Data Analytics and other Computer Assisted Audit Techniques (CAATs)

Tony Roberts
Director

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Introduction

Computer systems and their networks are an integral part of any enterprise at present, whether they are commercial, government, not-for-profit or otherwise. These systems are becoming more and more complex, and the volume of enterprise data captured and stored by these systems is exploding. This data is one of the most valuable assets an enterprise has.

More and more of the business processes that enable the enterprise to achieve the Board and Executive Management's objectives are being integrated into the computer systems, data and networks. Even the control functions related to the capture, storage and use of that data are integrated into the applications and technology infrastructure.

The compliance requirements for enterprises are also increasing rapidly, with the result that the integrity, confidentiality and availability of the enterprise data stores are becoming more and more important. The data can relate directly to the business processes of the enterprise, or it can be control information and log files about the operations of the computer systems and networks.

To understand the effective operation of the enterprise, management and audit must use the data, both transactional and control data stored in the computer systems and networks.

Data Analytics and Computer Assisted Audit Techniques (CAAT's) provide auditors with the ability to directly access this data and control information. The absence of CAATs can result in the enterprise data remaining a series of zeroes and ones to the audit professional.

Why Use CAATs

In the audit environment, more and more internal control functions are being integrated into the computer applications and the infrastructure that supports those applications. Auditors can use CAATs to access the data files recording the business transactions to extract and analyse data to support their audit conclusions.

CAATs permit auditors to increase their productivity as well as that of the audit function. For example, CAATs may automate previously manual audit tests reducing total audit hours expended. They enable auditors to test 100 percent of the population rather than a small sample, thereby increasing the reliability of conclusions reached from that test. In addition, CAATs may be used to select sample transactions meeting specific criteria, sort transactions with specific characteristics, obtain evidence about control effectiveness, and evaluate inventory existence and completeness.

The Institute of Internal Auditor's updated their professional practice standard effective 1 January 2009, where in section 1220.A2 the word "should" was replaced with the word "must". This section now states that "internal auditor's must consider the use of computer assisted technology-based audit tools and other data analysis techniques when conducting internal audits". The Australian Auditing Standards such as ASA 240, ASA 300 and ASA 315 encourage the use of CAATs and the AICPA audit standards encourage auditors to adopt CAATs to improve audit efficiency and effectiveness.

When a CAAT Becomes a Dog

CAATs have been in existence for many years. Although they are an extremely valuable tool in the hands of an experienced practitioner, many audit professionals have been disillusioned by unsuccessful attempts to implement CAATs and are therefore cautious about their use.

There are several reasons for this disillusionment:

- Projects that significantly exceed their budgets;
- Projects that are late or not delivered; and
- Projects that fail to meet the objectives set for the application.

These issues can arise for a number of reasons, but most commonly they occur as a result of:

- Using accounting trained personnel with limited experience in IT;
- Using purely technical personnel to develop applications to achieve audit objectives;
- Deficiencies in the planning for the application;
- Difficulties in data capture and data interpretation; and
- Reliance on IT personnel who "know" what the auditor wants.

These days, with the improved software and PC based systems that are available, CAATs have become an extremely valuable and viable tool in the auditor's kitbag.

Example Use of CAATs

CAATs are an exceptionally powerful tool in the hands of a sophisticated auditor or forensic accountant. Historically, with host based CAAT applications, long lead times could be experienced in their development and implementation and result in budget overruns. With the current PC based tools and utilities that are available, CAATs have become a much easier tool to utilise by the audit professional. The significant advantage of a CAAT is that the audit professional has access to 100% of the data, which means that exception and out-of-bounds transactions can be easily identified for further audit investigation. Some of the other tests that can be effectively applied using CAATs are:

- Identification of duplicate transactions;
- Transactions approved by unauthorised personnel;
- Transactions with incomplete or incorrect data fields;
- Identification of changes to master files, banking details and other critical data fields
- Selection of samples such as the top twenty transactions or balances;
- Application of sampling methods such as monetary unit sampling;
- Analysis of log files and audit trails;
- Identification of missing or null value master records such as names and addresses;
- Re-performance of aging analysis of receivable balances;
- Stratification of data;
- Testing of Benford's Law;
- Testing compliance of component settings;
- Forensic data analysis;
- Parallel simulation of a processing step; and
- Addition and summarisation of data to confirm control totals and population totals.

The range of audit and forensic tasks that can be achieved using CAATs is only limited by the imagination of the audit professional or forensic accountant. The auditor should establish the objectives of an application and define how the application relates to the overall work program. The effective implementation of a CAAT application requires a strong technical capability to interpret the audit requirements and develop and implement the application to achieve those requirements.

About Assure4

Assure4 was established following a need identified by a group of senior professional services practitioners for a professional services firm to provide independent advice on Technology Risk and Assurance within the Information Technology and Corporate Governance market place.

In particular:

- Assure4 is a specialist independent professional services firm specialised in IT Governance and Compliance, IT Security and Risk Management;
- Assure4 will help your organisation manage the IT risk landscape while still balancing the need to achieve financial success;
- Assure4 means outstanding independent capability free from conflicts of interest; and
- Assure4 professional personnel are recognised for their credentials, leadership and excellence throughout their careers.

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Assure4 provides specialist consultancy services in all facets of IT Security and Risk Management, including:

- Business Continuity Management and Disaster Recovery Management;
- Information Security Management;
- Technology Risk Management;
- General Controls Reviews;
- Application Control Reviews;
- Third Party Reviews;
- Pre-implementation Reviews;
- Post-Implementation Reviews;
- IT Governance;
- Technology Change Management Reviews;
- IT Audit and Internal Audit; and
- Data extraction and analysis (CAATs).

Contacting Assure4

To find out how Assure4 can contribute to your Technology Risk and Assurance projects, please call:

Tony Roberts
mobile: 0411 229 396
email: tony.roberts@assure4.com