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RETHINKING THE PRACTICE AND VALUE ADDED OF EXTERNAL AUDITS: THE AICPA'S AUDIT DATA STANDARDS (ADS) INITIATIVE

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Access to Data Prerequisite for Analysis, Use

- Elliot (1998) emphasized that **access to data** is the prerequisite for initiating the value chain.
- *“At the left end of this chain, we've got business events and transactions taking place, but we don't know anything about them yet, so the first thing we do is record them. **Now we have data about them, and we can begin to take a look at what happened.** We take the data, refine and combine it with other information, and we have more than data—we have information, information from the outside and so forth. That turns into knowledge, and we use that knowledge in order to make wise decisions.”*

Automation of Data Acquisition

- Elliott's point was that accountants need to focus on the higher value added decision-making end of the value chain and less on data collection and aggregation.
- That shift in emphasis is justified under the assumption that the acquisition of the data that initiates the value chain is becoming increasingly automated, as opposed to the era when accounting was synonymous with manual "bookkeeping".
- Data acquisition is being automated through EDI, bar code scanning, RFID tags and so forth to capture data into Enterprise Resource Planning (ERP) systems.

Auditors are Falling Behind in Accessing Data

- **One subset of users that continues to face many difficulties in obtaining digital data from businesses are internal, and most especially, external auditors.**
- Even as their clients' business operations have become almost entirely digitized, auditors have to rely to a very large extent on the business's IT department to extract and communicate accounting information to them.
- Auditors are hesitant to request additional information from the client knowing the reluctance IT departments to cooperate with these extra extractions.

Technical Limitations Another Challenge

“Even though internal auditors have more access to data than they were in the past, with cooperation from business data owner and IT department, limitation still exists. One of the interviewed companies’ management explained that they have 25 SAP-based systems installed across the organization. Each instance is managed by a different SAP team, and data extraction is done on a monthly basis using in-house software built on top of the SAP system. Data calculation then computes via the ABAP protocol, and reports are generated. The system can keep aggregate data for at least 13 months and detail data for 3 months. The company has an enterprise data warehouse, containing financial information, but usage is limited due to reconciliation issues.”

Vasarhelyi, Alles, Kuenkaikaew and Littley (2012)

AICPA Response: The Audit Data Standard

- Assurance Services Executive Committee (ASEC) Emerging Assurance Technologies Task Force of the AICPA has proposed an Audit Data Standard (ADS) for use by auditors which will result in a standardized set of essential data to be extracted from any audit client.
- *Thus far, **no IT standards have been developed specifically with the financial audit in mind.** As a result, one of the challenges that management and internal and external auditors face is the acquisition of a company's data in an efficient manner... In many cases, the burden is on the auditors to "acquire" the data. [The] audit data standards would contribute to the efficiency and effectiveness of the audit process."*

What is the Audit Data Standard (ADS)?

- *The objectives of Data Standardization/Data Analysis is to establish a **standardized data model** (initially focused on the general ledger, but evolving beyond that) that management, as well as internal and external auditors could utilize for enhanced analytics that would contribute to the timeliness and effectiveness of the audit process. The three main elements of Data Standardization/Data Access are: Audit Data Standards, Data Access and Audit Applications (APPs).*

Role for XBRL-GL

- *The task force has developed initially a voluntary, uniform audit data standard that provides a common framework covering (1) data (e.g., files, fields, and technical specifications), (2) meta-data (i.e., business rules to aid in the understanding of the data) and (3) validation routines to assess the completeness and integrity of the data. The standard provides key information needed for audits, and is offered in either of the following two formats: (1) **XBRL GL**, or (2) flat file format (tab-delimited UTF-8 text file format). Initially, included in the document is a General Ledger standard as well as an Order to Cash – Accounts Receivable subledger standard."*

Objective of Developing ADS

- The vision of the ASEC committee is that ADS consists of a **standard corpus of data that all audited businesses have to provide to their auditors in a standard format** that will eliminate the need for the engagement team to obtain, and more importantly deal with, the data on a case by case basis.
- The object is not just to speed up the audit process by eliminating the lag between the request for data by the auditor and the provision of it by the client's IT department, but also to **ensure consistency in the data available to and analyzed by engagement teams across all audit clients.**

Political Factors Guided ADS Development

- “Standard” in the audit data standard needs to refer to such cross-sectional consistency since adoption of the ADS by businesses is currently envisaged as **voluntary**.
- The choice of the flat file format option was dictated by the desire to reduce the size of files that businesses would have to provide with ADS data.
- At a later stage the committee decided to also put forward XBRL-GL as an alternate format for data transmission.
- ADS issued exposure draft in July 2012 and currently evaluating responses.

Components of ADS

- The AICPA (2012) exposure draft for the ADS specifies the scope of the data that has to be provided to the auditor by the business for all its reporting units:

Organization of Audit Data Standards

Section	Applicability	
	General Ledger Data	Accounts Receivable Data
1. Base Standards		
1.1 Formats for Files and Fields	X	X
1.2 User_Listing	X	X
1.3 Business_Unit_Listing	X	X
2. General Ledger Standards		
2.1 GL_Detail	X	
2.2 Trial_Balance	X	
2.3 Chart_Of_Accounts	X	
2.4 Source_Listing	X	
2.5 GL Data Profiling Report	X	
2.6 GL Questionnaire	X	
3. Accounts Receivable Standards		
3.1 Open_Invoices_YYYYMMDD		X
3.2 AR_Activity_YYYYMMDD_YYYYMMDD		X
3.3 New Invoices_YYYYMMDD_YYYYMMDD		X
3.4 Customer_Master_YYYYMMDD		X
3.5 Invoice_Type		X
3.6 Payment_Type		X
37 AR Data Profiling Report		X
3.8 AR Questionnaire		X

Examples of ADS in XBRL-GL Format

2.1 GL_Detail

The GL_Detail table stores all the journal entry lines and includes all the journal entry header information, as well. Each row in this table contains detailed information for transactions on each journal entry, such as the associated journal entry ID, the associated account number, and the debits or credits associated with the journal entry line. The file should be at the journal entry line level (not a more summarized level) and should exclude data that is not part of the financial statement (for example, statistical and budget items).

Field #	Field Name	Level	Flat File Data		XBRL GL Taxonomy Element	Description
			Data Type	Length		
1	Journal_ID	1	TEXT	100	gl-cor:entryNumber	Identifier that is unique for each journal entry.
2	Journal_ID_Line_Number	1	TEXT	100	gl-cor:lineNumber	Identifier that is unique for each line within a journal entry.
3	JE_Header_Description	1	TEXT	256	gl-cor:entryComment	Description of the entire journal entry as described by the journal entry header.
4	JE_Line_Description	1	TEXT	256	gl-cor:detailComment	Description of the individual line within the journal entry.
5	Source	1	TEXT	25	gl-cor:SourceJournalID (fixed or enumerated list) or gl-cor:sourceJournalDescription (free form)	Posting source (code for source from which the journal entry originated, such as sales journal, cash receipts journal, general journal, payroll journal, accountant manual entry, spreadsheet, and so on).
6	Business_Unit	1	TEXT	25	gl-bus:organizationIdentifier	Used to identify the business unit, region, branch, and so on at the level that financial statements are being audited for which the trial balance is generated. For example, you may use a description aligned with the concept of a reportable segment as defined in ASC 280.
7	Fiscal_Year	1	TEXT	4	gl-bus:fiscalYearEnd - cyyy-mm-dd	Fiscal year—YYYY.

Questionnaires Obtain Background Information

GL

2. Is there an implicit structure for creating a unique Journal_ID field (for example, is it a concatenation of two or more other fields)?
3. When are journal entries recognized in the financial statements (for example, when entered, when approved, and so on)?
4. Does the unique account number sequence capture classifications such as business units, subaccounts, and so on (account flexfield)?
5. How are related-party transactions identified (for example, transactions with wholly or partially owned subsidiaries)?
6. Do separate GL systems (for example, instances within ERP or multiple GL or ERP installations) need to be considered when analyzing the data? How are various ledgers in the data differentiated?
7. Which GL system(s) is (are) this data extraction from? Provide documentation for the data extraction (for example, identify ERP program used or provide SQL code for custom query).

Detailed Specification Only for AR at Present

3.1 Accounts Receivable Standards

The accounts receivable (AR) standard data format is intended to accommodate basic testing of the AR balance. This may include analysis of the levels of activity during a specified period, how much of the AR balance is liquidated with cash versus write-offs, exceptionally old receivables, and so on.

Field #	Field Name	Level	Flat File Data		XBRL GL Taxonomy Element	Description
			Data Type	Length		
1	Transaction_ID	1	TEXT	100	gl-cor:documentNumber with gl-cor:documentType = {invoice}, {debit-memo}, {credit-memo}, {finance-charge}, or {other}, as appropriate.	Identifier that is unique for each transaction.
2	Transaction_Type	1	TEXT	100	gl-cor:documentType Description if additional information is needed over the enumerated gl-cor:documentType	Indicates whether this entry is an invoice, a credit memo, a debit memo, an interest-only invoice, and so on. This may be a coded value for which a Transaction_Type listing is provided.
3	Transaction_Date	1	DATE		gl-cor:documentDate	The date of the transaction, regardless of the date the transaction is entered. For invoices, this is the date from which the due date is calculated based on the invoice terms. ISO 8601 format (YYYYMMDD).

Stated Benefits of the ADS

- Having a standard data set for each and every audit engagement to be automatically provided to the audit engagement team will facilitate efficiency in the audit and enhance comparability across audit engagements.
- It will reduce the need for audit teams to develop idiosyncratic knowledge about the IT systems of each client, make it easier to validate the data received.
- Most important of all, it will facilitate the creation of not just standard data but also standard audit applications that can exploit that data.

Literature Review

- Only coverage in the literature is Zhang, Pawlicki, McQuilken and Titera (2012) published before the AICPA issued its exposure draft. Focused more on technical aspects of of ADS rather than its content or implications.
- The authors conclude: *“Although the adoption and progressive formalization around these standards are not a technical but a **socio-technical problem**, more research is desirable.”*
- It is this call for a broader examination of the “socio-technical” aspects of ADS that we take up in this paper.

Lessons From XBRL

- Position of ADS today is that of XBRL a decade ago.
- At that time there were many design issues in the creation of an XML derivative for the distribution of financial information. There were questions about at what level of aggregation to tag (transaction, sub-account, financial statement account), what information to tag (generating the concept of taxonomies), what meta-information to include, and others.
- As with XBRL then, the AICPA has chosen a top-down expert driven imitative to create the ADS taxonomy, rather than a bottom up, empirical approach.

Normative Approach Can Lead to Coverage Gaps

- XBRL taxonomy had to increase from 2000 to over 15000 tags as gaps in coverage appeared in practice.
- Top-down approach may fail to capture knowledge contained in audit firm practice guidelines for what data needs to be examined and in what context.
- On the other hand, far more issues of proprietary information in the case of the audit industry with only four major firms.
- Acceptance of the standards by the wider auditing—and critically, by audit clients who have to actually implement ADS on behalf of the auditors—may require a more systematic exploration of data needs.

Lessons From XBRL and Governance

- Alles and Piechocki (2010): *“XBRL has to be more than a distribution mechanism for data. What must be taken advantage of is its capability to enable data to be reformatted and rendered by the user in a way that can lead to **new insights and decision relevant knowledge.**”*
- Simply speeding up the flow of data between preparer and consumer, while certainly beneficial, is secondary in effect if all that happens is that the **same decisions been made before are now made faster.**
- ADS may also lead to faster and cheaper audits without fundamentally changing the scope of audit.

Behavioral Impact on ADS Users

- Perhaps because the intended audience for ADS is more restricted and sophisticated on both the preparer (audit client IT departments) and user (auditors) sides, less attention has been paid by the AICPA committee to the mechanics of data preparation than was the case with XBRL. Little emphasis on presentation and usage.
- Only time will tell whether omitting a behavioral perspective is justified in the case of ADS, but it should be noted that the XBRL community also initially assumed that a purely technical approach would suffice in their case. Now we have Inline-XBRL.

Differing Perspectives Between ADS and XBRL

- The ASEC committee sees ADS as a technical solution to a technical problem and not as a means towards a more fundamental rethinking of the way in which auditing is practiced, unlike the case of XBRL which was always seen as being much more than a communication tool.
- The danger is that underplaying the significance of ADS will result in it failing to trigger interest by media and business in general outside the closed circle of the audit profession—a problem for a technology that has to be **implemented by audit clients** and not by auditors.

ADS Assurance

- Another takeaway from the evolution of XBRL that ADS should examine is the debate over whether XBRL filings need to be audited, and if so, to what extent and how.
- The AICPA makes no mention of assurance with regard to ADS and would no doubt argue that there is no auditing of data extractions made by IT departments on behalf of auditors today.
- But there is a fundamental difference between IT departments providing data on an as-needed basis on request by auditors and auditors having data streamed to them with no direct involvement with the client at all.

Taking ADS Data For Granted

- Once ADS is fully established, most auditors would focus more on analyzing that data than in questioning whether the system that provides it to them was properly set some time ago—and eventually, it will be a matter of many years earlier with different audit teams, or even audit firms in charge.
- If the auditor has to continually interact with the IT department to obtain data more likely to be aware of the peculiarities of the data sets of the client and to participate in deciding which particular data is obtained.
- Consider how often researchers question CRSP data versus that hand collected by their RA.

Critical Contrast with XBRL

- Situation with ADS is analogous to that of XBRL filings where the integrity of the disclosures depends critically on the selection by the firm of the correct tags for the data.
- However, with XBRL, **the filer is legally responsible** for the tagging of the XBRL filings and with the imminent expiry of legal safe harbors they have every incentive to do that task carefully.
- By contrast, in the case of ADS the audit client is implementing the ADS extractions on behalf of the auditor and it is quite unclear what liability, if any, they would face if they implement ADS incorrectly.

ADS and Continuous Auditing

- CA is not feasible if auditors are not able to obtain data on relevant events within a short period of time in order to enable them to analyze and to report on it almost simultaneously.
- ADS is a driver of continuous auditing, if not a prerequisite for it. But the exposure draft makes no mention of the timing of the transmission of data to the auditor, only of the content and format of that data whenever it is communicated.
- Even if real time data becomes easier to obtain thanks to ADS, it is not clear that auditors have either the institutional incentive to make use of that more frequent data, or the tools to analyze it.

The Promise of Audit Apps

- Audit applications (“Apps”) a major promised outcome of ADS: software tools that will be developed to specifically exploit ADS data: *“Once standardized audit data are available, there are an endless number of applications that can be developed to analyze the data... Initially, many of these applications would be proprietary as software vendors may seize this business opportunity and lead the application development. On the other hand, some of the best ideas for new applications may be Wiki-like and non-proprietary. Plans are underway to develop an online audit application library portal to help users find the right applications.”* Zhang et al (2012)

Will Promise of Audit Apps be Fulfilled?

- Wiki-like development of analytics for XBRL.
- But XBRL data is public by definition, while ADS data is inherently confidential. Barely more than a handful of businesses currently that would be attracted to create ADS apps, as opposed to the numerous analysts, banks, information intermediaries and other consumers of data that are involved with XBRL. Will there be a critical mass of such ADS developers?
- What incentive to make such apps public? If developed by software engineers at vendors (ACL, Caseware) or audit firms, competitive pressure to keep them proprietary.

ADS as a Disruptive Innovation in Auditing

- There are three distinct underpinnings for the privileged competitive position enjoyed by external auditors:
 1. They offer an independent appraisal of the business's financial statement
 2. They have privileged access to the business's internal records and finally.
 3. They have a comparative advantage in analyzing that data and seeing whether it is in accord with accounting standards.
- ADS has the potential to be a disruptive innovation in last two of these foundations of auditor uniqueness.

Democratizing Access to Audit Data

- ADS pulls aside the veil that has long existed about the kinds of data that auditors use in their jobs.
- Given that ADS is entirely digital and is entirely owned and controlled by the audit client means that this data can just as easily be made available to any third party as it is to an auditor, unlike with paper based audit evidence.
- Hard for auditors to argue that ADS data does not provide the majority of the content matter for an audit, for to do otherwise is to undermine the rationale for ADS in the first place.

Opens Space for Competitors to Auditors

- Easily re-deployable audit evidence puts firmly into contention the argument that auditors have not just a comparative advantage in analyzing that data, but are uniquely qualified to do so.
- What now stops any third party from offering to review that same data made available to the auditor and offering their own assessment of it?
- Third parties already offer compliance in such areas as ISO 9000, six sigma quality management, labor relations, product quality and the like. Now these parties can have access to data that before only auditors, with their legally privileged position inside the business, have enjoyed.

Comparative Advantage in Analyzing ADS Data

- That only leaves then the comparative advantage of auditors in analyzing that data.
- Differentiate between the intent of the analysis to ensure compliance with accounting reporting standards, such as GAAP or IFRS, and the more general analysis to ensure compliance with controls, assess going concern, detect fraud or determine risk management.
- The first is clearly a specialization of auditors while many other consultants are also experts in analyzing and advising firms in these other non-reporting areas.

Potential Role of Third Parties

- If third parties (hired by the client firm) had access to ADS data then there would be a direct competition with the opinions offered by the auditors in such areas as going concern, or compliance with Section 404 of the Sarbanes-Oxley act.
- Moreover, unlike auditors, these third parties would not be constrained to offer only a dichotomous qualified/non-qualified opinion, or to limit themselves to an annual time frame.
- Potential for such firms to also be hired by lenders, insurers, governments and so forth.

Will ADS Become a Disruptive Innovation?

- Disruptive innovation would only arise if non-audit third parties entered the market for the analysis of ADS data and businesses were willing to share that data with them. Whether that would happen is an empirical question that market forces will determine.
- ADS lowers one of the barriers to entry that has protected auditors from competition and all prior evidence of free markets shows that barriers to entry are there precisely in order to protect the incumbent.
- An example of the unintended consequences of technological innovation and the need to think broadly about such changes.

ADS as Floor or Ceiling?

- AICPA fails to address whether ADS will become a floor or a ceiling on the data used by auditors, or provided to auditors by their clients. Presumably they intend the former, but having gone to the trouble and expense of implementing the ADS system, businesses may express reluctance to provide data beyond that specified, and auditors fearing such concerns by the client may be reluctant to press them for more data.
- Since the main cost of incorporating ADS into a business's ERP system is likely to be upfront, allowing for more rather than less data at the implementation stage will likely benefit all parties over time.

Concluding Comments

- The goal of this Audit Data Standards (ADS) is to encourage business to consider the value added from facilitating easy access of the data for external as well internal auditors. Auditors, when provided with a standardized data, will be able to apply their analytical skills across clients getting comprehension standardized data and mostly avoiding the need to deal with the idiosyncratic datasets.
- Although just enabling timelier acquisition of data makes ADS worthwhile, it is important to extrapolate this possibly disruptive technology to accelerate auditing transformation from traditional periodic to more frequent near real-time (continuous) auditing.