

XBRL and the Future of Electronic Business Reporting in Nigeria

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Abstract The idea of electronic Standard Business Reporting (SBR) has achieved remarkable heights in developed economies over the last decade. With the development of XBRL in 1998 by Charlie Hoffman and subsequent introduction of the first SBR projects in the Netherlands and Australia less than ten years after, an important question therefore arises: what level of similar advancement has been achieved in emerging economies and what are the possible implications for the future of financial reporting in these countries. To analyze this topic, Nigeria has been chosen as a reference point. To enhance objectivity, an empirical approach was engaged through a structured survey directed at professional accountants in the Big Four accounting firms with offshore offices located in the country. This information was sought in order to assess the future of electronic Business Reporting in Nigeria in line with the global trend of harmonizing the accounting profession. Results show that respondents share the view that XBRL implementation would improve the Nation's Corporate Governance process. Although there exist over 50 XBRL projects in 15 Economies in Europe and over 10,000 voluntary filers in Northern America, respondents are of the view that substantial adoption of XBRL in Nigeria is likely to be influenced by mandatory requirement. This outcome suggest that there should be reform patterns of behaviour of market agents and regulatory agencies to encourage the adoption of XBRL Taxonomy interactive data, so as to provide the channel for the most adequate mechanism of electronic Business Reporting that would assist the Nation's capital market reach its desired global marketplace for developmental purposes.

Keywords Standard Business Reporting, XBRL, financial reporting, corporate governance, regulatory agencies, market agents, capital market, Nigeria

"... What we need is something that will give individuals faster access to better information that they can easily use and understand...analyze and compare the data with the same information from other companies...We want to make the numbers derived from financial statements vastly more accurate...and ... want to allow companies to communicate with investors on a constant basis"

(SEC Chairman, COX, 2006)

With approximately 120 nations and reporting jurisdictions authorizing and demanding IFRS for locally listed entities and just about 90 countries in full compliance (IFRS, 2013) [14], the increasing global demand for standardized corporate financial reporting by business and regulatory agencies, owing from the emergence and development of multinationals and growth of international markets (Collao, 2007) [6] to capture, exchange and analyze data (Selim, 2012) [21] has reached significant heights both in practice and in literature. The limitations to understanding and interpreting financial information imposed by multiplicity in accounting principles and rules which had hitherto characterized cross-border corporate reporting is being laid to rest by the internationalization of economic activity as considerable efforts by international organizations to harmonize accounting rules in various countries (Collao et al., 2007) [6] is increasingly improving the international comparability of financial information. Beginning from the approval of Regulation 1606/2002 mandating the application of IFRS by business groups listed on the European stock exchanges as of January 2005 (Collao, 2007) [6], to the closest political allies and other most important trading partners of the United States including Canada, Mexico and Japanese public companies gradually deciding to adopt the IFRS in lieu of their own local accounting standards (Djatej, 2012) [9] perhaps there appears to be no limit to how much the global standardization of the corporate reporting process could achieve. Several indications also exist that the US is also gradually moving towards IFRS adoption with the inclusion of IFRS in corporate reports of U.S. multinationals by their foreign

1. Introduction

subsidiaries (Iwata, 2009) [15].

Nevertheless, what is obvious is the significant attention towards corporate reporting using standards, an argument in favour of ease of international comparability of financial statements. Whether in conformity with statutes or regulations the dissemination of financial and other quantifiable business information is paramount to effective corporate governance. The output of this reporting process is a number of required and intended documents targeted at both regulators and other stakeholders alike ((Azam & Taylor, 2011) [1]. However, the concept of standardized business reporting would only be relevant if only a seamless integration of corporate accounting and management information systems is tied to the internal reporting processes and procedures (Volmer et al., 2007) [30] in this electronic age when the web is entering its recalcitrant years. What was previously relatively novel was the search for an electronic data exchange podium capable of processing and *reporting* financial and business information through the supply chain to the corporate public electronic domain. There are several indicators that the world is moving towards the harmonization of electronic business reporting. Ever since 2005 when the U.S. Securities and Exchange Commission (SEC) introduced the XBRL Voluntary Filing Program (VFP), the early adoption program intended for preparing companies on EDGAR submission of XBRL data, over 75 companies have filed in XBRL format amongst which nearly 10% are foreign (XBRL, 2010) [32]. Several other countries have already adopted XBRL formerly referred to as XFRML, and are making extensive use of its benefits while many others are making preparations to deploy the technology. By 2011, there were about 50 XBRL projects in 15 European countries being established or in progress (Bai et al., 2012) [2].

Although Nigeria is one of the 120 reporting jurisdictions that has authorized the adoption of IFRS for all entities including listed and non-listed (public listed and significant public interest entities by January 1, 2012; other entities such as not for profit, pension funds, and other publicly owned entities by January 1, 2013; and SME's by January 1, 2014). As yet, no blueprint nor any definite decision has been reached, perhaps no national schedule for the deployment of XBRL. Although multinational audit firms appears anxious to go forward with the change for their clients, but for regulatory and statutory reasons they must ensure coordination with local jurisdictions.

Ever since the Internet programming language came into effect in 1998 when Charles Hoffman began prototyping with XML for financial statements in the US, there has been close to 900 XBRL and XML academic and professional literature around the world majority largely expository in nature. However the authors are unable to identify any of such studies in Nigeria hence the need to bridge this gap. The objective of this paper is to investigate the perspectives of professional accountants on the likely implications of XBRL adoption in the future of Nigeria's corporate electronic reporting system. In lieu of XBRL as a programme within the Standard Business Reporting (SBR) Taxonomy specifically,

the study examined the views of practitioners relative to the adoption of XBRL in the future of Nigeria's Internet financial reporting. The paper evolves as follows. Next section provides a review of contemporary academic literature on XBRL. Section 3 comprises the research design, including the detailed research questions, the description of the methodology and data. Thereafter, results are herein presented in Section 4. Section 5 discusses results and concludes the paper.

2. Literature Review

In this section we will carry out a review of existing literature on electronic corporate financial reporting with specific emphasis on XBRL, the Internet programming language. The authors have observed that the success rate of XBRL adoption is highly significant especially in developed economies. We also perceive that following the adoption of IFRS in Nigeria and the indications of its gradual implementation in the U.S. as a replacement for the US GAAP, the Nigerian regulatory authorities shall in due course deploy metrics as well as lay out plans to implement XBRL.

2.1. Electronic Business Reporting in Nigeria

The era of technology sophistication has engendered use of the Web as an important channel of communicating qualitative and quantitative business information to stakeholders. Hitherto in Nigeria, majority of publicly listed entities simply publish their periodic reports usually via Portable Document Format (PDF) versions whenever they so choose until recently when the X-Issuer was launched in March, 2013 by the NSE. The X-Issuers' Portal is designed to allow online submission of information by listed companies from the comfort of their offices, it is by no means a replacement for XBRL as it only replaces hard copies submission of information to the Exchange. The portal is a platform directed towards improving transparency and accountability as well as expedites the discharge of post listing obligations relating to structure and continuous disclosures by issuers (Vanguard, 2013) [29]. Although one of the goals of this platform is to facilitate comparison of data by international and local investors alike, it does not eliminate the challenges posed by incompatibility of business information systems and software, and other similar technical encounters which places significant limitations on such cross comparisons. Thus we can formulate the following hypothesis:

H1: Introduction of the X-Issuer can discourage adoption of XBRL in Nigeria.

2.2. XBRL and Business Information Supply Chain

The existence of accounting standards and the availability of financial reports allow certain amount of cross-companies

quantitative information comparisons. Nevertheless, there is substantial amount of restrictions around human physical interference with manual data input in making such comparisons in particular for automated analysis of comprehensive and large-scale research, hence the need for more advanced search facilitating technologies capable of presenting information in a transparent semantic format (Hodge et al., 2004) [13] that would offer users of financial information more sophisticated electronic business reporting platform (Feitsma, 2008) [11] as that provided by XBRL. In other jurisdictions especially in developing economies, companies often make available unsecured PDF versions of annual reports which makes it subject to alteration after audit sign-off wherein it is possible to protect such for integrity reasons (Smith & Pierce, 2005) [27].

The history of XBRL is traceable to Charlie Hoffman in 1997 when his proposal to adopt XML for financial reporting (Deshmukh, 2004) [8] was supported by the American Institute of Certified Public Accountants (AICPA). The same year, Hoffman developed the first prototype (Phillips & Colvard, 2007) [21] and funding was granted following the approval by a steering committee to develop a controlled version of the technology. Subsequently, several firms from various industries including financial and non-financial services companies, as well as software developers joined the committee to develop version 2.0 in December 2001. This followed the release of XBRL 1.0 one year earlier, a financial statements specification intended for commercial and industrial establishments in the US (XBRL, 2009) [31].

The XBRL is a structured but adaptable computer language written to enable instant use of business reporting on the internet. It is a universal, neutral software reporting standard rapidly gaining general acceptance with wide incorporation into business, production and consumption software information. XBRL is platform independent, free and open standard available to unlimited users exclusive of license fees and offers software developers using Internet technology a common language to facilitate their products direct communication. It also allows companies as information producers' opportunity to reprocess information in their systems for multiple reporting purposes without manual duplication. For final users of corporate reports XBRL offers direct access to desired specific information in readable report with instant use of the information placed on analytical software to enhance qualitative decision making (Jones & Willis, 2003) [16].

XBRL is an extension of the eXtensible Markup Language (XML) with specification maintained by xbrl.org (Feitsma, 2008) [11]. Typically reports generated and produced by companies over the Internet are delivered in formats such as HTML, a language which can neither be processed directly by recipients' software nor automatically separated for computerized analysis and onward processing. In addition such computer language does not transmit text the same way a paper report is used. Hence the need to input manually in a format acceptable to the underlying application or perhaps, make use of customized software to

perform equivalent task for conversion into the required format. This eradicates the benefit of electronic processing. The solution to this inadequacy is provided in XBRL as individual data items are tagged and attached a style-sheet in order to convert XBRL files into documents similar to conventional paper reports.

The system of tagging governed by the XBRL specification explains how taxonomies and instance documents are created. Tagging involves the assignment of coded identifiers to financial statement items. When an item of data is tagged, it retains its specific identity and is capable of being interpreted unswervingly by a users' application software. Subsequently, the US SEC referred to XBRL inclined reports as "interactive data" which implies that there is significant improvement in the exchange and processing of data. Taxonomies referred to the tagging dictionaries while instance documents are files sent from the reporting entity to final users to deliver XBRL data. XBRL is adaptable across all computer hardware devices and electronic tasks and has unrestricted organizational reporting and support for standard tasks involved in business data analysis and processing. Business systems are able to capture, treat and intelligently recognize information in a XBRL document and subsequently select, analyze, store, exchange with other computers and ultimately present in multitudes of formats to final users. In this way there is greater amount of speed in handling financial data. Information produced is also error free and permits automated information scrutiny procedures.

2.3. Review of Empirical Studies

In compliance with these research for electronic Standard Business Reporting (SBR) of which XBRL is one, Sinnott and Overell (2009) [26] identified key success factors for successful implementation. First, the willingness of regulators towards improving their oversight functions of financial markets; second, firms' continuous and renewed efforts towards integrating and improving their information systems efficiency; and lastly the clamor for superior transparency in the corporate governance function of public entities. Based on the above discussions and its application to XBRL adoption with particular reference to corporate reporting in Nigeria, we suggest the hypothesis:

H2: Adoption of XBRL interactive data would improve Corporate Governance in Nigeria.

Corporate benefits derivable from XBRL are enormous and cut across tremendous cost savings from replacement of manual with automated processes (SEC, 2009) [25]; efficiency of financial transactions processing, reporting and onwards analysis; improved data migration resulting from automated processing; reduction of the filing burden and improved information exchange between companies and regulators; elimination of data redundancy and human interference (Morgan, 2009) [20]; overall increased efficiency of XBRL dependent systems; and single plus multiple independent comparisons of direct data

extracted from individual companies report filings. In the advent of toxic and asset-backed securities in the financial services industry, XBRL would also support automated tracking, reporting and presentation of such assets (Soule, 2009) [28]. Employing these arguments to XBRL implementation, we can construct the hypothesis below.

H3: Perceived benefits of XBRL can influence firms' willingness to adopt interactive data.

Although quite a handful of benefits have been attributed to XBRL adoption a number of concerns have however been raised, Mohammed et al., (2009) [18] acknowledged that factors such as lack of experts to support its implementation especially in evolving economies; large set-up and learning cost implications of additional hardware and software components; time and other human efforts required to adopt the basics, as well as material resources and its complicated nature. XBRL specification appears relatively complex, the specification document is over 151 pages (Cotton, 2007) [7]. Perhaps the existence of similar systems and as the approach to its adoption is likely to have significant influence. Whether the Bolt-on way, built-in at reporting application level or deeply embedded in ERP applications and individual ledgers (Garbelleto, 2009) [12], the benefits derivable from these approaches to XBRL implementation are unlikely to be the same. The level of association between change in quality of disclosure and the introduction of XBRL was assessed by Cauter (2011) [5] in a report which concluded that reporting in XBRL format influences the quality of disclosures in a positive way as surveyed firms experienced significant decrease in their cost of equity capital.

Subsequent to the mandatory requirement by the US SEC for commencement of interactive data reporting in 2009, one of XBRL product and service providers, XBRL Cloud identified over 4000 filing errors. Using a sample of 4532 filings that contain 4269 errors, Du et al. (2011) [10] examined the overall changing pattern of the errors to determine whether these errors were capable of hampering the transition. The study documented significant learning curves exhibited by the SEC XBRL filing environment, filers and XBRL software vendors and found that number of errors per filing significantly decreased in cognizance with increase in the number of filings and the use of higher versions of the software. This learning curve effect was also reported in the US SEC Voluntary Filing Programme (VFP) (SEC, 2005) [24]. The findings of the survey revealed that participants who used the Bolt-on approach recorded average initial submission of \$30,933 while the second submission was averaged at \$9,060

In drawing the line between voluntary and mandatory compliance with standards against successful implementation, the probability is that where the perceived benefits outweigh the costs it is predictable that compliance level would be high. This view was supported in a study subsequent to Japanese Financial Services Agency announcement of 5,000 listed firms and 3,000 funds mandatory compliance with XBRL (Kobayashi, 2008) [17].

In the report, Bai et al., (2012) [2] examined various measures in the pre and post-XBRL periods and found that the adoption of XBRL by Japanese firms achieved significant improvements in their financial reporting environment signaled by the reduction of events returns volatility, absolute cumulative abnormal returns, changes in the standard deviation of returns, and abnormal risk spread amongst surveyed firms. Employing these arguments, we can express as follows.

H4: Voluntary rather than Mandatory requirement would drive XBRL adoption in Nigeria.

In a survey with a similar approach to that adopted in this study Baldwin and Trinkle (2011) [3] through a future forecasting Delphi investigation presented the result acknowledging the most likely impacts of XBRL implementation as increased accessibility to financial reports, easier compliance with regulations, enhancement of continuous reporting, and efficiency of business and investment decision making. Another Delphi investigation explaining the voluntary adoption of XBRL by 137 North-American companies out of over 10,000 voluntary filers disclosed that factors such as the need to gain deeper knowledge of the technology, and the desire to acquire a company image as a discoverer of technology played crucial roles in the course of voluntary adoption of the standard (Bonson et al., 2009) [4].

3. Research Methodology

Prior to the collection of data, the survey instrument was prescreened through a pilot test of measures conducted with 15 company executives working in accounting and management information systems capacity for multinational audit firms. In addition, these executives are actively involved with offshore auditing and reporting in jurisdictions where XBRL Taxonomy and its incorporation in software and regulatory practices have been engaged. Subsequently, several other filtered questions were included for certain subjects considered related to emerging economies. The Likert scale was used with metric and dichotomous questions to analyze the variables and also to evaluate peculiar conditions.

Reliability analysis was conducted to test for properties of measurement scale and the items that compose the scale. For construct validity an exploratory factor analysis was also carried-out. The instrument's internal consistency was estimated at 0.835 using Cronbach's Alpha coefficient in the pilot survey. The field work was conducted between March and July 2013. All the items in the final instrument post-pilot survey were evaluated arriving at a Cronbach's Alpha coefficient of 0.674 while the final sampling error was calculated at 8.92% and considered acceptable for an assessment without previously identified parameters.

4. Data Analysis and Results

A survey questionnaire was carried out in Lagos. Respondents were experts engaged in the Big 4 audit firms with offshore offices in Nigeria.

A total of 200 copies of the instrument were distributed across the Audit, Tax Services and Advisory units of each firm. However, only one hundred and thirty four percent (134%) responded to the questionnaire and returned wholly completed. Table 1 presents information on the responses across the various units.

Table 1. Questionnaire distribution and responses

Responding Group	Distribution	Responses	Proportion
Audit	80	54	67.50%
Tax Services	60	38	63.33%
Advisory	60	42	70.00%
Combined Units	200	134	67.00%

Source: Analysis of survey data (2013).

4.1. Test of Research Hypotheses

H1: Introduction of the X-Issuer can discourage adoption of XBRL in Nigeria.

In order to test this hypothesis, two items, statements 1 and 3 are relevant. The result is as presented in Table 2. Both statements used in validating the proposition made on the probability of the X-Issuer discouraging the adoption of XBRL in Nigeria have F-ratios below 5.00 (1.217 & 4.627) respectively with p-values greater than 0.05. This suggests that the introduction of the X-Issuer is not likely to discourage XBRL implementation in Nigeria.

Table 2. Results of ANOVA on X-Issuer discouraging XBRL Adoption in Nigeria

		Sum of Squares	Df	Mean Square	F	Sig.
X-Issuer; good replacement for XBRL	Between Groups	8.206	7	3.082	1.217	1.338
	Within Groups	224.211	108	1.308		
	Total	232.427	115			
The X-Issuer has similar Technical capability as XBRL	Between Groups	7.101	7	421	4.627	1.835
	Within Groups	406.002	111	1.378		
	Total	413.103	118			

*not significant at 0.05; source: Analysis of data (2013).

Table 3. Results of ANOVA on XBRL and the Corporate Governance function in Nigeria

		ANOVA				
		Sum of Squares	Df	Mean Square	F	Sig.
XBRL: transparency and accountability by reporting entities	Between Groups	32.172	5	10.733	2.618	2.677
	Within Groups	206.910	212	1.055		
	Total	239.082	217			
XBRL: support for systems and processes on long-run shareholder value	Between Groups	15.607	6	421	3.927	1.093
	Within Groups	245.702	189	1.378		
	Total	261.309	195			

*not significant at 0.05; source: Analysis of data (2013).

H2: Adoption of XBRL interactive data would improve Corporate Governance in Nigeria.

The second hypothesis expressed respondents' views on whether XBRL can improve the corporate governance function in Nigerian. The hypothesis was tested using statements 2 and 4 and the result presented in Table 3. Both statements have F-ratios of 2.618 and 3.927, p-values were 2.677 and 1.093 indicating that we accept the hypothesis and conclude that XBRL would improve the Corporate Governance function in Nigeria.

H3: Perceived benefits of XBRL can influence firms' willingness to adopt interactive data.

Statements 5 and 7 are related to hypothesis 3. Analysis revealed in Table 4 showed that F-values of 3.654 and 4.255, both higher than 5.00. In addition, the p-values were 2.455 and 1.674 respectively (higher than 0.05). Conclusively this suggests that the perceived benefits of XBRL are highly likely to influence the willingness to adopt XBRL as corporate financial statements filing technique.

H4: Voluntary rather than Mandatory requirement would drive XBRL adoption in Nigeria.

The fourth hypothesis proposed concerned respondents' perception of whether Nigerian companies would be adopting XBRL interactive data without compulsion. The hypothesis was tested using statements 6 and 8 in the questionnaire and the result is revealed in table 5. With F-ratios of 7.577 and 8.521 higher than 5.00 and p-values of 0.038 and 0.009 lesser than 0.05, this suggest mandatory rather than voluntary compliance would drive the success of the technology in Nigeria.

Table 4. Results of ANOVA on XBRL and influence of perceived benefits on adoption

		ANOVA				
		Sum of Squares	Df	Mean Square	F	Sig.
XBRL; improved information exchange between regulators and companies	Between Groups	7.181	4	3.082	3.654	2.455
	Within Groups	161.290	198	1.308		
	Total	168.471	202			
XBRL; reduction in human interference on corporate reports appraisal and analysis	Between Groups	4.701	4	421	4.255	1.674
	Within Groups	320.212	175	1.378		
	Total	324.913	179			

*not significant at 0.05; *source:* Analysis of data (2013).

Table 5. Results of ANOVA on Voluntary versus Mandatory adoption of XBRL by Nigerian companies

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Firms would be willing to implement XBRL without being mandated	Between Groups	8.206	7	3.082	7.577	0.038
	Within Groups	224.211	108	1.308		
	Total	122.981	183			
Quoted companies currently possess the technical and operational capability to implement XBRL	Between Groups	7.101	7	421	8.521	0.009
	Within Groups	406.002	111	1.378		
	Total	671.391	102			

*significant at 0.05; *source:* Analysis of data (2013).

5. Conclusion and Recommendations

The need for standardized corporate financial reporting has been the subject of many research projects in academic and practice literature. As the world increasingly become globalized and extensively digitalized, requirement for the harmonization of accounting standards becomes heightened with the incessant attention to the pace of International Financial Reporting Standards (IFRS) adoption in over 120 countries. Perhaps the debate for electronic Standard Business Reporting (SBR) which began in Netherlands and Australia in 2009 (Madden, 2009) [19], would soon become a major focus in the next phase. With over 900 articles written on XBRL in more than 50 countries in less than 15 years, the emphasis is highly unlikely to be wrong. As Nigeria joined the league of countries adopting IFRS, the future of electronic corporate business reporting in the country becoming harmonized along global standard is imminent.

This study is an empirical attempt to examine the likely implications of XBRL on the future of electronic business reporting in Nigeria. Drawing on the perceptions of professional accountants in the leading multinational audit firms, the paper considers the opinion of these stakeholders based on their international exposure and local relevance. The research attempts to explore subjects' perception on whether the implementation of the X-Issuer by the Nigerian Securities and exchange Commission (SEC) would

discourage the adoption of XBRL in the near future. It also considers whether there is likely to be significant improvement in the corporate governance function if XBRL is deployed by listed entities in Nigeria. In addition, the study examined if the perceived benefits associated with XBRL would influence its implementation. Respondents' views were also sought in determining whether Nigerian companies would be willing to implement XBRL interactive data filing without being mandated.

Consequently, respondents were grouped into audit, taxation services, and advisory units of the institutions surveyed. Out of the 200 copies of survey instruments administered, a total of 134 were returned duly completed and confirmed adequate and sufficient for analytical purpose. This represents an overall response rate of 67 percent for the combined units in all the firms. The result of the survey clearly showed, that the introduction of X-Issuer by Nigerian regulatory authority is highly unlikely to discourage the deployment of XBRL in the near future. Respondents were also of the opinion that XBRL is a technology that is capable of improving the corporate governance function in Nigerian companies. Their responses also clearly revealed that the perceived benefits identifiable to XBRL would encourage its adoption. However, the findings hypothesized that listed companies in Nigeria are not likely to adopt XBRL voluntarily. Respondents were of the opinion that Nigerian companies currently lack the technical and operational

capability to deploy the technology. Hence the need for technical experts supports to ensure its success.

5.1. Recommendations

In the light of the above findings, the authors hereby make the following recommendations. Regulatory authorities should set up machineries to assess and come up with recommendations to evaluate the possibility of deploying XBRL especially by listed entities. We expect that these mechanisms be deployed in constant communication with XBRL experts, who must continually examine the technical, operational and environmental implications of the technology in line with specific physiognomies of the Nigerian business reporting environment. An assessment of costs and benefits, as well as drivers and barriers to XBRL adoption are also imperative.

Company executives must also endeavor to put in place adequate measures to voluntarily engage in compliance with international requirements onelectronic Standard Business Reporting(SBR) function rather than awaiting mandatory pronouncements.

Those having primary responsibilities for corporate governance are also recommended to be more proactive than ever before in order to accomplish their aspirations for transparent accountability and reporting. To this end we recommend the establishment of committees to look into the mechanics of deploying XBRL Taxonomy by Nigerian companies.

5.2. Suggestions for further study

In the light of the foregoing and in cognizance of the geographical limitations of this study, another research with wider scope is hereby suggested. It is also recommended that future research on XBRL with particular reference to Nigeria be conducted on listed companies who are potential users of the technology. It may also be interesting to find out the implications of XBRL implementation on auditing, taxation, and management accounting practices in Nigeria. Research exploring the views of regulatory authorities on XBRL interactive data would also be of significant contribution to knowledge. Perhaps a study matching the views of regulatory authorities with respect to other practicing accountants might also be remarkable.

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