COMPUTER ASSISTED AUDIT TECHNIQUES

The force multiplier in the battle against risk

ISACA Evening Talk (20 August 2013, Tuesday) @ NLB
AGENDA

• Business case for CAATs and data analytics
• Using CAATs to size up business processes quickly
• Simple CAATs techniques that yield quick return on investment
• Using CAATs for investigative work
• How CAATs was successfully integrated into a Pre-CAATs audit team
BUSINESS CASE FOR CAATS & DATA ANALYTICS

Informal Poll:

How many in the audience are using Computer Assisted Audit Tools/Techniques (CAATS) or Data Analytics regularly?
BUSINESS CASE FOR CAATS & DATA ANALYTICS

- Informal peer group of Heads of IA within institutions of a higher learning (IHL)s – unscientific straw poll:

  - 2012: 11% (1 out of 9 IHLs using CAATs)
  - 2013: 33% (3 out of 9 IHLs using CAATs)
BUSINESS CASE FOR CAATS & DATA ANALYTICS

Figure 5: CAE thoughts on use of analytics by internal audit

- 31% of CAEs agree that data analytics are used regularly.
- 71% plan to expand use of data analytics but do not have a well-developed plan.
- 81% believe data analytics are important to improving the quantification of issues.
- 85% think data analytics are important to strengthening audit coverage.
- 74% consider data analytics important to gaining a better understanding of risks.
**Figure 6: Where internal audit functions will get the talent they need**

<table>
<thead>
<tr>
<th>Skill Category</th>
<th>Reallocate existing resources</th>
<th>Hire resources or leverage third parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft skills (such as conflict resolution)</td>
<td>29%</td>
<td>71%</td>
</tr>
<tr>
<td>Compliance and regulatory skills</td>
<td>28%</td>
<td>53%</td>
</tr>
<tr>
<td>Data analytics skills</td>
<td>59%</td>
<td>54%</td>
</tr>
<tr>
<td>Business continuity skills</td>
<td>20%</td>
<td>54%</td>
</tr>
<tr>
<td>IT security skills</td>
<td>41%</td>
<td>29%</td>
</tr>
<tr>
<td>Skills related to a specific IT platform</td>
<td>32%</td>
<td>30%</td>
</tr>
<tr>
<td>General IT skills</td>
<td>46%</td>
<td>37%</td>
</tr>
<tr>
<td>Financial controls skills</td>
<td>22%</td>
<td>44%</td>
</tr>
</tbody>
</table>

For each area, will you add internal audit capability over the next 18 months? For each area, where will you most likely get the additional talent you need?

Percent of CAEs planning to add internal audit capability.
BUSINESS CASE FOR CAATS & DATA ANALYTICS

• Chief Audit Executives agree that CAATs is important

• Adoption rates vary

• Why are we not there yet in terms of CAATs use and implementation?
CAATS CHALLENGES & OPPORTUNITIES

Opportunities

- Allows us to leverage on available technology (PCs, Excel, CAATs tools)
- Enhances team productivity
- 100% or more testing (include prior years)
- Strategic
  - “We are looking at big picture, trends then we drill down to examine details.”

Challenges

- Requires a fundamental paradigm shift
- Old habits die hard
- Sampling mindset
- Fear of the unknown
  - “The data must be exact and correct before I can trust it to do testing!”

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CAN’T SEE THE FOREST FOR THE TREES

Perspective, Perspective and Perspective
USING CAATS TO UNDERSTAND BUSINESS PROCESSES

Audit Objectives

Scope & Coverage

Walkthrough

Understand business process

Key controls
  • Preventive
  • Detective
  • Corrective

Evaluation of Controls

Controls testing

Or substantive procedures
USING CAATS TO UNDERSTAND BUSINESS PROCESSES

• Enterprises function in a data rich environment
  • Operational systems
  • Enterprise Resource Planning
  • Even stand-alone departmental applications also have own databases

• And auditors have an eye for details which is useful for testing but...

• Are we at risk of missing the forest for the trees?
USING CAATS TO UNDERSTAND BUSINESS PROCESSES

Pre-CAATs

Understand business process
Random or judgmental sampling ("30!")
Test for errors (Y/N?)
  • Yes – extend sample
  • No – yay!

Post-CAATs

100% of transactions in system
Understand data
  • E.g. Fieldstats
  • E.g. Summarise
  • E.g. Pivot
Note initial insights
ISACA IT Audit and Assurance Guideline G3 Use of Computer Assisted Audit Tools

1.4.3 CAATs can be used in performing various audit procedures including:

- Tests of details of transactions and balances
- Analytical review procedures
- Compliance tests of Information Systems general controls
- Compliance tests of IS application controls
- Penetration testing
USING CAATS TO UNDERSTAND BUSINESS PROCESSES

Types of CAATS

1. Generalised audit software
   - E.g. Excel, ACL, Caseware IDEA

2. Utility Software
3. Application Software
   Tracing and Mapping
4. Customised Queries and Scripts

Types of CAATS (G3 Use of CAATS)
SIMPLE CAATS THAT YIELD A QUICK RETURN ON INVESTMENT

CAATS require investments in:

**Tools**
- Software licences
- Hardware

**Techniques**
- Plan audits with CAATs in mind
- Re-engineer audit procedures to use data and CAATs

**Time**
- Training of staff
- Change management of mindsets and methods
USING CAATS TO UNDERSTAND BUSINESS PROCESSES

- Contoso (fictitious company)
  - Analysis of international electronic sales
- Size up data quickly
  - How many records? => addresses completeness issue
  - What are the fields? => suggests what can be tested
- Examples using IDEA and Excel
  - Fieldstats
  - Summarisation
  - Excel Pivot
Disclaimer:

• Not an “expert” in Excel or IDEA
• There could be other better ways to do the analysis/tests shown
  • In fact, that is one of the challenges in CAATS – too many ways to perform the same function/test!
• Paradox of choice – analysis paralysis
SIMPLE CAATS THAT YIELD A QUICK RETURN ON INVESTMENT

Sorting / Filtering
- Top 10/20 high/low
- Filter or Criteria transactions that go against business rules/logic
- Common sense testing

Duplicates, Gaps Test
- Duplicates – testing data accuracy and integrity, especially payments of claims, invoices and receipts
- Gaps – missing sequences as a test of completeness
**SIMPLE CAATS THAT YIELD A QUICK RETURN ON INVESTMENT**

<table>
<thead>
<tr>
<th>Aging (for date and time related data)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Account balances</td>
</tr>
<tr>
<td>• Payables/creditors</td>
</tr>
<tr>
<td>• Receivables/debtors</td>
</tr>
<tr>
<td>• Inventory</td>
</tr>
<tr>
<td>• Fixed assets</td>
</tr>
<tr>
<td>• Time-sheets</td>
</tr>
</tbody>
</table>
EXAMPLE
SIMPLE CAATS THAT YIELD A QUICK RETURN ON INVESTMENT

<table>
<thead>
<tr>
<th>Ratios</th>
<th>Trends (across space and time)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Big picture</td>
<td>• Time</td>
</tr>
<tr>
<td>• Pareto analysis (80-20)</td>
<td>• stratification</td>
</tr>
<tr>
<td>• Relativity between departments, business</td>
<td>• Place</td>
</tr>
<tr>
<td>units, business lines</td>
<td>• geographical</td>
</tr>
<tr>
<td></td>
<td>• department</td>
</tr>
<tr>
<td></td>
<td>• business units</td>
</tr>
</tbody>
</table>
USING CAATS FOR INVESTIGATIVE WORK

Finding the proverbial needle in the haystack

Not knowing what you don’t know

Zooming in on very specific type of transactions

CAATs

- filtering / criteria
- key word detection
- joining data from separate databases
USING CAATS FOR INVESTIGATIVE WORK

Define the specific transactions or info needed

Obtain data required -- Typically requires multiple sources e.g. Finance, HR, Operational Depts

Collate sufficient, appropriate evidence to substantiate wrongdoing
### Search
- Functions / Formulas
- IDEA - @ISIN1
- Excel - <Ctrl>+F

### Join/Match
- Putting together disparate but related pieces together
- IDEA - FIND, JOIN, APPEND, @MATCH

### Patterns
- Summarisation by staff/dept/type of transaction
- Stratification by dates
- Ratios
IMPLEMENTING CAATS: SOME THOUGHTS

Pre-CAATs: education, sharing, change management

CAATs implementation – Audit of Claims
• Look for easy data-rich business processes

CAATs training – in-house sharing and formal hands-on courses

Audit Plan – consider CAATs, data available, useful analysis for raising observations

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IMPLEMENTING CAATS: SOME THOUGHTS

Start Now

- It is okay to start small but one should start with what you already have or with a small pilot
- Learning from doing (and making small mistakes) is part of the journey

Mindset vs. Technology/Skills

- It is about changing mindsets to be open to technology/new approaches that is key in success
- Convincing people to adopt a data-driven vs. intuition approach is important

Lead by Example

- Helpful to walk the talk
IMPLEMENTING CAATS: SOME THOUGHTS

- Resources to get started – consider the following authors
  - ISACA IT Auditing Standards, Guidelines
  - David Codre
  - Mark Nigrini
YOOONG EE CHUAN

Email: yekker@gmail.com
Mobile: 96882300 (Whatsapp/LINE)