A Framework for the Assessment and Utilization of New Investigative Tools

Research Project for Emerging Issues/Advanced Topics Course

Diploma in Investigative and Forensic Accounting Program

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INTRODUCTION

OBJECTIVE

The purpose of this report is to develop a conceptual framework for the assessment and utilization of new investigative tools and techniques, applicable to Canadian Forensic Accountants.

BACKGROUND

As demand for Investigative and Forensic Accounting services grows, more practitioners will enter the market. Forensic Accountants will look to emerging technologies and practices in order to differentiate themselves in a competitive market as well as to help them operate efficiently.

It is important that any new tool or technique fit within the legal framework and comply with professional practice standards. A negligent Forensic Accountant will not only bring themselves into disrepute, but they may also erode public confidence in the profession as a whole. Consequently, the profession has much to gain from standard setting and sharing best practices. As a member of this profession, I would like to contribute to its fruitful growth and prosperity.

The primary regulating body for Forensic Accountants in Canada is arguably the Alliance for Excellence in Investigative and Forensic Accounting ("the Alliance"). It is important for this body to provide guidance around the appropriateness of investigative tools. This guidance will eventually form part of Forensic Accounting Handbook standards. As such, prior to studying investigative tools, it is necessary to set out the current standard setting environment in Canada and globally.

SUMMARY OF FINDINGS

- We must use IFA failures as motivation for the creation of a conceptual framework for standard setting and a Framework for the Assessment and Utilization of New Investigative Tools ("Framework").
- Legal actions will likely be launched in future against Forensic Accountants that have failed to detect fraud.
- Future legal actions may result in scrutiny of the tools and analyses used by Forensic Accountants.
- The Framework will help ensure defensibility and promote the reputation of the profession through consistent, high quality, work
- As investigations are increasingly on a global scale, standards regarding investigative tools should be harmonized, along with other standards.
- The global standards environment is currently fragmented. The Alliance must play a leadership role in both standard setting and harmonizing standards.
- Although the Forensic Accounting industry changes slowly over time, there have been changes in investigative tools in the past and there will, most certainly, be changes in the future.
- To date, regulating bodies and associations have focused primarily on codes of ethics and best practices.
- Both EnCase and Benford's Law (as part of a software package) should be approved by the Alliance for usage pending independent testing by a Computer Forensics expert.

ANALYSIS

IFA FAILURES – THE NEED FOR A CONCEPTUAL FRAMEWORK AND STANDARDS

Mattco Forge, Inc. v. Arthur Young & Co.

In September 1985, Mattco Forge ("Mattco"), a parts manufacturer, commenced a civil rights action against General Electric ("GE"), a company to which Mattco supplied parts. Mattco claimed that GE cancelled Mattco's contract based on the race of Mattco's owner. The case was dismissed in March 1989 after GE alleged that Mattco had fabricated documents with the assistance of its Forensic Accountant, Arthur Young. In July 1989, Mattco initiated a lawsuit against Arthur Young in Los Angeles Superior Court alleging professional negligence and other actions. In June 1994, a jury awarded $42 million to Mattco, including punitive damages. This ruling was reversed in February 1997 based on trial court error in ruling that Mattco was not required to establish that had Arthur Young acted reasonably, Mattco would have won their case against GE (the so-called "trial-within-a-trial" burden).[1]

The above-noted litigation sets an important precedent and acts as a wake-up call to the Forensic Accounting profession. Although the case focuses on calculating damages rather than performing investigations, it is clear that lessons learned apply just as well to investigative work and all other services performed by Forensic Accountants. Although this case was tried in California against American accountants, Canadian Forensic Accountants should use it to ensure that this scenario does not repeat itself in Canada.

[1] Mattco Forge, Inc. v. Arthur Young & Co. Court of Appeal of California, Second Appellate District, Division Three, Decision dated February 7, 1997. Retrieved May 15, 2003 from Quicklaw database.

In Superior Court, it was found that the Arthur Young partner misrepresented the firm's expertise in litigation support work by providing Mattco's owner with a "glossy promotional brochure" when the person assigned to the Mattco file had "no training or experience in litigation support."[2] This formed the basis for a 'fraudulent misrepresentation' cause of action. When the Arthur Young staff member could not locate 26 estimate sheets for GE jobs, he asked Mattco's owner to recreate them. These documents were relied upon in calculating Mattco's economic damages from the loss of the GE contract. These workups were combined with original job sheets and submitted to opposing counsel upon discovery. The Arthur Young partner did not review the package prior to sending it to Mattco lawyers. The Arthur Young staff member did not communicate the fact that documents were fabricated nor did he date the fabricated documents. This formed the basis for the professional negligence malpractice cause of action. Finally, the Arthur Young partner's failure to communicate his reliance on the recreated job estimates in computing damages formed the basis for the fraudulent concealment cause of action.[3]

Federal Judge Richard Gadbois "found that "in an attempt to fraudulently increase the damages they seek, [Mattco and Minguez] altered and fabricated estimate sheets used to help calculate damages. The Court further [finds] that [Mattco & Minguez] knowingly produced those false estimate sheets to [GE], and thereby perpetrated a fraud upon defendants, this Court, and the judicial process. It is also undisputed that [Mattco and Minguez and Lamping] relied on the fabricated estimate sheets in calculating their

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[2] Mattco Forge, Inc. v. Arthur Young & Co. Court of Appeal of California, Second Appellate District, Division Three, Decision dated February 7, 1997. Retrieved May 15, 2003 from Quicklaw database.
[3] Mattco Forge, Inc. v. Arthur Young & Co. Court of Appeal of California, Second Appellate District, Division Three, Decision dated February 7, 1997. Retrieved May 15, 2003 from Quicklaw database.

damages. The Court finds the foregoing actions of [Mattco and Minguez] have irreparably tainted all of the evidence produced up to this point by [Mattco and Minguez and] the Court feels dismissal of the [Mattco and Minguez's] case would be appropriate. [Mattco and Minguez's] conduct was willful and in bad faith. Damages are central to the matters in controversy between the parties and fraudulent evidence of damages would directly interfere with the rightful decision of the case . . . Due to the overwhelming taint [Mattco and Minguez] have placed upon their evidence concerning damages, no such evidence of damages previously produced or prepared for this action shall be admitted in this action. . .Due to the intimate involvement of the accounting firm of Arthur Young in the production of [Mattco and Minguez's] evidence concerning damages, Arthur Young is prohibited from involvement in any future production of evidence concerning [Mattco and Minguez's] damages in this action, and no work papers, files, or any other materials produced by Arthur Young in the past to calculate [Mattco and Minguez's] damages shall be used in any future production of evidence on that subject. . . For the purpose of compensating [GE] for the litigation costs they have borne due to [Mattco and Minguez's] misconduct, [GE] will submit to the Court an accounting of its attorneys' fees, costs and expenses relating to the production of evidence concerning [Mattco and Minguez's] damages in this action.'"[4]

The American Institute of Certified Public Accountants published an article in their Journal of Accountancy dated July 1, 1997 claiming that the reversal of the trial court's decision to be "...a victory for the accounting profession in general and accountants

[4] Mattco Forge, Inc. v. Arthur Young & Co. Court of Appeal of California, Second Appellate District, Division Three, Decision dated February 7, 1997. Retrieved May 15, 2003 from Quicklaw database.

performing litigation services in particular."[5] While the precedent that plaintiffs must prove they would have succeeded in the underlying trial creates an additional burden towards proving accountant malpractice, the victory is analogous to a criminal being excused because police could not find the murder weapon. The fact remains that the individual committed the murder. The behaviour should be punished and standards should be in place to protect society and to reform the behaviour. In the Mattco case, Arthur Young is the criminal. It is not sufficient to claim victory when the profession knows they have been negligent. Claiming victory merely deters accountants from focusing on the underlying issue, that of negligence. Forensic Accountants have not won in this case. They will not win until standards are established and all practitioners are held to those standards. Clearly, the court has established negligent behaviour in this case. And, this behaviour could have occurred just as easily in a case where the client would have won their underlying case, absent the malpractice. Accountants have lost to the extent that they view this as a victory and do not establish standards. This applies to all services provided by forensic accountants, not simply damages.

In the United States, expert witnesses have historically been able to hide behind the witness immunity doctrine. The Mattco case has removed this shield and should force forensic accountants to regulate their industry. If they do not, the courts will continue to do it for them. The purpose of the witness immunity rule was to "encourage witnesses to come forward without fear of later actions."[6] Expert witnesses are compensated

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[5] Wayne Baliga. (July 1, 1997) Victory for CPAs in litigation services. (certified public accountants, Mattco Forge v. Ernst & Young) (California). *Journal of Accountancy*. Retrieved May 15, 2003 from Factiva database.

[6] Janis Wilson, Esq. (January 14, 2002). United States: Hired Guns, Once Protected by the Witness Immunity Doctrine, Can Become Targets. *Mondaq Ltd.* Retrieved May 13, 2003 from Quicklaw database.

sufficiently for their work that this incentive is no longer necessary. In addition, "the common law witness immunity rule did not envision this type of error which may not be detected until long after the case has been resolved."[7] "While the witness immunity rule also served to prevent subsequent lawsuits, the rule has left parties without redress for clearly demonstrable mistakes. In light of these developments, the courts have allowed minor alterations to the traditional rule."[8]

JMJ Enterprises, Inc. v. Via Veneto Italian Ice, Inc.

The case of 'JMJ Enterprises, Inc. v. Via Veneto Italian Ice, Inc.' was heard in the United States District Court for the Eastern District of Pennsylvania. Defendant Via Veneto Italian Ice, Inc. brought forth a motion to disallow the Plaintiff's expert report and bar the plaintiff from presenting expert evidence. This motion was granted as the court found that "LaRosa was acting as an advocate, and not as an objective evaluator of evidence."[9] The judge also found that "LaRosa did not point to reliable evidence that would bridge the gap between the facts and his conclusion. Without evidence, LaRosa's success story is pure speculation. LaRosa's testimony would not be helpful to the trier of fact and thus, it is not admissible."[10] This case provides additional support for the need for standards and best practices.

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[7] Janis Wilson, Esq. (January 14, 2002). United States: Hired Guns, Once Protected by the Witness Immunity Doctrine, Can Become Targets. *Mondaq Ltd.* Retrieved May 13, 2003 from Quicklaw database.
[8] Janis Wilson, Esq. (January 14, 2002). United States: Hired Guns, Once Protected by the Witness Immunity Doctrine, Can Become Targets. *Mondaq Ltd.* Retrieved May 13, 2003 from Quicklaw database.
[9] JMJ Enterprises, Inc. v. Via Veneto Italian Ice, Inc. United States District Court for the Eastern District of Pennsylvania, Decision dated April 15, 1998.
[10] JMJ Enterprises, Inc. v. Via Veneto Italian Ice, Inc. United States District Court for the Eastern District of Pennsylvania, Decision dated April 15, 1998.

Discussion with William C. Dovey, FCA, CBV

The court system is the ultimate test of a forensic accountant's work. In the absence of forensic accountants regulating themselves, the courts will set standards to be followed. However, in the process, it may bring the profession into disrepute. While it may be argued that the courts will set forensic accounting standards regardless, the advantage of accountants' setting their own standards lies in having a defense to potential IFA negligence actions that lie ahead.

William C. Dovey, FCA, CBV of Cole & Partners and Advisor to the Alliance for Excellence in Investigative and Forensic Accounting noted in a May 15, 2003 interview, that the financial statement audit environment in Canada has come almost full circle from a time in which auditors were responsible for fraud detection to the attitude "it's not my job to find fraud", then to only having to deal with fraud if the auditor passively noticed evidence of fraud and now back to the post-Enron and Worldcom requirements to perform certain pro-active steps to ensure that fraud does not exist. Mr. Dovey offered the following with respect to standards and pro-active fraud work "...it doesn't provide you with insurance if you have standards but it provides you with...arguably, a defense..." "We do work in the first instance to meet a standard, and then maybe you go beyond that." "On the fraud side, one day somebody will come along and say I hired you to do a forensic investigation and you found nothing. And you should have found something." "If you begin to bake in forensic work into the audit, you can see this one coming. If they go after the auditor because he didn't find fraud, surely they're going to go after the forensic accountant if he can't find fraud." "I've yet to see one... it will happen." "On that case, standards cut two ways. If you don't have them, the guy suing you can't go to them and say you didn't follow them. By the same token, you can't use

them as a defense." With respect to how much work Mr. Dovey would consider reasonable on a fraud investigation, he noted "...How do you write a standard for that... or, do you simply say, when asked to look for a fraud you take sufficient, appropriate steps?" "Which doesn't help you very much." Mr. Dovey stated this as an example of the difficulty in actually applying a conceptual framework. Mr. Dovey noted that a body of knowledge of auditing standards has developed that at times can be very specific in its application. For example, Generally Accepted Auditing Standards provide guidance on the amount of inventory to count as part of an audit. The point at which sufficient work has been performed in a financial statement audit context is, "by and large, simple, as opposed to...how much work do I do to find a fraud that I don't even know existed...I don't know how it happened, in the context of records that have been blown sky high, by and large, are fragmented and in pieces and not complete, I don't know the answer."

The Enron and Worldcom failures are driving requirements that are effectively increasing auditor responsibility to detect fraud. As a result, it is clear that forensic accountants are going to practice increasingly in the area of pro-active fraud auditing. It is also inevitable that forensic accountants will fail to detect fraud in some cases. We must ensure that this failure is not due to negligence, as happened in Mattco Forge, but rather due to the nature of fraud. Due to its nature, a fraud may be concealed and it may be cost-prohibited to detect. Mattco Forge was an example of an accountant operating outside their area of expertise. This could just as easily occur in the field of investigations. Standards will provide forensic accountants with a defense in any negligence action that the work the accountant performed was sufficient and reasonable.

CURRENT STANDARDS ENVIRONMENT IN CANADA

The current standards environment for Forensic Accountants in Canada is fragmented. The Canadian Institute of Chartered Accountants' ("CICA") Alliance for Excellence in Investigative and Forensic Accounting, the Canadian Chapter of the Association of Certified Fraud Examiners, and the provincial Chartered Accountant Institutes, together with countless other bodies, all have issued or are in the process of issuing standards that affect the IFA to varying degrees.

That being said, as the ultimate test of the Forensic Accountant's work is the court system, common law precedents act as the ultimate standards. For example, the Mohan test on the admissibility of expert evidence and the case law regarding Spoliation of evidence establish IFA guidelines around expertise and training as well as document retention. Statute law such as the Ontario Private Investigators and Security Guards Act can also be the source of standards.

Alliance for Excellence in Investigative and Forensic Accounting

The Alliance was given responsibility for setting Forensic Accounting standards by the CICA. The Alliance issued a discussion paper entitled 'Proposal for the development of standards in investigative and forensic accounting' in September 2001 outlining proposed standards. The discussion paper was the first attempt at establishing standards since the Investigative and Forensic Accounting Interest Group, a predecessor to the Alliance, issued Practice Aid 95-01 in 1995. The Practice Aid included general standards and best practices with respect to engagement acceptance, engagement conduct, reporting, and testifying as an expert witness. The 2001 discussion paper proposed general, performance, and reporting standards similar to Generally Accepted Auditing Standards set out in section 5100 of the CICA Handbook. The standards are currently being

redrafted based on significant criticism of the first draft. Mr. Dovey noted that a working committee drafted the standards. He commented, "the task was far larger than the resources." This study group did some work and then returned the paper to the board. The problem, according to Mr. Dovey, was that "it was probably too big a chunk to be done so quickly." "There was a sense that it was far more detailed as opposed to the framework and broad direction that you wanted to make sure you were comfortable with first." Mr. Dovey noted that ethics were covered by the general CA rules of professional conduct. According to the Alliance Annual Report issued in September 2002, one of the 2003 priorities is to "issue a conceptual statement about standards for investigative and forensic accounting engagements and commence developing standards."[11] There are currently no specific standards for investigative tools although the standards being drafted are intended to cover investigations. Nor is there a conceptual framework for the assessment and utilization of investigative tools and techniques. Chris Hicks, a CICA staff member with responsibility for specialization projects at the CICA, indicated that the primary problem with the discussion paper was the definition of IFA engagements. This definition focused solely on engagements where a dispute or legal action was contemplated or actually occurring. Respondents wished to expand this definition to include "IFA consulting engagements such as fraud risk assessment engagements"[12] and pro-active fraud auditing, a new requirement under Canadian and US Generally Accepted Auditing Standards.

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[11] Alliance for Excellence in Investigative and Forensic Accounting. (September 2002) Annual Report. Retrieved April 24, 2003, from http://www.cica.ca/multimedia/Download_Library/Specialization/IFA//CA-IFA-AnnRpt2002_E.pdf.

[12] Alliance for Excellence in Investigative and Forensic Accounting. (September 2002) Annual Report. Retrieved April 24, 2003, from http://www.cica.ca/multimedia/Download_Library/Specialization/IFA//CA-IFA-AnnRpt2002_E.pdf.

Association of Certified Fraud Examiners – Canadian Chapters

The Canadian Edition of the CFE Fraud Examiners Manual sets out best practices to be followed when conducting both proactive and reactive fraud investigations. In contrast with the Alliance for Excellence in Investigative and Forensic Accounting, the Association of Certified Fraud Examiners does not set out standards and practices for damages work. Certified Fraud Examiners ("CFE") are qualified to investigate fraud. However, they do not have expertise in loss quantification. According to Chris Hicks, in the United States, where the CFE designation originates, there is a much greater split between damages work and investigative work. Despite the comprehensive discussion of investigative standards including document analysis, interview techniques, accessing information, funds tracing, and reporting, there is no conceptual framework for establishing standards. Nor is there a conceptual framework for the assessment and utilization of investigative tools and techniques. The Association of Certified Fraud Examiners has a Code of Professional Ethics applicable to all members. The Association has also set out General and Specific Professional Standards and Practices that, while not a conceptual framework, sets out standards such as independence, objectivity, confidentiality, due care, and ensure proper qualifications.

Institute of Chartered Accountants of Ontario
Professional Conduct Committee

The Institute of Chartered Accountants of Ontario is the provincial body that governs Chartered Accountants in the province of Ontario. As a self-regulating profession, Chartered Accountants protect the integrity of their profession, among other activities, through "a comprehensive and well-resourced disciplinary process that, through experienced members the profession and public representatives, deals on a timely basis with complaints and other matters concerning the professional conduct of members, students and firms."[13] A Professional Conduct Committee investigates all complaints that may indicate a violation of the rules of professional conduct, regulations, or by-laws. This committee also advises members as to proper behaviour or to the application of rules to a specific situation. "Where the subject matter of the complaint is complex or serious, the committee may appoint an investigator to obtain detailed information, including statements and supporting documents, from all parties to the matter."[14] The ICAO has published an 'Investigation Procedures' Handbook that sets out procedures that an investigator should follow when conducting an investigation. These procedures cover planning, interviewing, gathering evidence, organizing evidence, note-taking, and reporting. This document differs from the CFE Fraud Examiners Manual in its degree of specificity. The Fraud Examiners Manual provides suggestions however the ICAO procedures require very specific practices. For example, "Suggest using a separate standard steno pad (Grand & Toy #99101) for each investigation and mechanically pre-

[13] The Institute of Chartered Accountants of Ontario 'Complaints Investigation and Disciplinary Procedures – Information for Complainants, Members, Students, and Firms' guide. (n.d.)
[14] The Institute of Chartered Accountants of Ontario 'Complaints Investigation and Disciplinary Procedures – Information for Complainants, Members, Students, and Firms' guide. (n.d.)

number the pages, before staring the investigation."[15] Also, "Investigators retained by the professional conduct committee are now instructed to tape record all interviews with members under investigation unless specifically instructed otherwise in the engagement letter."[16]

When asked whether any standards exist with respect to investigations, Mr. Dovey replied "I've not seen any at all." "In investigative jobs, you tend not to reach conclusions. You tend to reach findings of fact. You never say the guy's guilty." It was agreed that an important standard would be that the investigator should never come to a finding of guilt or innocence. The investigator's job is to bring the facts to bear so that a court or tribunal can draw legal conclusions. Mr. Dovey added "...in the early days you would find accountants quoting the criminal code definition of fraud and concluding on it. They didn't last long in the profession." It is important for forensic accountants to understand fraud and the law. However, it is beyond the investigator's expertise to make legal judgments. Mr. Dovey explained, "One of the toughest (standards) though will be how much work? Here's a fraud. How much work do you do?" "How do you define the standard that you would have to achieve as far as scope of work goes in order to fight a negligence claim if somebody said you didn't find (fraud)?"

[15] The Institute of Chartered Accountants of Ontario (June 2002) 'Investigation Procedures' handbook, p. 5.
[16] The Institute of Chartered Accountants of Ontario (June 2002) 'Investigation Procedures' handbook, p. 7.

CURRENT STANDARDS ENVIRONMENT IN THE UNITED STATES

American Institute of Certified Public Accountants

According to Mr. Dovey, in the United States, the American Institute of Certified Public Accountants "...initially struck up a relationship with the ... Association of Certified Fraud Examiners... the ACFEs provided content for the AICPA education programs." With the respect to the AICPA's relationship with the Alliance for Excellence in Investigative and Forensic Accounting, "That was a concern here because we saw the potential to link with the AICPA." "The AICPA said what you guys (the Alliance) are doing is far too rigorous for what we want to do." The Alliance was also told, "The numbers are too small in the States for us to make this work." Mr. Dovey explained, "The AICPA is not as significant a national body as the CICA." With respect to published standards, the AICPA issued Consulting Services Practice Aids 93-4 entitled "Providing Litigation Services" which "defines and explains the CPA's functions in the civil litigation process."[17] This deals primarily with damages work. The AICPA also issued Consulting Services Practice Aid 97-1 entitled "Fraud Investigations in Litigation and Dispute Resolution Services, A Non-authoritative Guide." In any case, although the AICPA regulates Certified Public Accountants in the United States, Forensic Accountants are, by-and-large, regulated by the Association of Certified Fraud Examiners.

Association of Certified Fraud Examiners

The Association of Certified Fraud Examiners is closely linked with the AICPA in the United States. Mr. Dovey offered, "My recollection of the ACFE standards are it really

[17] American Institute of Certified Public Accountants, Inc. (1993) Consulting Services Practice Aid 93-4 "Providing Litigation Services", p. 70/100-1.

isn't the kind of standard setting process that we would look at and say has the rigour and conceptual purity to it and so on." According to the ACFE website, the Association was established in 1988 and is based in Austin, Texas. It describes itself as a "28,000-member professional organization."[18] The ACFE Code of Professional Ethics requires professionalism, diligence, integrity, and confidentiality among its tenants.[19] The ACFE has a practice manual that includes best practices for investigations. However, there does not appear to be a framework for the assessment of investigative tools.

American College of Forensic Examiners International

The purpose of the American College of Forensic Examiners International ("ACFEI") is "the continued advancement of forensic examination and consultation across the many professional fields of our membership."[20] This not-for-profit organization "actively promotes the dissemination of forensic information."[21] The ACFEI offers Certified Forensic Accountant certification. This certification is open to those with accounting-related certificates and those without with a Bachelor's degree in Business or 10 years of accounting experience. An exam must be taken and there are continuing education requirements. This organization has Principles of Professional Practice that address objectivity and conflicts of interest. However, there do not appear to be any standards nor does there appear to be a framework for assessing investigative tools.

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[18] *Association of Certified Fraud Examiners – About us.* (n.d.) Retrieved May 14, 2003, from http://www.cfenet.com/about/about.asp.
[19] *Association of Certified Fraud Examiners – Code of Professional Ethics.* (n.d.) Retrieved May 14, 2003, from http://www.cfenet.com/about/codeethics.asp.
[20] *American College of Forensic Examiners International* (n.d.) Retrieved May 14, 2003, from http://www.acfei.com/main.php.
[21] *American College of Forensic Examiners International* (n.d.) Retrieved May 14, 2003, from http://www.acfei.com/main.php.

Center for Interviewer Standards & Assessment, Ltd.

"The mission of the Center for Interviewer Standards and Assessment ("CISA") is to provide standards and principles for comprehensive investigative interviewing in both the private and public sector."[22] The CISA offers Certified Forensic Interviewer certification in order "to create comprehensive, universally accepted professional standards combined with an objective measure of an interviewer's knowledge of those standards."[23] CISA has published a Code of Ethics and Standards of Practice. The Code of Ethics includes professionalism, not engaging in illegal behaviour, and unbiased. It does not appear that the Center has created a framework for the assessment of new interviewing techniques.

[22] *Center for Interviewer Standards & Assessment, Ltd.* (n.d.) Retrieved May 14, 2003, from http://www.certifiedinterviewer.com/cisa.htm.
[23] *Center for Interviewer Standards & Assessment, Ltd.* (n.d.) Retrieved May 14, 2003, from http://www.certifiedinterviewer.com/.

CURRENT STANDARDS ENVIRONMENT IN AUSTRALIA

Australia appears to be the most advanced country in the world with respect to standard setting for forensic accountants.

The Institute of Chartered Accountants in Australia
The Forensic Accounting Special Interest Group

In July 2002, the Institute of Chartered Accountants in Australia ("ICAA") issued APS 11 'Statement of Forensic Accounting Standards', and related Guidance Note 2 'Forensic Accounting'. APS 11 outlines both General Standards and Performance Standards with respect to Forensic Accounting engagements. Significant differences between Canada and Australia with respect to the definition of Forensic Accounting Services include the following:

- Australia includes 'valuation of shares and other assets' in its definition.
- Australia includes 'such other investigative work' in its definition. This may be interpreted to include pro-active fraud auditing.
- Australia excludes services of arbitration and conciliation whereas the Canadian discussion paper includes them.
- Australia differentiates between an independent accounting expert and a consultant accounting expert whereas the Canadian rules appear to apply solely to independent experts.

APS 11 makes notes that these Standards are mandatory and subject to disciplinary proceedings. The ICAA may be the first accounting body in the world to incorporate mandatory Forensic Accounting standards in its handbook. The Australian General Standards refer to the Code of Professional Conduct applicable to all Australian CPAs and forbid accepting engagements where an IFA has a conflict of interest. The standards

forbid performing engagements outside of an IFA's expertise. They also require reasonable care, confidentiality, and professional behaviour. A member shall not be associated with false or misleading information. With respect to Performance Standards, APS 11 requires properly trained, adequately supervised staff, and adequate documentation. With respect to estimates, APS 11 requires an assessment of their reasonability and adequate disclosure. Finally, APS 11 requires compliance with any court-imposed standards and an IFA's remuneration cannot be tied to the outcome of a matter.

While these standards are an important and diligent effort at IFA standard setting, they appear to focus more on damages and neglect the growing importance of investigative work. For example, global auditing standards are evolving to include more pro-active fraud audit work in response to recent corporate failures such as Enron and Worldcom.

The Australian Institute of Professional Investigators

Effective July 29, 2002, the Australian Institute of Professional Investigators (AIPI) and the New South Wales Chapter of Certified Fraud Examiners (CFE) merged to "increase the standard of fraud investigation in the private sector at a time when corporate fraud was increasing."[24] Among the new body's roles is to "develop a code of conduct for investigators."[25] The AIPI's mission statement is "To provide investigators with the on-going support, training and professional development required to raise the standards and public perception of the investigative profession and to provide a united response to

[24] Andrew Priest. (July 18, 2002). New National Body to Oversee Fraud Investigation in Australia. Retrieved May 14, 2003, from http://accountingeducation.com/news/news3080.html.
[25] Andrew Priest. (July 18, 2002). New National Body to Oversee Fraud Investigation in Australia. Retrieved May 14, 2003, from http://accountingeducation.com/news/news3080.html.

public debate on issues affecting the profession."[26] The AIPI has a code of ethics requiring integrity, reliability, law abidance, confidentiality, and professional conduct. There does not appear to be a framework for the assessment of investigative tools, nor any performance standards other than what is outlined in the Code of Ethics. The group is continuing to "develop a memorandum of understanding with the NSW Police to facilitate a partnership approach to conducting fraud investigations between the police force and the private sector."[27]

Charles Sturt University
Centre for Investigative Studies & Crime Reduction

According to the website, "The Centre for Investigative Studies and Crime Reduction is an initiative...to provide practical training and education for investigators and industry professionals from the areas of fraud, compliance, and criminal intelligence."[28] According to an article dated January 15, 2003 in the Sydney Morning Herald, the course "was established three years ago with the NSW Police to provide a core set of skills related to how investigations should be conducted, looking at relevant legislation and guidelines and ensuring graduates' investigation skills are at a high enough standard for their evidence to be accepted in court."[29] The Australian Institute of Professional Investigators uses this CISCR program as its educational program. The program is "recognized by law enforcement agencies and is incorporated in the NSW Police service

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[26] *Australian Institute of Professional Investigators - about.* (n.d.) Retrieved June 22, 2003, from http://www.aipi.asn.au/about.php
[27] Andrew Priest. (July 18, 2002). New National Body to Oversee Fraud Investigation in Australia. Retrieved May 14, 2003, from http://accountingeducation.com/news/news3080.html.
[28] *About Centre for Investigation Studies and Crime Reduction.* (n.d.) Retrieved May 14, 2003, from http://www.csu.edu.au/special/ciscr/about.html.
[29] Julie-Anne O-Hagan. (January 15, 2003). My Career – Postgraduate studies in fraud investigation. *The Sydney Morning Herald.* Retrieved May 5, 2003, from Factiva database.

studies."[30] "The NSW Police service has refocused its commitment to investigate corporate fraud-related offences...companies such as Ernst & Young will be called upon more often to investigate matters that traditionally would have been investigated by the police."[31]

Monash University
The International Institute of Forensic Studies

The ICAA, in conjunction with the Australian Advocacy Institute and Monash Law's International Institute of Forensic Studies, have developed the Graduate Certificate in Forensic Studies (Accounting), "the first degree of its kind in Australia...aimed specifically at professionals."[32]

[30] Julie-Anne O-Hagan. (January 15, 2003). My Career – Postgraduate studies in fraud investigation. *The Sydney Morning Herald.* Retrieved May 5, 2003, from Factiva database.
[31] Julie-Anne O-Hagan. (January 15, 2003). My Career – Postgraduate studies in fraud investigation. *The Sydney Morning Herald.* Retrieved May 5, 2003, from Factiva database.
[32] *The Institute of Chartered Accountants in Australia – Graduate Certificate in Forensic Studies (Accounting).* (n.d.) Retrieved May 16, 2003, from http://www.icaa.org.au/tech/index.cfm?menu=303&id=A104834962.

ANALYSIS OF CURRENT STANDARDS ENVIRONMENT

While there appears to have been considerable progress over the past two years across the globe with respect to standard setting for Forensic Accountants, standard-setting activity is deficient in several respects.

First, accounting and investigative bodies have failed to establish a conceptual framework for standard setting. Standard setting deals primarily with professional conduct and ethics rather than work product. The current standards environment is a combination of professional conduct rules and a list of best practices. The accounting bodies have brushed the surface of a conceptual framework but the bodies lack solid performance standards. On the other hand, investigative bodies such as the Association of Certified Fraud Examiners have created a list of best practices. For example, standards outline the need to check for conflicts of interest before accepting an engagement and may include a suggestion to tape record all interviews. While important, best practices will not be sufficient to defend against IFA negligence actions in the future. For example, best practices do not deal with changes in investigative tools. Best practices will remain valid for the most part. However, best practices are reactive. They do not anticipate changes in the Forensic Accounting industry such as the emergence of new investigative tools and changes in the legal environment such as privacy legislation. It is, therefore, crucial to establish a conceptual framework for standard setting, having all stakeholders commit to it. Once established, all Forensic Accountants will have high-level guidance. Even without a detailed list of best practices, so long as IFAs act within boundaries set out by the broad principles, they can make their own decisions as to best practices. The value in standard-setting is consistency rather than the choice of one practice over another.

At present, there is considerable risk of IFA failure and negligence. This risk is preventable with solid standards. The best course of action is to expand on the standard setting that has already been started by the Alliance in Canada and similar bodies in the United States and Australia. An important segment of these standards should include a conceptual framework for assessing and utilizing new investigative tools and techniques. Although a complete conceptual framework for standard setting is beyond the scope of this paper, I propose that an appropriate conceptual framework for standard setting include the following:

- A Code of Ethics distinct from the Institute of Chartered Accountants of Ontario professional practice standards. This is required because some DIFA graduates are not Chartered Accountants.
- A definition of Forensic Accounting work that encompasses both proactive and reactive investigative work, damages, and computer forensic work.
- A statement of those to whom the standards apply. In Canada, this is likely to include CA-IFAs and other graduates of the DIFA program.
- A commitment to principle-based standards based on "common sense". This is consistent with the Canadian accounting environment requiring significant professional judgment. This may, however, pose problems in any attempt to harmonize IFA standards on a global basis. For example, the accounting environment in the United States is driven to a greater extent by rules rather than principles.
- A statement of the purpose of Forensic Accounting standards. Clearly, standards are important as a defense in an IFA negligence action. They are also important so as not to bring the IFA profession into disrepute.

- A description of the standard setting process. This should be controlled by the Alliance in Canada and it should involve all stakeholders including lawyers and police departments. The CICA system of issuing exposure drafts and soliciting comments from interested parties may be appropriate.
- The importance of seeking legal advice.
- The importance of having a solid knowledge of the law. This includes, but is not limited to privacy legislation, money laundering legislation, common law precedents, the definition of fraud, and chain of custody requirements.
- A statement that the conceptual framework is timeless.
- A statement that the ultimate test of a Forensic Accountant's work product is the court system. Due to the nature of litigation, a secondary test is the opposing expert. Mr. Dovey offered, "There is a built-in safety net... before you even get to trial." The other side will try to prove you wrong.
- Additional secondary tests include practice reviews, disciplinary committees, and client review. Of course, the primary test is your own review and the review of others within your practice.
- Stakeholders include the legal community, plaintiffs, defendants, employers/employees, the police, the courts, mediators, arbitrators, and insurers.
- The importance of never opining on matters of law. This is outside of a Forensic Accountant's expertise.
- The commitment to devote resources to drive standard setting.
- The commitment to set standards based on the conceptual framework.
- The commitment to objectivity, unbiased work, and professionalism.

- The commitment to seek out the truth through gathering all available evidence.
- A statement that sufficient, appropriate evidence is to be gathered in all cases.
- A conceptual framework for the assessment and utilization of new investigative tools and techniques.
- A statement that "Fees will be based on magnitude of search, not on outcome."[33]
- A statement that Forensic Accountants "Avoid conflicts of interest."[34]

Second, the standard setting environment, as outlined above, is highly fragmented. Despite this fragmentation, there is significant overlap among stakeholders for these bodies. Therefore, there would be significant benefits to pooling resources and setting standards together. The Forensic Accounting field is relatively new and, as such, various bodies have emerged all over the world to manage the interests of their constituents. Any standard setting, including the proposed conceptual framework for assessing and utilizing new investigative tools and techniques should be harmonized on a global basis. After all, large money laundering investigations often involve tracking funds flowing all over the world. In addition, the audit of large multinational corporations will involve proactive fraud auditing all over the world. In an environment where police forces lack the resources to investigate fraud and companies are expending significant resources to comply with new corporate anti-corruption legislation such as the Sarbanes-Oxley act in the United States and related rules and regulations set by securities commissions, there will be significant demand for the services of private Forensic Accountants to investigate

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[33] Howard R. Davia, Patrick C. Coggins, John C. Wideman, and Joseph T. Kastantin. (2000). John Wiley & Sons. Accountant's Guide to Fraud Detection and Control, 2nd Edition, Chapter 3: "Principles and Standards for Fraud-Specific Examinations". p. 56.

[34] Howard R. Davia, Patrick C. Coggins, John C. Wideman, and Joseph T. Kastantin. (2000). John Wiley & Sons. Accountant's Guide to Fraud Detection and Control, 2nd Edition, Chapter 3: "Principles and Standards for Fraud-Specific Examinations". p. 57.

frauds on a global scale. Harmonized standards will facilitate this work. To this end, a global forensic accounting body should be established, likely a subset of the International Accounting Standards Board. Pooling of resources makes for more efficient standard setting. The practical reality and limitation lies in various bodies laying claim to expertise in their area. Bodies may not realize the benefits of harmonization. As such, this may be a long and arduous process where the best we can hope for is a positive working relationship. At present the Alliance has a sub-committee trying to improve the Alliance's relationship with the Association of Certified Fraud Examiners, the most influential body of Forensic Accountants in the United States.

Finally, IFA standards set by accounting bodies fail to adequately differentiate between damages and investigative work, as well as other service lines. Where bodies deal solely with investigative work, their standards do not apply to damages. The problem there, however, is the bodies have chosen to publish best practices rather than establish a conceptual framework. For bodies whose members perform all facets of Forensic Accounting work, present standards are all encompassing. This appears to be the start of a conceptual framework rather than proper standards. It will be important to set specific standards in the damages, investigations, and computer forensic areas, as well as other areas such as Business Intelligence, Money Laundering, Physical Security, Control Reviews, and Risk Assessments. This is especially important in an environment where auditing standards now include tests for fraud without any specific allegations, as a normal part of every audit. For example, in Canada, the requirements are set out in the CICA Handbook section 5135 'the auditor's responsibility to consider fraud and error in an audit of financial statements'. In the United States, the responsibilities are set out in

Statement of Auditing Standards 99 'Consideration of Fraud in a Financial Statement Audit Summary'. Section 5135 is based on International Standard on Auditing (ISA) 240, issued by the International Auditing Practices Committee (IAPC) of the International Federation of Accountants (IFAC), entitled "The Auditor's Responsibility to Consider Fraud and Error in an Audit of Financial Statements." The result is that Forensic Accountants will be performing considerably more investigative work than they have in the past. At the same time, current standards fail to provide sufficient guidance.

A Framework for the Assessment and Utilization of New Investigative Tools

An integral part of a conceptual framework for standard setting is a conceptual framework for the assessment and utilization of new investigative tools. This is critically important due to the ever-expanding role of fraud investigations in the responsibilities of auditors and the practices of Forensic Accountants. Fraud auditing is now part of regular financial statement audits as discussed. In addition, audit committees will not hesitate, in this post-Enron and post-Worldcom environment, to call in Forensic Accountants upon any hint of fraud allegations. Also, the whistleblower protection inherent in the Sarbanes-Oxley act will precipitate similar changes in Canada. This protection will foster more allegations of corruption and fraud than ever before that will have to be investigated. Investors and Boards of Directors will turn to Forensic Accountants to prove or disprove these allegations. To date, no organization has created such a framework.

The lack of a framework may be due in part to the perception that the Forensic Accounting / Fraud investigation industry is stagnant and not susceptible to change. In fact, considerable change has occurred in the last 20 years and I propose that considerable change will occur in the future. The IFA industry must be armed with a framework to deal with this change.

The overriding purpose of designing a conceptual framework for investigative tools and techniques is to protect the integrity of the profession. Even though it will ultimately rest with the Courts to approve of any investigative tool, it would be irresponsible not to provide guidance to practitioners. Without guidance, practitioners would use investigative tools inconsistently and perhaps in error, bringing the profession into

disrepute. A natural consequence of a lack of guidance may be civil actions brought against investigators for negligence, similar to that brought against a Forensic Accountant in Mattco Forge. Although Mattco Forge dealt with damages work, the same risk applies to investigations where a client may not have been pleased with the outcome of their case. A second similarity exists where the investigator uses a tool inappropriately and alters evidence much as the Arthur Young IFA, without proper training, recreated evidence and passed it off as original. The risk of using inappropriate tools is failing to uncover a fraud or revealing only part of a scheme when additional funds have been misappropriated. The point is that shareholders and clients will have no trouble suing the Forensic Accountant for not finding fraud when they have been so quick to sue the auditor for failing to detect fraud in the past.

A framework for assessing investigative tools will provide the IFA with a valid defense in negligence actions. It will help Forensic Accountants prove that they did sufficient work (ie. that the quality and quantity of work performed was reasonable). It will also help to prove that a reasonable forensic accountant would not have discovered the fraud and, therefore, the IFA was not negligent. At times, fraud investigations are like searching for a needle in a haystack. It would be cost-prohibited to assure clients that the IFA will detect 100% of frauds in existence. In fact, a carefully masterminded fraud, due to its nature, may never be detected.

The important point to note in this case is that the benefit of standard setting is in having a standard rather than what the standard actually requires. Forensic Accountants must be consistent in the quality of their work and in their professional conduct.

This Framework for the Assessment and Utilization of New Investigative Tools ("the Framework") will apply to Canadian IFAs engaged in forensic accounting work across the globe. This is not limited to Chartered Accountants, but applies equally to law enforcement officials, securities regulators, auditors, and all others that are responsible for fraud prevention and detection. Although the scope encompasses all IFAs, in practice, it will only be enforceable to CA-IFAs and graduates of the Diploma in Investigative and Forensic Accounting. DIFA participants include accountants, tax professionals, and police officers. In order to broaden the scope of enforceability and stature, the Alliance should ally, in Canada, with the Association of Private Investigators, Investigations Canada, the ACFE, and the Association of Certified Forensic Investigators. Eventually, the Alliance should ally with other bodies around the world involved in fraud investigation such as the Australian Institute of Professional Investigators and the Forensic Accounting Special Interest Group of the Institute of Chartered Accountants of Australia. In the United States, the Alliance should ally with the ACFE and the American Institute of Certified Public Accountants.

To ensure compliance with the Framework, the Alliance should set up its own disciplinary committee and adopt its own code of ethics and rules of professional conduct.

The Framework should be timeless, consistent with the overall framework for standard setting presented above. In this environment, old tools are most common due to the arduous task of proving the reliability of new tools in court. Despite this difficulty, the profession will have no choice but to adopt new tools and techniques. For example, although courts were most comfortable with paper documents, "with 93% of all business

documents created electronically and only 30% ever printed to paper..."[35], courts have been forced to accept computer forensic tools such as EnCase in order to provide evidence of fraud. Our environment will change and this will, in turn, force the courts to accept new tools and techniques. It is important that Forensic Accountants assess these tools beforehand, as our primary role is to assist the courts. It is also important that IFAs consider the uses and limitations of each tool as all tools may not be appropriate in all investigations.

This Framework applies to all investigations defined under the broad standard-setting framework. Since this broad framework has not yet been created, the Framework applies to both proactive and reactive fraud investigations.

Primary tenets of the proposed framework are as follows:

- Any tool or technique used in an investigation must comply with the Framework for the Assessment and Utilization of New Investigative Tools.
- Any tool or technique must be lawful. It must comply with legal statutes and rulings in the jurisdiction where it is applied. This includes compliance with any privacy legislation that may be in force.
- Any tool or technique must comply with the IFA code of ethics, although not yet established. At present, the Alliance defers to the provincial rules of professional conduct. Some tools or techniques may violate the IFAs code of ethics (they may be morally wrong) even thought they may be legal in a given jurisdiction. For example, detaining an interviewee overnight in a local jail in order to elicit information is legal

[35] Michele C.S. Lange. (November 4, 2002). New act has major impact on electronic evidence. *The National Law Journal*. Retrieved March 3, 2003, from http://www.nlj.com/toolbox/110402sarbanes.shtml.

in parts of Eastern Europe. However, this behaviour is contrary to an IFAs moral code as it involves restricting the liberty of an individual without a fair trial (without having been found guilty).

- An IFA should consult legal counsel if uncertain as to whether a given tool that has been approved by the Alliance is appropriate in a given circumstance or jurisdiction.
- Any tool should be approved by the Alliance in advance. The Alliance will establish an investigation standards subcommittee. Along with setting other investigation standards such as client acceptance, document management, safeguarding evidence, note taking, report writing, and providing expert testimony, the subcommittee will study the use of investigative tools in other jurisdictions and the reliability of such tools. Once studied and researched, the subcommittee will publish a list of approved tools and the circumstances in which they are to be used.
- A tool is not useful unless appropriate skill and judgment is brought to bear. A tool must never be used blindly without consideration for its reliability, limitations, and appropriateness.
- A tool should only be used where results will be consistent with client objectives. For example, it may be an invasion of privacy to conduct a credit check on an individual. Should the client wish to pursue criminal punishment for an alleged fraudster, then performing a credit check may hamper the alleged fraudster's rights and ultimately, the client's objectives may not be met. In short, not all tools are appropriate to all investigations.
- When considering the use of a tool, it is important to exercise professional skepticism.

- When considering the use of a tool, it is important to judge the cost against the benefit of using the tool.
- It is important to consider the level of education required to use a given tool. For example, investigators cannot simply purchase EnCase and use it without an in-depth knowledge of how computers function. Tools may require specific training prior to use. A judge, although familiar with EnCase, may not accept evidence as valid if an inexperienced Forensic Accountant used EnCase for the first time without proper training. The Alliance will include any education requirements as a component of its list of approved tools. In short, some tools may have restrictions on their use.
- A list of tools does not require the IFA to use such tools nor does it preclude the IFA from the use of alternate investigative steps.
- It is important that Forensic Accountants understand the tool they are using. If staff are carrying out an investigation and using the tools, then an IFA must ensure that staff are properly trained in the use of the tool. In addition, staff must be adequately supervised.
- Best practices should be established for each tool. As a consequence of the Alliance's research study into a tool prior to approving the tool, the Alliance will generate a non-binding list of best practices that may be used by IFA firms as minimum requirements that the firms can take and shape their own best practices around.
- The IFA should consider whether the tool provides the investigative team with sufficient evidence. If not, additional tools may be required.

- "Regardless of (the) tool, (the) practitioner will provide no assurance that it will detect fraud."[36]
- The IFA will "assure clients that Generally Accepted Standards will be followed."[37]
- The IFA will maintain (the) confidentiality of information gathered by (the) tool.[38]
- The IFA will document all steps and procedures used in operating the tool.
- The IFA will document any deviations from best practices and any problems encountered in using the tool.
- When selecting and applying a tool, the IFA will involve legal counsel and the client in order to ensure that privilege is maintained and objectives are met.
- The IFA should preserve and safeguard the original evidence gathered in applying a tool.
- The IFA should work objectively and independently. "Independence means that you have investigated the matter thoroughly from all perspectives and are able to support your conclusions with solid facts."[39] The IFA should not simply use the tools specified by the lawyer and the client without judging the reasonability of the tool for themselves.

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[36] Howard R. Davia, Patrick C. Coggins, John C. Wideman, and Joseph T. Kastantin. (2000). John Wiley & Sons. Accountant's Guide to Fraud Detection and Control, 2nd Edition, Chapter 3: "Principles and Standards for Fraud-Specific Examinations". p. 56.
[37] Howard R. Davia, Patrick C. Coggins, John C. Wideman, and Joseph T. Kastantin. (2000). John Wiley & Sons. Accountant's Guide to Fraud Detection and Control, 2nd Edition, Chapter 3: "Principles and Standards for Fraud-Specific Examinations". p. 56.
[38] Howard R. Davia, Patrick C. Coggins, John C. Wideman, and Joseph T. Kastantin. (2000). John Wiley & Sons. Accountant's Guide to Fraud Detection and Control, 2nd Edition, Chapter 3: "Principles and Standards for Fraud-Specific Examinations". p. 57.
[39] William Horton. Your Roles in Investigations. *Presentation at Association of Certified Forensic Investigators of Canada, 5th Annual Canadian Fraud Conference.* (May 27, 2003).

Additional Considerations

Brian King, President of King-Reed & Associates Ltd., one of Canada's largest private investigation agencies spoke at the 5th Annual Canadian Fraud Conference hosted by the Association of Certified Forensic Investigators of Canada on May 27, 2003. Mr. King spoke on the topic of 'Investigations of the Future: New Tools Techniques and Caveats'. Mr. King noted, "...as investigators, we have to be prepared that any one of our reports end up in litigation or criminal trial." In addition, Mr. King cautioned Forensic Accountants to be careful not to disclose personal information in reports. As a result of privacy legislation, the IFA may be sued.

Also at the ACFI conference, William Horton, a senior litigation partner with Blake, Cassels & Graydon LLP, spoke with respect to IFA responsibilities when undertaking investigations. Of note, Mr. Horton offered the following points, which I believe, should form part of the Framework:

- The IFA will keep an open mind. It is important to know how to interpret the output of a tool. "Theories must be tested against all known or knowable facts which could disprove them."[40] The IFA must apply professional judgment in interpreting the output of a tool.
- "Thoroughness is essential."[41] Once the application of a tool has begun, the IFA should complete the application to the fullest extent of the Alliance's requirements.

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[40] William Horton. Your Roles in Investigations. *Presentation at Association of Certified Forensic Investigators of Canada, 5th Annual Canadian Fraud Conference.* (May 27, 2003).
[41] William Horton. Your Roles in Investigations. *Presentation at Association of Certified Forensic Investigators of Canada, 5th Annual Canadian Fraud Conference.* (May 27, 2003).

- There is a "strong role for both knowledge of human environments and intuition about human behaviour".[42] The IFA must consider the human element. A tool cannot simply be used in isolation.
- The "integrity of data must be established, tested and preserved."[43]
- The "source of all information must be carefully catalogued."[44]
- "objective evidence may need to be authenticated by a subjective source."[45] The IFA may have to corroborate the output of a tool with additional tools such as the traditional employee interviews, Anton Piller search orders, and funds tracing.
- If a tool is required and the IFA doesn't have expertise, this should be acknowledged and someone else with proper expertise should be engaged.[46]

Bill Dovey was also questioned as to what he would deem most important in establishing a framework for the assessment and utilization of new investigative tools. Mr. Dovey replied "I would want to see what the community standard was... I would want to go out and see how it was being used." Mr. Dovey stated that the problem with any new technique is "How do I prove this in court?" "How do I go to court and say I've used this program ... this black box does this. I do I prove that?" "Years and years and years ago, if you went with a present value calculation, you could have a judge say, I don't know

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[42] William Horton. Your Roles in Investigations. *Presentation at Association of Certified Forensic Investigators of Canada, 5th Annual Canadian Fraud Conference.* (May 27, 2003).
[43] William Horton. Your Roles in Investigations. *Presentation at Association of Certified Forensic Investigators of Canada, 5th Annual Canadian Fraud Conference.* (May 27, 2003).
[44] William Horton. Your Roles in Investigations. *Presentation at Association of Certified Forensic Investigators of Canada, 5th Annual Canadian Fraud Conference.* (May 27, 2003).
[45] William Horton. Your Roles in Investigations. *Presentation at Association of Certified Forensic Investigators of Canada, 5th Annual Canadian Fraud Conference.* (May 27, 2003).
[46] William Horton. Your Roles in Investigations. *Presentation at Association of Certified Forensic Investigators of Canada, 5th Annual Canadian Fraud Conference.* (May 27, 2003).

how you did that. Well... I put it in my computer and it did it. How do I know your computer's any good?" Tools such as calculators and Excel have been in use for a long time so they're accepted. In order to prove the validity of a tool, an IFA has to show "Here's the cases it's been used in and relied on." "This is an industry standard." The IFA has to show that the tool was used successfully in courts in other countries and potentially that the tool was successfully used in fields other than fraud investigations. Finally, academic studies may be appropriate. All of these sources of information should be reviewed by the Alliance when assessing the reliability and appropriateness of a new tool on its list awaiting approval.

Bill Dovey commented, "by and large this isn't a new technique business". Even though change is slow in this field, it is important to proactively anticipate it. It is not unreasonable to believe, for example, that Artificial Intelligence technology may be used in investigations of the future to generate fraud theories or even to propose full investigation work plans. Another distinct possibility is the use of more invasive surveillance techniques. Used blindly without consideration for the framework set out above, an IFA may be deemed to have acted negligently. A solid framework will help the investigative community to control and to deal with the emergence of these new tools.

According to Brian King, "sophisticated digital cameras, hand held voice and electronic communication devices, (and) scanners...have now become common place in the arsenal of investigator's tools." The following tools have also recently joined the investigative landscape:

- "EnCase"
- "GPS tracking equipment"
- "digital video recorders"
- "smart cameras... have pattern recognition and are able to track the same person throughout a facility, even amongst other individuals."
- "Personal Digital Assistance... that can allow security consultants to move through facilities in a wireless environment with these hand held PC's viewing CTV Cameras from several locations."
- "Online searches of court records"

The use of inappropriate tools or the negligent use of tools may not only compromise the investigation (by not being able to prosecute criminally) and result in the loss of a client, it opens up potential negligence actions against the IFA by the client as well as defamation and invasion of privacy actions by the suspect.

I will now analyze two tools with the conceptual framework for the assessment and utilization of new tools. These two tools have emerged very recently and are increasingly forming part of the IFAs toolkit. The first tool, EnCase, falls under the realm of computer forensics. "Computer forensics may be defined as procedures applied to computers for the purpose of producing evidence, which may be used in a criminal or civil court of law."[47] Due to the high percentage of documents that never reach paper from electronic form, it is in this area of computer forensics that the majority of new

[47] Mark Bigler. (2000). Computer Forensic Procedures and Tools for Fraud Examiners. *The White Paper, July – August 2000. A publication of the Association of Certified Fraud Examiners.* Retrieved May 14, 2003, from http://www.aicpa.org/antifraud/investigation/skills_techniques/computer_assisted/49.htm.

investigative tools will emerge. The second tool is known as Digital Analysis. Digital Analysis "identifies process inefficiencies, errors, and fraud by searching for abnormal: digit and number patterns, round number occurrences, and duplications of numbers."[48] It "is based on the theory (known as Benford's Law) that there are expected frequencies or occurrences of digits in a list of numbers."[49]

The purpose of this analysis is to assist the Alliance for Excellence in Investigative and Forensic Accounting in determining whether to include the tools on its list of approved tools as well as to demonstrate the function and benefit of the conceptual framework for the assessment and utilization of investigative tools. It is not an exhaustive study of the tool, as will be required by the Alliance, but rather an illustration of the usefulness of the Framework.

[48] Richard B. Lanza. (2000). Using Digital Analysis to Detect Fraud. *Journal of Forensic Accounting.* pp. 291-296. Retrieved May 14, 2003, from http://www.rtedwards.com/journals/JFA/I-2/291.pdf.
[49] Richard B. Lanza. (2000). Using Digital Analysis to Detect Fraud. *Journal of Forensic Accounting.* pp. 291-296. Retrieved May 14, 2003, from http://www.rtedwards.com/journals/JFA/I-2/291.pdf.

ENCASE

EnCase - Description

EnCase is computer software created by Guidance Software. EnCase allows Computer Forensic practitioners to take a bit stream (mirror-image) of electronic storage media such as hard drives and other magnetic media such as disk drives and ZIP drives. EnCase can recover deleted files, perform searches, view files, and organize evidence for court. Finally, EnCase can validate the drive to confirm that a hard drive has not been altered. EnCase creates "a bit stream image...(that) can be verified through a mathematical hashing algorithm. This ensures the integrity of the evidence as a valid copy of the original."[50]

EnCase - Analysis

In order to properly analyze whether EnCase is an appropriate tool for Forensic Accountants, we must consider the following: a comparison of cost to benefits, an analysis of the extent of training that is required, an analysis of the tool's reliability, and a review of legal cases and other uses to determine the admissibility (in court) of the tool's output with regard to whether it provides sufficient evidence and with regard to the expertise required in interpreting the output.

Due in part to Guidance Software's interest in having courts accept EnCase as a standard tool in Computer Forensics and due in part to EnCase being a relatively new tool in the investigator's toolkit, Guidance Software developed a 'Legal Journal'.

"While there has been some excellent research and writing on search and seizure and privacy issues related to computer data, there has been comparatively little guidance on

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[50] Kevin Lo. (April 4, 2003). Computer forensics is key to acquiring and preserving electronic evidence. *The Lawyers Weekly.* Vol. 22, No. 45. Retrieved May 22, 2003, from Quicklaw database.

the authentication and presentation of electronic evidence at trial. Computer investigation experts uncertain of what the law required often received unclear direction from counsel who were equally unfamiliar with the complex technical issues and nuances that must be applied to the laws of evidence. Consequently, there has been no clear consensus on issues such as what is required to establish a sufficient foundation for computer evidence, whether a computer forensic investigator is considered a scientific expert, and how the Best Evidence rule applies to computer data.

In response to these concerns, Guidance Software launched The EnCase Legal Journal ("ELJ"), which is provided with two goals in mind. First, the ELJ reports on recent trial court developments involving EnCase as well as notable court decisions involving computer evidence in general. Secondly, the ELJ addresses how the EnCase process facilitates the authentication and admission of electronic evidence in light of past industry practices and the current status of the law, providing investigators and their counsel with an added resource when addressing questions involving computer forensics and the use of EnCase."[51]

While the journal is primarily based on United States case law, findings are equally valid in Canada.

Finally, in order to use EnCase, an investigator has to gain access to the suspects computer. This fact introduces many issues with respect to search and seizure rules and privacy legislation. Although these are beyond the scope of this report, it should be noted that, if in doubt, the investigator should consult legal counsel prior to seizing a computer.

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[51] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 5.

The Alliance should incorporate an analysis of privacy legislation in their research on EnCase as an investigative tool.

Cost vs. Benefit

EnCase costs US$2,500 per license. This is very inexpensive to the investigator compared with its benefits. The primary benefit is as follows: "With over 8,000 licensed users, computer evidence processed with EnCase has been successfully admitted into evidence in thousands of criminal and civil court cases. To date, there are no known instances of sustained objections to EnCase-based computer evidence on authentication grounds relating to the use of EnCase."[52] Even if an EnCase license was more expensive than other products on the market, using a lesser known, lesser accepted custom software tools or those that are not commercial available, the following costs would be avoided with EnCase, thereby making EnCase benefits outweigh its costs (including the opportunity cost):

- "The defense could seek to exclude the results of any computer investigation that utilized tools that were inaccessible to non-law enforcement."[53]
- "If the defense is provided with a copy of the proprietary software and all evidentiary images, an expert retained by the defense will require substantial time to learn the software and recreate the process, resulting in substantial cost to the government in cases involving indigent defendants."[54]

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[52] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 51.
[53] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 19.
[54] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 19.

- "While, as noted above, the source code for commercially available software is not required to be introduced into evidence in order to establish the authenticity of computer processed evidence, it is apparent that such presumptions of authenticity would not be afforded to customized software."[55] EnCase is easily accessible to the opposing expert.

The benefits of using EnCase significantly outweigh the costs.

Training

The EnCase Legal Journal provides significant guidance with respect to training. The primary points are as follows:

- "the courts generally apply the same analysis of "sufficient familiarity" by the user, general acceptance, and whether the process involved is standard and commercially available."[56]
- "while experience and proper training are clearly important, it is also clear that the courts do not mandate that the expert be intimately familiar with the scientific principles or detailed inner workings of these technical processes that generate electronic evidence."[57]
- "Under the standard articulated under *Lugashi* and several other similar cases, the examiner need not be able to intricately explain how each and every function of EnCase works in order to provide sufficient testimony regarding the EnCase process.

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[55] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 19.
[56] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 11.
[57] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 11.

There are no known authorities requiring otherwise for software that is both commercially available and generally accepted. A skilled and trained examiner with a strong familiarity with the EnCase process should be able to competently present EnCase-based evidence obtained through a forensic examination."[58]

- "the examiner should ideally have received training on EnCase, although such training should not be strictly required, especially where the witness is an experienced computer forensic investigator and has received computer forensic training on computer systems in the past. Examiners should also conduct their own testing and validation of the software to confirm that the program functions as advertised. However, a "strong working familiarity" does not mean that an examiner must obtain and be able to decipher all 300,000 lines of the program source code or be able to essentially reverse engineer the program on the witness stand."[59]

Training is extremely important in order to qualify the investigator as an expert in the use of this tool. In addition, inappropriate usage may expose the investigator to negligence litigation from their client and potential defamation of character or invasion of privacy litigation from suspects incorrectly accused based on incorrect inferences drawn from the output of the program.

Reliability

This tool is reliable if, for example, "a group of ten qualified and independently operating forensic examiners analyzing the same evidentiary image...achieve virtually the same

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[58] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 11.
[59] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 12.

search results when entering identical text search keywords or seeking to recover all specified file types on the image, such as all graphical images or all spreadsheet files."[60] Reliability testing should be performed independently by the Alliance.

Admissibility of Output

The output of EnCase can be powerful evidence. However, sufficient professional judgment is necessary in interpreting the output. In addition, investigative skill is required to connect both the information in a particular computer file with the metadata about the computer file (such as the time and date it was created and where it was stored on the computer).

EnCase satisfies the United States 'Best Evidence' Rule. Under the Federal Rules of Evidence, Rule 1001(3) provides "[if] data are stored in a computer or similar device, any printout or other output readable by sight, shown to reflect the data accurately, is an 'original.'"[61]

"A Texas Appellate Court recently ruled that an image copy of a hard drive qualifies as an "original" for the purposes of the Best Evidence Rule. The issue of whether an EnCase Evidence File suffices as an "original" under the Best Evidence Rule was recently litigated successfully in US Federal District Court, New Hampshire"[62]

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[60] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 17.
[61] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 36.
[62] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 37.

"Daubert v. Merrell Dow Pharmaceuticals, Inc., is an important federal court decision that sets forth a legal test to determine the validity of scientific evidence and its relevance to the case at issue."[63] Daubert requires the following:

"1) Whether a "theory or technique ... can be (and has been) tested;"

2) Whether it "has been subjected to peer review and publication;"

3) Whether, in respect to a particular technique, there is a high "known or potential rate of error;" and

4) Whether the theory or technique enjoys "general acceptance" within the "relevant scientific community."[64]

The EnCase Legal Journal explains that EnCase complies with Daubert requirements. EnCase is commercially available.[65] However, Courts have identified a lack of "meaningful testing."[66] "Many large agencies have conducted successful tests with EnCase but have not published their results. Additionally, it is difficult to determine whether a particular tool has a high rate of error unless the testing process and methodologies are disclosed and documented in full. It is also difficult to define a "high rate of error" when many developers of popular forensic tools decline to allow testing on their tools, depriving the analysis of a wider field of comparison. However, as this

[63] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 13.
[64] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 14. (Footnote 58 – Daubert, supra, 509 U.S., at 592-594, 113 S.Ct. 2786).
[65] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 14.
[66] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 15.

industry matures, the amount of documented and objective testing should increase substantially."[67]

"While all software programs contain bugs to varying degrees, the various tests and extensive usage of EnCase reveal that the program does not have a high error rate, especially in contrast to other available tools. Additionally, it is important for an investigator to be able to point to either his/her own testing of EnCase or that performed by his/her agency."[68]

With respect to general acceptance, the Legal Journal notes that over three thousand law enforcement agencies and companies use EnCase worldwide.[69]

EnCase – Conclusion

EnCase should be added to the Alliance for Excellence in Investigative and Forensic Accounting's list of approved investigative tools. Benefits outweigh costs and the tool is admissible in court. EnCase is reliable and evidence is given sufficient weight in court. In addition to this literature review, the Alliance should engage its own Computer Forensics expert to perform detailed testing on the product. Then, the Alliance should publish the results of this testing in order to further support the validity of the product. This ultimately helps the tool's admissibility in court. Finally, as part of its list of best practices when using EnCase, the Alliance should include, but not limit it to, the following:

- Document all procedures performed.

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[67] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 15.
[68] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 15.
[69] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 15.

- "Discretely seize the computer and related items after normal work hours when the employee isn't present.
- Don't even touch employees' personal items such as briefcases, backpacks, handbags, or purses.
- Don't confront the employee in the presence of third parties who aren't associated with the investigation; conduct interviews in a private setting with the appropriate participants.
- If confronted by the employee in the presence of others, never accuse him of wrongdoing. However, the fraud examiner may state that he is just gathering facts pursuant to an authorized review, audit, or investigation."[70]

- "It is not uncommon for investigators to be asked to testify to specific examples of peer review and publication of technical or scientific processes."[71] Consequently, "It is important for computer forensic examiners to keep abreast of peer review of computer forensic tools in industry publications."[72]
- "The IT Forensic specialist should be working exclusively from the imaged data. The original media should be catalogued, sealed and properly stored as evidence."[73]

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[70] Mark Bigler. (2000). Computer Forensic Procedures and Tools for Fraud Examiners. *The White Paper, July – August 2000. A publication of the Association of Certified Fraud Examiners.* Retrieved May 14, 2003, from http://www.aicpa.org/antifraud/investigation/skills_techniques/computer_assisted/49.htm.
[71] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 15.
[72] Guidance Software. (March 2003). Encase Legal Journal. Retrieved May 14, 2003, from http://www.guidancesoftware.com/support/downloads/LegalJournal.pdf. p. 14.
[73] Kevin Lo. (April 4, 2003). Computer forensics is key to acquiring and preserving electronic evidence. *The Lawyers Weekly.* Vol. 22, No. 45. Retrieved May 22, 2003, from Quicklaw database.

DIGITAL ANALYSIS

Digital Analysis – Description

"Frank Benford made a simple observation while working as a physicist at the GE Research Laboratories in Schenectady, New York, in the 1920s. He noticed that the first few pages of his logarithm tables books were more worn than the last few and from this he surmised that he was consulting the first pages—which gave the logs of numbers with low digits—more often. The first digit of a number is leftmost—for example, the first digit of *45,002* is *4*. (Zero cannot be a first digit.) Benford extrapolated that he was looking up the logs of numbers with low first digits more frequently because there were more numbers with low first digits in the world."[74]

"The expected frequencies of the digits in the first four positions can be seen in (**Appendix A**), which shows a large bias in favor of low digits in the first position. The probability that the first digit is either a *1*, *2* or *3* is 60.2%."[75]

With respect to fraud detection, "In 1993, in *State of Arizona* v. *Wayne James Nelson* (CV92-18841), the accused was found guilty of trying to defraud the state of nearly $2 million. Nelson, a manager in the office of the Arizona State Treasurer, argued that he had diverted funds to a bogus vendor to demonstrate the absence of safeguards in a new computer system."[76]

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[74] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[75] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[76] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.

"Because human choices are not random, invented numbers are unlikely to follow Benford's law. Here are some divergent signs that Benford's law would have drawn attention to:

- As is often the case in fraud, the embezzler started small and then increased dollar amounts.
- Most of the amounts were just below $100,000. It's possible that higher dollar amounts received additional scrutiny or that checks above that amount required human signatures instead of automated check writing. By keeping the amounts just below an additional control threshold, the manager tried to conceal the fraud.
- The digit patterns of the check amounts are almost opposite to those of Benford's law. Over 90% have *7*, *8* or *9* as a first digit. Had each vendor been tested against Benford's law, this set of numbers also would have had a low conformity, signaling an irregularity.
- The numbers appear to have been chosen to give the appearance of randomness. Benford's law is quite counterintuitive; people do not naturally assume that some digits occur more frequently. None of the check amounts was duplicated; there were no round numbers; and all the amounts included cents. However, subconsciously, the manager repeated some digits and digit combinations. Among the first two digits of the invented amounts, *87*, *88*, *93* and *96* were all used twice. For the last two digits, *16*, *67* and *83* were duplicated. There was a tendency toward the higher digits; note that *7* through *9* were the most frequently used digits, in contrast to Benford's law. A total of 160 digits were used in the 23 numbers. The counts for the ten digits from *0* to *9* were 7, 19, 16, 14, 12, 5, 17,

> 22, 22, and 26, respectively. A CPA familiar with Benford's law could have easily spotted the fact that these numbers—invented to seem random by someone ignorant of Benford's law—fall outside expected patterns and thus merit closer examination."[77]

Through the use of technology, digital analysis allows the investigator to review large volumes of data for evidence of error or bias.[78] "Digital analysis involves examining the digits in each individual amount in a set of numbers to determine if the frequency of digits is reasonable and is likely to be correct. Benford's law gives the auditor a benchmark, or standard against which actual client data can be tested for possible errors, fraud, and other misstatements."[79]

After determining the frequency of occurrence of digits in a set of numbers (ex. Cheque amounts), the investigator will compare it to the expected frequency according to Benford's Law. Significant deviations will focus the investigation on a particular area.

Digital Analysis – Analysis

Cost vs. Benefit

ACL from ACL Services Ltd. and IDEA from CaseWare IDEA Inc. are both software programs that can perform Benford testing.[80]

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[77] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[78] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[79] Paul Ashcroft; Benjamin Bae; Jeanell Norvell. (September 1, 2002). Data, data everywhere. *Today's CPA,* Volume 30, Issue 2, pp.30-35. Retrieved May 20, 2003, from Factiva database.
[80] Eric P Wallace . (January 1, 2002). The influence of technology on auditing. *Pennsylvania CPA Journal*, Volume 72, Issue 4, 36. Retrieved May 20, 2003, from Factiva database.

Benford's Law can be used to focus an investigator's work on problem areas. This results in significant cost savings to the client and results in a more efficient investigation.

"Too often the intensive record-screening necessary to detect improprieties slows business processes and consumes funding and staffing. At some point, the "cure" becomes worse than the "disease.""[81] Applying Benford's law to subsets of data can also allow for less costly, more efficient investigations. "Subset tests identify small lists of serious anomalies in large data sets, making an analysis much more manageable. They focus on errors as opposed to biases, fraud or processing inefficiencies. Data subsets are natural groupings of the data. In accounts payable, the subsets are usually vendor numbers. In banking data, the subsets are usually account numbers. Other subset variables could be data for sales associates in retailing, transaction dates, travel agents in airline data, cost centers and employees in payroll data."[82]

The "Relative Size Factor" test "finds subsets where the largest number is out of line with the remaining numbers and is possibly an error"[83] and can determine, for example, "An amount of $452.47 was coded as $45,247. That erroneous $45,247 greatly exceeded all the other payments to that vendor and the error was detected due to the high RSF."[84]

The same, same, different test may be used to detect entries that are very similar. "In accounts payable data the test is often used to identify cases in which the invoice number

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[81] W Steve Albrecht; Conan C Albrecht. (April 1, 2002). Root out financial deception. *Journal of Accountancy*, Volume 193, Issue 4, 30-34. Retrieved May 20, 2003, from Factiva database.
[82] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[83] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[84] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.

is the same, the dollar amount is the same and the vendor numbers are different. These near-identical entries could occur if the wrong vendor is paid (perhaps the vendor number is miskeyed) and at a later stage the correct vendor is paid (because the system does not register payment of the invoice to that vendor). Companies that have used this test have reaped large paybacks of misdirected funds."[85] "In payroll data it can find instances where the employee number is the same, the date is the same and the checking account number is different."[86]

The same, same, same test "finds identical entries, such as duplicate payments in accounts payable."[87]

The benefits of using Benford's Law significantly outweigh the costs.

Training

ACL and IDEA "are not easy to learn or implement, but both companies...offer training classes."[88] Training is extremely important in order to qualify the investigator as an expert in the use of this tool. In addition, inappropriate usage may expose the investigator to negligence litigation from their client and potential defamation of character or invasion of privacy litigation from suspects incorrectly accused based on incorrect inferences drawn from the output of the programs.

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[85] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[86] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[87] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[88] Eric P Wallace . (January 1, 2002). The influence of technology on auditing. *Pennsylvania CPA Journal*, Volume 72, Issue 4, 36. Retrieved May 20, 2003, from Factiva database.

Reliability

"Benford's law has been found to apply to many sets of financial data, including income tax or stock exchange data, corporate disbursements and sales figures, demographics and scientific data. Since the 1940s, more than 150 academic papers on Benford's law have been published by mathematicians, statisticians, engineers, physicists and—recently—by accountants. None disputes it or offers a competing law related to digits."[89]

The Alliance should engage its own Computer Forensics expert to independently confirm the reliability of Benford's Law.

Admissibility of Output

The output of a Benford's Law test is likely not required to be admitted in court as it will point the investigator to real evidence that actually links the fraud to a person. It is an investigative tool, that unlike EnCase, is not likely to be admitted into evidence in itself. "The output of fraud detection software...alone does not prove that a fraud has been committed."[90] "...this straightforward, economical technique does not enable auditors to match the symptoms they find with specific types of fraud. As a result, the leads it generates are only signs of potential problems; they are not detailed prognoses. So, once a fraud examiner identifies a suspicious item by means of digital analysis, he or she still must determine what kind of fraud is involved and who is committing it."[91]

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[89] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[90] David Stewart. (November 8, 2002). Investigators must follow digital footprints as well as paper trail. *The Lawyers Weekly*, Vol. 22, No.26. Retrieved May 22, 2003, from Quicklaw database.
[91] W Steve Albrecht; Conan C Albrecht. (April 1, 2002). Root out financial deception. *Journal of Accountancy*, Volume 193, Issue 4, 30-34. Retrieved May 20, 2003, from Factiva database.

If further evidence is not found beyond the Benford results, then the case will likely end. As Bill Dovey noted "You're not going to convict anybody or ... have a judgment based on a statistical analysis that says there's a high probability that that guy stole."

Digital Analysis – Conclusion

The investigator must use caution when using Digital Analysis. "Benford's law is not applicable to all number sets. "Not all data sets follow Benford's law. Those data sets most likely to will have the following characteristics:

- The numbers describe the sizes of similar phenomena (for example, market values of corporations).
- The numbers do not contain a built-in maximum or minimum value (such as deductible IRA contributions or hourly wage rates).
- Assigned numbers, such as Social Security numbers, zip codes or bank account numbers will not conform to Benford's law."[92]

For example, "fraudulent refund claims by business taxpayers are a source of growing concern to the IRS"[93] However, "the IRS and the Treasury Inspector General for Tax Administration (TIGTA), which jointly carried out the project, concluded that digital analysis isn't an effective technique for identifying fraudulent or erroneous fuel tax refund claims"[94] "Agency experts pondering the outcome postulated that, for a variety of

[92] Mark J. Nigrini. (May 1999). I've Got your Number. *Journal of Accountancy · Online Issues · Fraud Detection.* Retrieved June 22, 2003, from http://www.aicpa.org/pubs/jofa/may1999/nigrini.htm.
[93] Fowler W. Martin. (June 19, 2001). US IRS Fails To Detect Fraud With Cyber-Age Test. *DOW JONES NEWSWIRES.* Retrieved May 20, 2003, from Factiva database.
[94] Fowler W. Martin. (June 19, 2001). US IRS Fails To Detect Fraud With Cyber-Age Test. *DOW JONES NEWSWIRES.* Retrieved May 20, 2003, from Factiva database.

legitimate reasons, fuel refund claims data are apparently insufficiently random to comport with Benford's Law."[95]

Benford's Law may simply point out inefficiencies or errors rather than outright fraud. Therefore, significant expertise and judgment should be brought to bear in interpreting it's output.

"Two cautionary comments must be emphasized. First, if evidence pointing to fraud has been found, the auditor must be aware that what was found could be an ordinary mistake, might be simply a breakdown of procedures or could have another plausible, acceptable explanation. In order to prove fraud, the potential criminal must be shown to have had intent to misappropriate assets. Secondly, the evidence to convict a fraudster needs to be compelling and sufficient. The investigator must proceed with extreme delicacy so as to be sure not to compromise any evidence."[96]

Benford's Law does not provide evidence of fraud. Where proactive fraud detection is analogous to the search for a needle in a haystack, the use of Benford's law only helps to direct the investigator to a particular section of the haystack (focusing the search). This is significant nonetheless as it can greatly reduce the cost of an investigation.

The Alliance should include Benford's Law on its list of approved tools as part of an approved software package such as ACL. Prior to approving the package, the Alliance should engage an expert to independently test it. The Alliance should publish the results of the test.

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[95] Fowler W. Martin. (June 19, 2001). US IRS Fails To Detect Fraud With Cyber-Age Test. *DOW JONES NEWSWIRES*. Retrieved May 20, 2003, from Factiva database.

[96] Patricia Essex; Paul Schauer. (April 1, 2002). Automated fraud detection. *The Ohio CPA Journal*. Volume 61, Issue 2, 32. Retrieved May 20, 2003 from Factiva database.

DETAILED FINDINGS

- We must use IFA failures such as Mattco Forge and JMJ Enterprises as motivation for the creation of a conceptual framework for standard setting and a Framework for the Assessment and Utilization of New Investigative Tools.
- The changing regulatory environment, including the Sarbanes-Oxley Act and new responsibilities for auditors (ex. proactive fraud auditing) will result in proactive fraud investigations growing as a percentage of all investigations. Since it would be cost-prohibited (and may not even be possible) to detect all fraud, legal actions will likely be launched in future against Forensic Accountants that have failed to detect fraud. Forensic Accountants must set work standards, including approved investigative tools, to serve as a defense. An IFA should be able to show the court that their work performed, although failing to detect fraud, was reasonable in the circumstances.
- Future legal actions may result in scrutiny of the tools and analyses used by Forensic Accountants. The Framework anticipates this scrutiny and will help to drive the court's decisions around acceptable tools.
- The Framework will help ensure defensibility and promote the reputation of the profession through consistent, high quality, work.
- As investigations are increasingly on a global scale, standards regarding investigative tools should be harmonized, along with other standards.
- The Framework for the Assessment and Utilization of New Investigative Tools will protect IFAs and their clients by ensuring work is consistent and of high-quality across the profession.

- The global standards environment is currently fragmented. The Alliance must play a leadership role in both standard setting and harmonizing standards.
- Although the Forensic Accounting industry changes slowly over time, there have been changes in investigative tools in the past and there will, most certainly, be changes in the future.
- To date, regulating bodies and associations have focused primarily on codes of ethics and best practices. The problem is that best practices are not timeless and they apply to specific tools. They are not transferable to new tools.
- Both EnCase and Benford's Law (as part of a software package) should be approved by the Alliance for usage pending independent testing by a Computer Forensics expert. Results should be published.
- Computer assisted audit techniques and computer-based investigative tools are always "a complement to, but not a substitute for, traditional forensic investigative skills."[97]

[97] David Stewart. (November 8, 2002). Investigators must follow digital footprints as well as paper trail. *The Lawyers Weekly*, Vol. 22, No.26. Retrieved May 22, 2003, from Quicklaw database.

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APPENDIX A

Position of digit in number

Digit	First	Second	Third	Fourth
0		.11968	.10178	.10018
1	.30103	.11389	.10138	.10014
2	.17609	.10882	.10097	.10010
3	.12494	.10433	.10057	.10006
4	.09691	.10031	.10018	.10002
5	.07918	.09668	.09979	.09998
6	.06695	.09337	.09940	.09994
7	.05799	.09035	.09902	.09990
8	.05115	.08757	.09864	.09986
9	.04576	.08500	.09827	.09982

Example: The number 147 has three digits, with *1* as the first digit, *4* as the second digit and *7* as the third digit. The table shows that under Benford's law the expected proportion of numbers with a first digit *1* is 30.103% and the expected proportion of numbers with a third digit *7* is 9.902%.

Source: "A Taxpayer Compliance Application of Benford's Law," by M. J. Nigrini. *The Journal of the American Taxation Association* 18. 1996.