most of what they had learned. As

ActiveData and TopCAATs integrate so well with Excel, they tend to be used on a much more regular basis, and this decay of knowledge over time is much less profound.

I'd also recommend considering a two product approach –

- 1) Deploy one of the (cheaper) Excel based products (ActiveData or TopCAATs) across the firm/department, which will probably cover over 90% of your needs with minimal training, and
- 2) Purchase 1 or 2 (per office) ACL/IDEA licenses and invest in training up a couple of experts for those few occasions where a little more is needed – they can always run the odd routine for a colleague, or import a difficult file, export it to Excel and email it back

I hope I've helped to dispel the myths that audit software is difficult and expensive, and moved you closer to using proactive data analysis techniques on some of your engagements.