



Environmental Audit And Its Significance

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ABSTRACT: An environmental audit is a type of evaluation intended to identify environmental compliance and management system implementation gaps, along with related corrective actions. In this way they perform an analogous (similar) function to financial audits. There are generally two different types of environmental audits: compliance audits and management systems audits. Compliance audits tend to be the primary type in the US or within US-based multinationals. As the name implies, these audits are intended to review the site's/company's legal compliance status in an operational context. Compliance audits generally begin with determining the applicable compliance requirements against which the operations will be assessed. This tends to include federal regulations, state regulations, permits and local ordinances/codes. In some cases, it may also include requirements within legal settlements. Compliance audits may be multimedia or programmatic. Multimedia audits involve identifying and auditing all environmental media (air, water, waste, etc.) that apply to the operation/company. Programmatic audits (which may also be called thematic or media-specific) are limited in scope to pre-identified regulatory areas, such as air. Audits are also focused on operational aspects of a company/site, rather than the contamination status of the real property. Assessments, studies.

KEYWORDS: environmental audit, significance, compliance, legal, media, operational, property, evaluation, financial

I. INTRODUCTION

ISO 14001^[1] is a voluntary international standard for environmental management systems ("EMS"). ISO 14001:2004 provides the requirements for an EMS and ISO 14004^[2] gives general EMS guidelines.^[3] An EMS meeting the requirements of ISO 14001:2004 is a management tool enabling an organization of any size or type to:^[3]

1. Identify and control the environmental impact of its activities, products or services;
2. Improve its environmental performance continually, and
3. Implement a systematic approach to setting environmental objectives and targets, to achieving these and to demonstrating that they have been achieved.²

Organizations implementing ISO 14001 usually seek to obtain certification by independent Certification Bodies. Certification indicates that the documentation, implementation and effectiveness of the EMS conform to the specific requirements of ISO 14001. This standard is currently being updated to include elements of including a lifecycle perspective and including top management amongst other changes. The draft (DIS) standard ISODIS 14001:2014 is currently the draft standard applicable until the ISO 14001:2015 standard is finalised and published. In 2002, the ISO organization also published ISO 19011, the standard for auditing quality and environmental management systems (ISO 19011:2002), which was used for internal audits and certification audits of EMS until it was updated in 2011.^[4] The 2011 version on ISO 19011 restricts its use in first and second part audits, while third part audits (certification audits) are now covered in ISO/IEC 17021.^[5] A common misconception is that ISO 14001 certification automatically implies legal compliance.³ Certification under ISO 14001 does not directly reflect compliance with any legal requirements, although ISO 14001 demands the organization to evaluate its compliance with legal requirements. If there is no compliance with some legal requirement, ISO 14001 requires that the organization sets specific targets related to the non-compliance(s) and establishes, implements and maintains programmes to achieve compliance. Therefore it is possible that, at the time of audit,⁴ the organization fulfils the requirements of ISO 14001, yet there are one or more non-compliances with specific requirements, which are identified and which the organization actively works to correct. Specific guidance on this subject is provided by the European co-operation for Accreditation.^[6] The term "protocol" means the checklist used by environmental auditors as the guide for conducting the audit activities. There is no standard protocol, either in form or content.⁵ Typically, companies develop their own protocols to meet their specific



compliance requirements and management systems. Audit firms frequently develop general protocols that can be applied to a broad range of companies/operations.⁶

Current technology supports many versions of computer-based protocols that attempt to simplify the audit process by converting regulatory requirements into questions with "yes", "no" and "not applicable" check boxes. Many companies and auditors find these useful and there are several such protocol systems commercially available. Other auditors (typically those with many years of environmental auditing experience) use the regulations/permits directly as protocols. There is a long standing debate among environmental audit professionals on the value of large, highly detailed and prescriptive protocols⁷ (i.e., that can, in theory, be completed by an auditor with little or no technical experience) versus more flexible protocols that rely on the expertise and knowledge of experienced auditors and source documents (regulations, permits, etc.) directly. However usage of structured and prescriptive protocols in ISO 14001 audits allows easier review by other parties, either internal to the Certification Body (e.g. technical reviewers and certification managers) or external (accreditation bodies).⁸

In the US, permits for air emissions, wastewater discharges and other operational aspects, many times establish the primary legal compliance standards for companies. In these cases, auditing only to the regulations is inadequate. However, as these permits are site specific, standard protocols are not commercially available that reflect every permit condition for every company/site. Therefore, permit holders and the auditors they hire must identify the permit requirements and determine the most effective way to audit against those requirements.

During the past 20 years, advances in technology have had major impacts on auditing. Laptop computers, portable printers, CD/DVDs, the internet, email and wireless internet access have all been used to improve audits, increase/improve auditor access to regulatory information and create audit reports on-site.⁹ At one point in the 1990s, one major company invested significant resources in testing "video audits" where the auditor (located at the corporate headquarters) used real-time video conferencing technology to direct staff at a site to carry live video cameras to specific areas of the plant. While initially promising, this technology/concept did not prove acceptable. An emerging technology in environmental auditing is the use of tablet computers. Phase I Environmental Site Assessment ("ESA") are generally done in relation to mergers, acquisitions or financing activities.¹⁰ The intent of ESAs is to identify potential sources/existence of property contamination for purposes of clean up costs/liability under US law. ESA's rarely contain a compliance audit component and should not be confused with audits. The Supreme Audit Institution (SAI) in India is headed by the Comptroller and Auditor General (CAG) of India who is a constitutional authority. The CAG of India derives his mandate from Articles 148 to 151 of the Indian Constitution.¹¹ The CAG's (Duties, Powers and Conditions of Service) Act, 1971 prescribes functions, duties and powers of the CAG. While fulfilling his constitutional obligations, the CAG examines various aspects of government expenditure and revenues. The audit conducted by CAG is broadly classified into Financial, Compliance and Performance Audit. Environmental audit by SAI India is conducted within the broad framework of compliance and performance audit. Environmental audit privilege, or environmental privilege, in United States environmental law, is an evidentiary privilege created under state statute. The privilege protects the results of companies' internal environmental compliance audits from disclosure at trial, or in pretrial discovery.¹²

The environmental audit privilege is meant to incentivize companies to evaluate their own compliance with environmental regulations.¹³ Proponents of such laws further argue that it is necessary to encourage such self-evaluations, because regulatory agencies lack the resources to police all the polluters in their jurisdiction.¹⁴

Environmental audit privilege statutes have been promoted by the conservative American Legislative Exchange Council, which circulates a model statute known as the "Uniform State Environmental Audit Privilege Act".¹⁵ However, most state environmental privilege laws are non-uniform, and vary greatly in their scope, exceptions and effect.¹⁶

The United States Environmental Protection Agency has been skeptical of state environmental audit privilege laws, and generally requires that states limit the privilege's effect so as not to interfere with federal investigations.¹⁷ These concerns were heightened by the question of whether these laws would apply to state government agencies to which the EPA delegated its enforcement authority under federal law.¹⁸ Accordingly, in the past, the EPA has used its statutory powers in the delegation of EPA enforcement authority to discourage states from adopting excessively powerful environmental audit privilege laws.¹⁹

Some states do not recognize environmental audit privilege, but do provide immunity from civil penalties for the results of internal compliance audits. These states include Minnesota, New Jersey, and Rhode Island.²⁰



Environmental privilege is a concept in environmental sociology, referring to the ability of privileged groups to keep environmental amenities for themselves and deny them to less privileged groups.^[1] More broadly, it refers to the ability of privileged groups to keep an exclusive grip on the advantages of "social place," including non-ecological amenities.^[2] It has been characterized as "the other side of the coin"^[3] from environmental racism.^[3] Like other forms of racial privilege, it does not depend on personal racism, but rather structural racism.^[2] Environmental privilege is a consequence of both class and racial privilege with respect to access to the overall environment, influencing the social and economic realm. It is the result of cultural, economic, and political power^[4] being wielded. It provides exclusive access to environmental facilities such as elite neighborhoods that contain exclusive rivers, parks, and open areas to particular people. These groups are more likely to participate in sustainable efforts and have access to premium amenities.^[5] Furthermore, during the COVID-19 epidemic, wealthy communities were able to better adhere to safety protocols.^[4] The concept of environmental privilege first developed from the historical scholarship of Dorceta Taylor, who led the shift in scholarship on environmental racism away from consideration of environmental disadvantage in isolation, and toward a more holistic approach that accounted for the discriminatory effects of restrictive zoning.^{[5][6]} In her book, *The rise of the American Conservation Movement*, Taylor describes how early conservation efforts in America set the stage for the reservation of natural resources and amenities for the wealthy^[6]. She describes how the conservation movement in the United States began in the middle of the nineteenth century by white American elites with Eurocentric ideologies that mirrored Manifest Destiny.^[7] Their chief aim was to preserve the wilderness and reserve the serene landscapes for themselves, displacing Indigenous communities in the West.^[7] The preservation of the wilderness, in turn, reserved the land for white America. The conservation movement has involvement in racism, sterilization, and eugenics, and ultimately resulted in the exclusivity of nature for white male recreation.^[7] Scholars state that people of color, Indigenous communities, and the working class are more likely to live around hazardous waste, emission producing power plants, mining, and live in areas with a high probability for natural disasters.^[8] Environmental privilege is said to be the origin of this environmental polarity between the haves and the have-nots. Lisa Sun-Hee Park and David Pellow's book *The Slums of Aspen: Immigrants VS. The Environment in America's Eden*, outline these connections, specifying how environmental privilege is enjoyed by a small, wealthy population and the rest confront environmental burdens. This is studied on a local and global scale. Poor communities face ecological devastation from the exploitation of resources. This includes deforestation, intensive agriculture, fossil fuel mining, and the dumping of electronic waste, all of which occur among poor communities globally.^[5]

Today's environmental movement is maintained predominantly by wealthy whites in urban centers, therefore the city reflects the white perspective and mirrors their culture.^[4] Environmental privilege is often used in critiques of green gentrification,^[9] where environmental amenities such as urban agriculture cater largely to white or otherwise privileged urban groups.^[9] It has proven particularly illuminating in understanding the correlation between whiteness and participation in farmer's markets.^[10] Research shows low to middle-class African Americans are less likely to involve themselves in farmer's markets or other methods of alternative food institutions as opposed to conventional food resources.^[11] Alternative food institutions are often held in primarily white^[20], affluent communities, thereby creating the exclusivity of healthy, organic food. High-priced organic foods and luxurious and energy-efficient infrastructure generates uneven development in cities, causing low-income families to concentrate in devalued regions. The process of demarcated devaluation in cities, as described by Nathan McClintock, results in food deserts.^[12]

II. DISCUSSION

Environmental Privilege provides benefits such as eco-friendly lifestyles, sustainable living, and green consumerism. Access to greater green space and cleaner air in neighborhoods, and energy-efficient, LEED certified structures are just a few examples.^[21] In addition, there is access to alternative markets where sustainable apparel and food can be purchased, yet overall customary designs for exclusion are reproduced.^[4] Historically, policy makers and city planners quarantined low-income and devalued centers from newly developed urban spaces. As a result, sustainable goods and services along with new environmental projects are reserved for the wealthy.^[11] Affluent people oftentimes pollute the most via greenhouse gas emissions, waste, and over consumption, while low income communities endure their negative externalities: landfills, superfund sites, city pollution, and toxic runoff are a few examples.^[13] Zoning policies reduce the number of affordable housing available to migrant workers in Aspen. The wealthy resort town fought hard to prevent low-income families from moving in because they believed it would ruin their image. In turn, workers resort to living in dangerous spaces like flood plains and must to drive up to one-hundred miles to reach their place of employment.^[5]

During the height of the COVID-19 pandemic, affluent individuals had better access to resources, medical treatment, and housing. Wealthy communities were able to leave the dense cities and travel to more rural areas, second homes, or vacation



spots. Infection-rates studied in Sweden revealed that low-income communities were six-times more likely to catch the virus than affluent communities.^[4] In another analysis, African Americans and LatinX communities in the U.S. contracted COVID-19 more so than white communities because many blue-collar jobs were considered “essential” during the pandemic. Unsafe interactions with other people in dense cities and neighborhoods created a higher probability of contracting the virus. Many wealthy whites, on the other hand, were able to work from home, go on vacation, or minimize the hours worked.^[4] Author Justin Farrell in *Billionaire Wilderness* (2020) argues that there are powerful connections between nature and wealthy Americans, and that preservation of the environment is a tool utilized by affluent U.S. citizens to increase their earnings and establish exclusive pockets of the United States for themselves, often masking their influence as philanthropy.^[14] In Aspen, Colorado, American elites indulge in the picturesque scenery of surrounding nature and satiate themselves in luxurious amenities provided by migrant employees working in the tourist industry.^[15] It is the lower class who facilitate much of the opulent services to the wealthy whilst living in poverty.

Billionaire Wilderness explores how the ultra-rich are buying up land and utilizing one of the world's most pristine ecosystems to climb even further up the socioeconomic ladder, weaving captivating storytelling with thought-provoking analysis^[22]. In Teton County, Wyoming, the well-off are tormented by stigmas, shame, and concern about their social standing, and who appropriate nature and rural people to create more virtuous and deserving versions of themselves. *Billionaire Wilderness* uncovers the hidden links between wealth concentration and the environment^[23], two of the most serious and contested concerns of our day.^[14] Teton County, with a per capita income of \$194,485, has the highest per capita income of all 3,144 counties in the United States, according to the US Department of Commerce. New York County (Manhattan) is a distant second at \$148, 002, and Wheeler County, Georgia is the lowest in the US at \$15,787. Teton County has one of the highest median family incomes in the country, at \$96,113, putting it in the top 2.6 percent of all counties in the country. Teton County was not always prosperous, but as time passed, the local economy improved.^[14]

A financial audit is conducted to provide an opinion whether "financial statements" (the information is verified to the extent of reasonable assurance granted) are stated in accordance with specified criteria^[24]. Normally, the criteria are international accounting standards, although auditors may conduct audits of financial statements prepared using the cash basis or some other basis of accounting appropriate for the organization. In providing an opinion whether financial statements are fairly stated in accordance with accounting standards, the auditor gathers evidence to determine whether the statements contain material errors or other misstatements.^[1] The audit opinion is intended to provide reasonable assurance, but not absolute assurance, that the financial statements are presented fairly, in all material respects, and/or give a true and fair view in accordance with the financial reporting framework^[25]. The purpose of an audit is to provide an objective independent examination of the financial statements, which increases the value and credibility of the financial statements produced by management, thus increase user confidence in the financial statement, reduce investor risk and consequently reduce the cost of capital of the preparer of the financial statements.^[2]

In accordance with the US Generally Accepted Accounting Principles (US GAAP), auditors must release an opinion of the overall financial statements in the auditor's report. Auditors can release three types of statements other than an unqualified/unmodified opinion. The unqualified auditor's opinion is the opinion that the financial statements are presented fairly. A qualified opinion is that the financial statements are presented fairly in all material respects in accordance with US GAAP, except for a material misstatement that does not however pervasively affect the user's ability to rely on the financial statements^[26]. A qualified opinion can also be issued for a scope limitation that is of limited significance. Further the auditor can instead issue a disclaimer, because there is insufficient and appropriate evidence to form an opinion or because of lack of independence. In a disclaimer the auditor explains the reasons for withholding an opinion and explicitly indicates that no opinion is expressed. Finally, an adverse audit opinion is issued when the financial statements do not present fairly due to departure from US GAAP and the departure materially affects the financial statements overall. In an adverse auditor's report the auditor must explain the nature and size of the misstatement and must state the opinion that the financial statements do not present fairly in accordance with US GAAP.^[3]

Financial audits are typically performed by firms of practicing accountants who are experts in financial reporting. The financial audit is one of many assurance functions provided by accounting firms. Many organizations separately employ or hire internal auditors, who do not attest to financial reports but focus mainly on the internal controls of the organization. External auditors may choose to place limited reliance on the work of internal auditors. Auditing promotes transparency and accuracy in the financial disclosures made by an organization, therefore would likely reduce such corporations concealment of unscrupulous dealings.^[4]



Internationally, the International Standards on Auditing (ISA) issued by the International Auditing and Assurance Standards Board (IAASB) is considered as the benchmark for audit process. Almost all jurisdictions require auditors to follow the ISA or a local variation of the ISA.²⁷

Financial audits exist to add credibility to the implied assertion by an organization's management that its financial statements fairly represent the organization's position and performance to the firm's stakeholders. The principal stakeholders of a company are typically its shareholders, but other parties such as tax authorities, banks, regulators, suppliers, customers and employees may also have an interest in knowing that the financial statements are presented fairly, in all material aspects. An audit is not designed to provide absolute assurance, being based on sampling and not the testing of all transactions and balances; rather it is designed to reduce the risk of a material financial statement misstatement whether caused by fraud or error. A misstatement is defined in ISA 450 as an error, omitted disclosure or inappropriate accounting policy. "Material" is an error or omission that would affect the users decision. Audits exist because they add value through easing the cost of information asymmetry and reducing information risk, not because they are required by law (note: audits are obligatory in many EU-member states and in many jurisdictions are obligatory for companies listed on public stock exchanges). For collection and accumulation of audit evidence, certain methods and means generally adopted by auditors are:¹⁵

1. Posting checking
2. Testing the existence and effectiveness of management controls that prevent financial statement misstatement
3. Casting checking
4. Physical examination and count
5. Confirmation
6. Inquiry
7. Observation
8. inspection
9. Year-end scrutiny
10. Re-computation
11. Tracing in subsequent period
12. Bank reconciliation
13. Vouching
14. Verification of existence, ownership, title and value of assets and determination of the extent and nature of liabilities²⁸

Financial audit is a profession known for its male dominance. According to the latest survey, it found that 70–80% of financial auditors are male, with 2% being female and the rest being a mixture of both

Greenwood et al. (1990)¹⁶ defined the audit firm as, "a professional partnership that has a decentralized organization relationship between the national head office and local offices". Local offices can make most of the managerial decisions except for the drawing up of professional standards and maintaining them.

The Big Four are the four largest international professional services networks, offering audit, assurance, tax, consulting, advisory, actuarial, corporate finance, and legal services. They handle the vast majority of audits for publicly traded companies as well as many private companies, creating an oligopoly in auditing large companies. It is reported that the Big Four audit 99% of the companies in the FTSE 100, and 96% of the companies in the FTSE 250 Index, an index of the leading mid-cap listing companies.¹⁷ The Big Four firms are shown below, with their latest publicly available data. None of the Big Four firms is a single firm; rather, they are professional services networks. Each is a network of firms, owned and managed independently, which have entered into agreements with other member firms in the network to share a common name, brand and quality standards. Each network has established an entity to co-ordinate the activities of the network. In one case (KPMG), the co-ordinating entity is Swiss, and in three cases (Deloitte Touché Tohmatsu, PricewaterhouseCoopers and Ernst & Young) the co-ordinating entity is a UK limited company. Those entities do not themselves perform external professional services, and do not own or control the member firms. They are similar to law firm networks found in the legal profession. In many cases each member firm practices in a single country, and is structured to comply with the regulatory environment in that country. In 2007 KPMG announced a merger of four member firms (in the United Kingdom, Germany, Switzerland and Liechtenstein) to form a single firm. Ernst & Young also includes separate legal entities which manage three



of its four areas: Americas, EMEIA (Europe, The Middle East, India and Africa), and Asia-Pacific. (The Japan area does not have a separate area management entity). These firms coordinate services performed by local firms within their respective areas but do not perform services or hold ownership in the local entities.^[8] This group was once known as the "Big Eight", and was reduced to the "Big Six" and then "Big Five" by a series of mergers. The Big Five became the Big Four after the demise of Arthur Andersen in 2002, following its involvement in the Enron scandal.

III.RESULTS

Costs of audit services can vary greatly dependent upon the nature of the entity, its transactions, industry, the condition of the financial records and financial statements, and the fee rates of the CPA firm.^{[9][10]} A commercial decision such as the setting of audit fees is handled by companies and their auditors. Directors are responsible for setting the overall fee as well as the audit committee. The fees are set at a level that could not lead to audit quality being compromised.^[11] The scarcity of staffs and the lower audit fee lead to very low billing realization rates.^[12] As a result, accounting firms, such as KPMG, PricewaterhouseCoopers and Deloitte who used to have very low technical inefficiency, have started to use AI tools.^[13] The earliest surviving mention of a public official charged with auditing government expenditure is a reference to the Auditor of the Exchequer in England in 1314. The Auditors of the Impresa were established under Queen Elizabeth I in 1559 with formal responsibility for auditing Exchequer payments. This system gradually lapsed and in 1780, Commissioners for Auditing the Public Accounts were appointed by statute. From 1834, the Commissioners worked in tandem with the Comptroller of the Exchequer, who was charged with controlling the issuance of funds to the government.

As Chancellor of the Exchequer, William Ewart Gladstone initiated major reforms of public finance and Parliamentary accountability. His 1866 Exchequer and Audit Departments Act required all departments, for the first time, to produce annual accounts, known as appropriation accounts. The Act also established the position of Comptroller and Auditor General (C&AG) and an Exchequer and Audit Department (E&AD) to provide supporting staff from within the civil service. The C&AG was given two main functions – to authorize the issue of public money to government from the Bank of England, having satisfied himself that this was within the limits Parliament had voted – and to audit the accounts of all Government departments and report to Parliament accordingly.¹⁵

Auditing of UK government expenditure is now carried out by the National Audit Office. The Australian National Audit Office conducts all financial statement audits for entities controlled by the Australian Government.^[14] The origins of financial audit begin in the 1800s in England, where the need for accountability first arose. As people began to recognize the benefits of financial audits, the need for standardization became more apparent and the use of financial audits spread into the United States. In the early 1900s financial audits began to take on a form more resembling what is seen in the twenty-first century.^{[15][16]}

The first laws surrounding audit formed in England in the beginning of the nineteenth century and helped the financial sector in England prosper. To fully gain the trust of the public, the auditor profession would need to grow and standardize itself and establish organizations, becoming equally accountable across the country and the world.^[17]

In 1845 England, accompanied by new law, the first corporation was formed. The law required auditors who owned a share of the company but who did not directly manage the company's operations. Audit financial documents had been presented to shareholders, but at this point anyone could be an auditor. In these early days there was little accountability or standardization.^[18]

Financial auditing, and various other English accounting practices, first came to the United States in the late nineteenth century. These practices came by way of British and Scottish investors who wanted to stay more informed on their American investments. Around this same time, an American accounting system was taking root.^[19]

Within the next 10 years (1896), professionals had the opportunity to become accredited by obtaining a license to become a Certified Public Accountant. Copious amounts of the auditing work done at the end of the 19th century were by chartered accountants from England and Scotland. This included the work of Arthur Young, Edwin Guthrie, and James T. Anyon.^[20]

In the 1910s financial audits came under scrutiny for their unstandardized practices of accounting for various items, including tangible and intangible assets. Notably was the article "The Abuse of the Audit in Selling Securities" written by Alexander Smith in 1912, the article detailed the flaws of the auditing system. While others in the industry agreed with Smith's comments, many believed standardization was impossible.^[21]



As the reputation of accounting firms grew, federal agencies began to seek out their advice. The Federal Trade Commission (FTC) and the Federal Reserve Board inquired about auditing procedures by requesting a technical memorandum in 1917. The Institute provided this guidance, which was to be published by the Federal Reserve Board as a bulletin. The Board and FTC each had their own agenda by requesting this memorandum. The former wanted to inform bankers on how important it was to obtain audited financial statements from borrowers, whilst the latter was to encourage uniform accounting. This bulletin included information about recommended auditing procedures in addition to the format for the profit and loss statement and the balance sheet. The memorandum was revised and published making it the first authoritative guidance published in the United States in regard to auditing procedures.^[20]

It was not until 1932, when the New York Stock Exchange began requiring financial audits, that the practice started to standardize.^[22] It did not become a requirement for newly listed companies until 1933 when the Securities Act of 1933 and the Securities Exchange Act of 1934 were enacted by President Franklin D. Roosevelt. The latter created the Securities and Exchange Commission, which required all current and new registrants to have audited financial statements. In doing so, the services that CPAs could provide became more valued and requested.^[20]

In the United States, the accounting and auditing profession reached its peak from the 1940s to the 1960s. The SEC was reliant on the Institute for the auditing procedures used by accounting firms during engagements. Additionally, in 1947 a committee from the Institute advocated for "generally accepted auditing standards", which were approved in the following year. These standards governed the terms of the auditor's performance relating to professional conduct and the execution of the auditor's judgment during engagements.^[20]

In the United States, the SEC has generally deferred to the accounting industry (acting through various organizations throughout the years) as to the accounting standards for financial reporting, and the U.S. Congress has deferred to the SEC.

This is also typically the case in other developed economies. In the UK, auditing guidelines are set by the institutes (including ACCA, ICAEW, ICAS and ICAI) of which auditing firms and individual auditors are members. While in Australia, the rules and professional code of ethics are set by The Institute of Chartered Accountants Australia (ICAA), CPA Australia (CPA) and The National Institute of Accountants (NIA).^[24]

Accordingly, financial auditing standards and methods have tended to change significantly only after auditing failures. The most recent and familiar case is that of Enron. The company succeeded in hiding some important facts, such as off-book liabilities, from banks and shareholders.^[25] Eventually, Enron filed for bankruptcy, and (as of 2006) is in the process of being dissolved. One result of this scandal was that Arthur Andersen, then one of the five largest accountancy firms worldwide, lost their ability to audit public companies, essentially killing off the firm.¹⁷

A recent trend in audits (spurred on by such accounting scandals as Enron and Worldcom) has been an increased focus on internal control procedures, which aim to ensure the completeness, accuracy and validity of items in the accounts, and restricted access to financial systems. This emphasis on the internal control environment is now a mandatory part of the audit of SEC-listed companies, under the auditing standards of the Public Company Accounting Oversight Board (PCAOB) set up by the Sarbanes–Oxley Act.

Many countries have government sponsored or mandated organizations who develop and maintain auditing standards, commonly referred to generally accepted auditing standards or GAAS. These standards prescribe different aspects of auditing such as the opinion, stages of an audit, and controls over work product (i.e., working papers).¹⁸

Some oversight organizations require auditors and audit firms to undergo a third-party quality review periodically to ensure the applicable GAAS is followed.

The following are the stages of a typical audit:^[1]

Phase I: planning of audit and design an audit approach

- Accept Client and Perform Initial Planning.
- Understand the Client's Business and Industry.
 - What should auditors understand?^[26]
 - The relevant industry, regulatory, and other external factors including the applicable financial reporting framework



- The nature of the entity
- The entity's selection and application of accounting policies
- The entity's objectives and strategies, and the related business risks that may result in material misstatement of the financial statements
- The measurement and review of the entity's financial performance
- Internal control relevant to the audit
- Assess Client's Business Risk
- Set Materiality and Assess Accepted Audit Risk (AAR) and Inherent Risk (IR).
- Understand Internal Control and Assess Control Risk (CR).
- Develop Overall Audit Plan and Audit Program

Phase II: perform test of controls and substantive test of transactions¹⁹

- Test of Control: if the auditor plans to reduce the determined control risk, then the auditor should perform the test of control, to assess the operating effectiveness of internal controls (e.g. authorization of transactions, account reconciliations, segregation of duties) including IT General Controls. If internal controls are assessed as effective, this will reduce (but not entirely eliminate) the amount of 'substantive' work the auditor needs to do (see below).
- Substantive test of transactions: evaluate the client's recording of transactions by verifying the monetary amounts of transactions, a process called substantive tests of transactions. For example, the auditor might use computer software to compare the unit selling price on duplicate sales invoices with an electronic file of approved prices as a test of the accuracy objective for sales transactions. Like the test of control in the preceding paragraph, this test satisfies the accuracy transaction-related audit objective for sales. For the sake of efficiency, auditors often perform tests of controls and substantive tests of transactions at the same time.
- Assess Likelihood of Misstatement in Financial Statement.²⁰
- At this stage, if the auditor accept the CR that has been set at the phase I and does not want to reduce the controls risk, then the auditor may not perform test of control. If so, then the auditor perform substantive test of transactions.
- This test determines the amount of work to be performed i.e. substantive testing or test of details.^[27]

Phase III: perform analytical procedures and tests of details of balances

- where internal controls are strong, auditors typically rely more on Substantive Analytical Procedures (the comparison of sets of financial information, and financial with non-financial information, to see if the numbers 'make sense' and that unexpected movements can be explained)
- where internal controls are weak, auditors typically rely more on Substantive Tests of Detail of Balance (selecting a sample of items from the major account balances, and finding hard evidence (e.g. invoices, bank statements) for those items)²¹
- Some audits involve a 'hard close' or 'fast close' whereby certain substantive procedures can be performed before year-end. For example, if the year-end is 31 December, the hard close may provide the auditors with figures as at 30 November. The auditors would audit income/expense movements between 1 January and 30 November, so that after year end, it is only necessary for them to audit the December income/expense movements and 31 December balance sheet. In some countries and accountancy firms these are known as 'rollforward' procedures.

Phase IV: complete the audit and issue an audit report

After the auditor has completed all procedures for each audit objective and for each financial statement account and related disclosures, it is necessary to combine the information obtained to reach an overall conclusion as to whether the financial statements are fairly presented. This highly subjective process relies heavily on the auditor's professional judgment. When the audit is completed, the CPA must issue an audit report to accompany the client's published financial statements.²²



IV.IMPLICATIONS

Currently, many entities being audited are using information systems, which generate information electronically. For the audit evidences, auditors get dynamic information generated from the information systems in real time. There are less paper documents and pre-numbered audit evidences available, which leads a revolution to audit mythology.^[23]

Impact of information technology on the audit process

Over the past couple of years, technology is becoming a bigger emphasis for the audit profession, professional bodies, and regulators. From operational efficiency to financial inclusion and increased insights, technology has a lot to offer. The way businesses are performed and data is analyzed is changing as a result of technological advancements. Data management is becoming increasingly important. Artificial intelligence, blockchain, and data analytics are major changers in the accounting and auditing industries, altering auditors' roles. The introduction of cloud computing and cloud storage has opened up previously unimaginable possibilities for data collection and analysis. Auditors can now acquire and analyze broader industry data sets that were previously unreachable by going beyond the constraints of business data. As a result, auditors are better equipped to spot data anomalies, create business insights, and focus on business and financial reporting risk.^[25]

Impacts of technology on the accounting profession

Artificial intelligence

This refers to machines that do tasks that need some kind of 'intelligence,' which can include learning, sensing, thinking, creating, attaining goals, and generating and interpreting language. Recent advances in AI have relied on approaches like machine learning and deep learning, in which algorithms learn how to do tasks like classify objects or predict values through statistical analysis of enormous amounts of data rather than explicit programming.

Machine learning uses data analytics to simultaneously and continuously learn and identify data patterns allowing it to make predictions based on the data. Currently, Deloitte and PricewaterhouseCoopers (PWC) are both using machine learning tools within their companies to aid in financial auditing. Deloitte uses a software called Argus, which reads and scans documents to identify key contract terms and other outliers within the documents. PWC uses Halo, which is another machine learning technology that analyzes journal entries in the accounting books to identify areas of concern.^[24]

Blockchain

Blockchain is a fundamental shift in the way records are created, maintained, and updated. Blockchain records are distributed among all users rather than having a single owner. The blockchain approach's success is based on the employment of a complicated system of agreement and verification to ensure that, despite the lack of a central owner and time gaps between all users, a single, agreed-upon version of the truth is propagated to all users as part of a permanent record. This results in a type of 'universal entry bookkeeping,' in which each participant receives an identical and permanent copy of a single entry.

Blockchain technology has seen its growth within the financial auditing sector. Blockchain is a decentralized, distributed ledger, which makes it reliable and nearly impossible to be breached. Blockchain is also able to verify the authenticity of transactions in real time, giving it the ability to alert necessary parties for fraud. This helps improve the audit process and the accuracy of the audit. Before, auditors had to manually go through thousands of entries in a sample and now with blockchain technology, every single transaction is verified as soon as it is entered.^[25]

Cyber security

Cyber security protects networks, systems, devices, and data from attack, unauthorized access, and harm. Cyber security best practices also include a broader range of operations such as monitoring IT infrastructures, detecting attacks or breaches, and responding to security failures. The spread of cyber risk across all organizational activities, the external nature of many of the risks, and the rate of change in the risk are just a few of the issues that organizations face in developing effective risk management around cyber security.

Numerous banks and financial organizations are studying blockchain security solutions as a means of mitigating risk, cyber risks, and fraud. While these latter systems are less susceptible to cyberattacks that may bring the entire network down, security concerns remain, as a successful hack would allow access to not just the data saved at a particular point, but to all data in the digital ledger.^[26]



V.CONCLUSIONS

The term “Green” means eco-friendly or not damaging the environment. This can acronymically be called as “Global Readiness in Ensuring Ecological Neutrality” (GREEN). Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. Green accounting can be defined as systematic identification, quantification, recording, reporting & analysis of components of ecological diversity & expressing the same in financial or social terms. “Green Auditing”, an umbrella term, is known by another name “Environmental Auditing”. The ‘Green Audit’ aims to analyze environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit.

Educational institutions have broad impacts on the world around them, both negative and positive. The activities pursued by campus can create a variety of adverse environmental impacts. But they are also in a unique position as educational institutions to be leaders in pursuing environmentally sustainable solutions.²⁷

REFERENCES

1. BS EN ISO 14001: "Environmental management systems. Requirements with guidance for use" (2004)
2. ^ BS EN ISO 14004: "Environmental management systems. General guidelines on principles, systems and support techniques" (2010)
3. ^ "Environmental management".
4. ^ BS EN ISO 19011: "Guidelines for auditing management systems" (2011)
5. ^ BS EN ISO/IEC 17021: "Conformity assessment. Requirements for bodies providing audit and certification of management systems" (2011)
6. ^ EA-7/04: "Legal Compliance as a part of Accredited ISO 14001:2004 certification", European co-operation for Accreditation (2010).
7. American Legislative Exchange Council. "Uniform State Environmental Audit Privilege Act". Retrieved 2017-11-23.
8. ^ Robin Morris Collin (2008). *Battleground: Environment*. p. 183. ISBN 0313082405.
9. ^ James B. Witkin (1999). *Environmental aspects of real estate transactions: from brownfields to green buildings*. American Bar Association.
10. ^ American Law Institute-American Bar Association Committee on Continuing Professional Education (1998). *Environmental and Toxic Tort Matters*. p. 227.
11. ^ Christina Austin (1996). "State Environmental Audit Privilege Laws: Can EPA Still Access Environmental Audits in Federal Court?". *Environmental Law*. 26 (4): 1241–1261. JSTOR 43267549.
12. ^ "State Audit Privilege and Immunity Laws & Self-Disclosure Laws and Policies". United States Environmental Protection Agency. Retrieved 2017-11-23.
13. Arens, Elder, Beasley; *Auditing and Assurance Services*; 14th Edition; Prentice Hall; 2012
14. ^ "Auditing Standard No. 5". pcaobus.org. Retrieved 7 April 2016.
15. ^ "AU 508 Reports on Audited Financial Statements". pcaobus.org. Retrieved 7 April 2016.
16. ^ CALCPA. (2010, November). Report: Auditing Missteps During the Economic Crisis. *News & Trends*, p. 4.
17. ^ *Auditing and Assurance Vol.1*. The Institute of Chartered Accountants of India. 2011. p. 3.4. ISBN 978-81-8441-135-5. Retrieved 27 August 2012.
18. ^ Greenwood, Royston; Hinings, C. R.; Brown, John (1 December 1990). "'P2-Form" Strategic Management: Corporate Practices in Professional Partnerships". *Academy of Management Journal*. 33 (4): 725–755. doi:10.2307/256288. ISSN 0001-4273. JSTOR 256288.
19. ^ Mario Christodoulou (30 March 2011). "U.K. Auditors Criticized on Bank Crisis". *Wall Street Journal*.
20. ^ Ernst & Young. "Legal statement". ey.com.
21. ^ Denlinger, Craig. "Audit Costs". Retrieved 27 January 2014.
22. ^ "Audit Costs". Retrieved 15 April 2015.



23. ^ Commission, c=au;o=Australian Government;ou=Australian Government Australian Securities and Investments. "Audit quality - The role of directors and audit committees". asic.gov.au. Retrieved 17 May 2016.
24. ^ Chang, Hsihui; Kao, Yi-Ching; Mashruwala, Raj; Sorensen, Susan M. (10 April 2017). "Technical Inefficiency, Allocative Inefficiency, and Audit Pricing". *Journal of Accounting, Auditing & Finance*. 33 (4): 580–600. doi:10.1177/0148558x17696760. S2CID 157787279.
25. ^ Kokina, Julia; Davenport, Thomas H. (March 2017). "The Emergence of Artificial Intelligence: How Automation is Changing Auditing". *Journal of Emerging Technologies in Accounting*. 14 (1): 115–122. doi:10.2308/jeta-51730.
26. ^ Office, Australian National Audit (12 May 2016). "Auditor-General and the Office". www.anao.gov.au. Retrieved 17 May 2016.
27. ^ Carey, John (1969). *Rise of the accounting profession, v. 1. From technician to professional, 1896-1936.*; American Institute of Certified Public Accountants.