PRESENTATIONS

Alexander Kogan

Professor of Accounting Information Systems, Rutgers Business School

Privacy-preserving Information Sharing within an Audit Firm

This presentation explores the possibility of sharing firm-level information within an audit firm in a privacy-preserving manner and demonstrates the benefits of such sharing under the assumption that the same audit firm serves multiple clients competing in the same industry. We observe significant improvements due to sharing contemporaneous information from peer companies both in estimation accuracy and error detection performance. Additionally, we propose a sharing scheme for utilizing contemporaneous accounting information from peer companies without violating clients' confidentiality. We

find that auditors can achieve comparable level of benefits both in estimation accuracy and in error detection performance by only sharing estimation residuals (errors) with that achieved by sharing predicted or actual accounting numbers.

Gavin Steinberg

Managing Director, Satori Group

5 years later and where is CCM now trending?

Joscha Frischherz

Manager, KPMG Analytics, Information & Modelling

Detecting fraud through data analytics

Fraud cannot be entirely prevented in an organisation, which is why entities need to implement measures for detection. Data analytics and continuous auditing solutions can be a powerful tool to detect and disrupt fraudulent activity. However, many organisations fail to implement data analytics effectively, then rely on the lack of results for assurance that they have no issues, giving them a false sense of security. Recent publications have identified that proactive, fraud-focused data analytics was responsible for detecting only three percent of identified frauds.

This presentation shares some of the possible factors behind why a lot of organisations haven't been successful in using analytics to detect fraud. It explores the four anchors of trust, which are paramount in implementing a successful analytics system. The presentation will be drawn from KPMG AIM and Forensic team's experience implementing fraud detection and compliance systems, supplementing the theoretical approach with real life examples in helping to combat fraud.

Kevin Moffitt

Assistant professor in the Accounting and Information Systems department in the Rutgers Business School

Text Mining Applications for Audits

I present examples of Rutgers text mining research that has direct applications to the internal and external audit functions.

First, we developed an application with a large multinational bank to detect malicious COBOL code. We detected fraudulent patterns of code using regular expressions in an Excel VBA application. We created a model on the fraudulent code detection process.

Second, we developed a tool and a model for automated contract analysis. Auditors often lack the resources to audit all contracts. Our tool is a proof of concept for automatically extracting data from similar contracts and our model provides a roadmap for auditors to use this and similar technology in the audit.

Third, preliminary findings from a current research project demonstrate a new method for estimating company risk profiles. We developed an automated method for creating industry-level risk categories. Using these as a baseline, company risk profiles are generated for use in the planning stage of the audit.

Kishore Singh

Lecturer, Griffith Business School

Interactive visual analysis of anomalous accounts payable transactions in SAP enterprise systems

Modern ERP systems record several thousands of transactions daily. This makes it difficult to find a few instances of anomalous activities among legitimate transactions. Although CA/CM systems perform substantial analytics, they often produce lengthy reports that require painstaking post-analysis. Approaches that reduce the burden of excessive information are more likely to contribute to the overall effectiveness of the audit process. We address this issue by demonstrating the use of visualization to present information graphically. The strength of our approach is its capacity for discovery and recognition of new and unexpected insights. Data was obtained from the SAP ERP system of a real-world organization. A framework for performing visual analytics was developed and applied to the data to determine its usefulness and effectiveness in identifying anomalous activities.

The study provides valuable insights into understanding the use of different types of visualizations to effectively identify anomalous activities. However, as this study emphasizes asset misappropriation, generalizing these findings to other categories of fraud, such as accounts receivable, must be made with caution. The study demonstrates the need to understand the effectiveness of visualizations in detecting accounting fraud. This is directly applicable to organizations investigating methods of improving fraud detection in their ERP systems.

Marty Conneely

Director, Aginic

Changing the direction of Risk and Control Analytics. Business led, rapid deployment, immediate value

Using real case studies and practical demonstrations Marty will provide an overview of a more agile and rapid approach to risk and control analytics, achieving value for not only Internal Audit but providing valuable insights back to the rest of the business.

Matt Loeb

Chief Executive Officer at ISACA

As Technology Changes Audit, so Must the Auditor Change

Technology isn't just revolutionising audit; it is reshaping it. Not only are there new technologies being adopted within business that impact organisational risk, but technology changes are likewise bringing about changes to the techniques auditors use to fulfil their roles. These changes will have a profound impact on professionals within the audit community in the years ahead.

To be most effective at keeping the organisation protected, auditors not only have to change what they do, but, in many cases, how they do it. There will be a need to adapt, to redefine, and to adjust to an evolving digital economic landscape. New methods will emerge, new risks will come to light, and the need for technical skills and business acumen will increase.

Yes, technology is indeed changing audit. And it is imperative for Auditors to take the steps necessary to change themselves and to reframe and demonstrate the value they deliver.

Miklos Vasarhelyi

Director of the Rutgers Accounting Research Center (RARC) and Continuous Auditing and Reporting Laboratory (CARLAB)

Audit 4.0: New Opportunities for Auditing

Advances in Cyber-Physical Systems (CPS), Internet of Things (IoT), Internet of Service (IoS), and Smart factory promote a new industry revolution, the “industry 4.0”. Industry 4.0 not only changes manufacturing environment, but also generates a new value chain mode, and eventually will affect the whole business world. Current audit procedures should be changed to adapt to the new business world. Audit profession has many opportunities to utilize equipment and infrastructures that have been implemented for Industry 4.0 to facilitate audits by reducing efforts, enlarge scope, and improve quality.

This paper adopts the four organizing principles from Mauldin and Ruchala’s (1999) meta-theory accounting information systems (AIS) model to examine how audit 4.0 will impact the auditing environment, identify emerging audit practice challenges, and outline new research opportunities.

Peter Best

Professor and Head of Discipline Accounting, Griffith University

Practical Applications of Data Visualization

This session demonstrates the technical feasibility of implementing multi-view visualization methods to assist auditors in reviewing the integrity of high-volume accounting transactions. Modern enterprise resource planning (ERP) systems record several thousands of transactions daily. This makes it difficult to find a few instances of anomalous activities among legitimate transactions. Although continuous auditing and continuous monitoring systems perform substantial analytics, they often produce lengthy reports that require painstaking post-analysis.

Approaches that reduce the burden of excessive information are more likely to contribute to the overall effectiveness of the audit process. This session explores the use of visualization methods to present information graphically, to assist auditors in detecting anomalous and potentially fraudulent transactions. The use of open source visualization software for this purpose is illustrated.

Shrikant Deshpande

IT Audit, Risk and Information Security Consultant

Continuous Auditing in the Cloud

Cloud Computing is characterised by key attributes like On–Demand Self service, Broad Network Access, Resource Pooling, Rapid Elasticity and Measured Service. These attributes of disruptive Cloud Computing technology are also challenging the traditional auditing, assurance and governance models. Concomitant with shift in the mindset and processes involved in managing corporate and customer data, application development lifecycle, technology architecture, infrastructure, and data centers, the assurance models will need to change. Many traditional audit practices are becoming less relevant due to new cloud paradigm associated with third party ownership of computing assets, data dispersion in multi jurisdiction, lesser visibility of computing assets and in some cloud models partial loss of ownership and control over operations and processes.

The role of Cloud Auditor is getting redefined. Automated security management, provisioning of digital trust and security monitoring technologies for cloud are evolving, however, there is a need to rethink traditional auditing and reinvent audit practices to address advance cloud computing models businesses are deploying today.

The objective of this presentation is to take a high level view of the change being introduced in traditional auditing by cloud computing and explore the need and opportunities for considering Continuous Auditing in cloud environment to satisfy stakeholder assurance needs.

Won Gyun No

Assistant Professor of Accounting Information Systems, Rutgers

Multidimensional Audit Data Selection (MADS) Analytic Framework

With the advance in data processing ability and data analytics techniques and tools, auditors no longer have to be limited to the traditional sampling approach but can now examine the entire population when performing substantive tests of details. While techniques introduced in prior studies are effective in helping auditors detect outliers (i.e., suspicious transactions/data), they often generate large numbers of outliers, which is often impractical for auditors to investigate the outliers in their entirety. To help auditors effectively deal with large amounts of data and efficiently handle a massive number of outliers, this study proposes a multidimensional data prioritization methodology. To the end, we introduce a Multidimensional Audit Data Selection (MADS) analytic framework to guide auditors in the identification of outliers that are more likely to be problematic. By allowing auditors to focus their efforts on the outlier candidates that are more likely to be

at risk of misstatement or deviation, the MADS methodology helps reduce not only the risk of incorrect acceptance (i.e., failing to detect material misstatement) but also the risk of incorrect rejection (i.e., incorrectly detecting a statement that is not materially misstated).