



American Accounting Association

Comments on SEC Proposed Rule – 33-8496

XBRL VOLUNTARY FINANCIAL REPORTING PROGRAM ON THE EDGAR SYSTEM

By the Information Systems and Artificial Intelligence/Emerging Technologies Sections of the American Accounting Association.

About the American Accounting Association

The **American Accounting Association** (AAA or Association www.aaahq.org) promotes worldwide excellence in accounting education, research, and practice. Founded in 1916 as the American Association of University Instructors in Accounting, its present name was adopted in 1936. The AAA is a voluntary organization of persons interested in accounting education and research. The mission of AAA is to foster worldwide excellence in the creation, dissemination, and application of accounting knowledge and skills. The Association is organized into 15 sections and six regions.

The Information Systems (IS) section of the AAA has more than 850 members. The section seeks to foster an understanding and acceptance of information systems as an important branch of accounting and to provide a forum where educators and practitioners with IS interests can meet and interact with each other.

The Artificial Intelligence/Emerging Technologies (AI/ET) section of the AAA strives to encourage application of the techniques of these two areas to accounting research, teaching, and practice. Artificial intelligence includes the sub-fields of knowledge-based systems, neural networks, and heuristic problem solving; emerging technologies include (among others) the Internet, the World Wide Web, electronic commerce, workgroup and workflow technology, and interactive multimedia. The AI/ET section has over 250 members.

Given the importance of XBRL to the teaching and research interests of the two AAA sections, the IS and AI/ET sections have joined to prepare the enclosed submission. Membership of the working party is as follows:

- Dr. Roger Debreceeny, University of Hawaii, HI (Convenor)
Email: rogersd (at) hawaii.edu
Phone: (808) 956 8545
- Dr. Samir Trabelsi, Brock University, Canada
- Dr. Gerald Trites, St Francis Xavier University, Canada
- Andy Lymer, The University of Birmingham, UK
- Dr. Denise Guithues-Amrhein, Saint Louis University, MO
- Dr. Maureen Mascha, Marquette University, WI
- Dr. Akhilesh Chandra, The University of Akron, OH
- Dr. John J. Cheh, The University of Akron, OH
- Neal J. Hannon, University of Hartford, CT
- Dr. Paul D. Hutchison, University of North Texas, TX
- Dr. Diane Janvrin, Iowa State University, IA
- Dr. Roberta Ann Jones, Pittsburg State University, KS
- Dr. Barbara Lamberton, University of Hartford, CT
- Dr. Robert Nehmer, Quinnipiac University, CT.
- Dr. Saeed Roohani, Bryant University, RI
- Dr. Rajendra P Srivastava, University of Kansas, KS
- Dr. Thomas Tribunella, Rochester Institute of Technology, NY
- Dr. Miklos A. Vasarhelyi, Rutgers University, NJ

Disclaimer: The views expressed in this document are those only of the members of the Working Party.

V. SPECIFIC REQUEST FOR COMMENTS

1. (a) Is the proposed rule permitting volunteer filers to furnish financial information in XBRL appropriate?

We strongly support the initiative by the Securities and Exchange Commission to allow volunteer filers to furnish financial information in the XBRL format. The Internet¹, with its attributes of low cost, immediacy, global reach and alternative forms of information presentation, is clearly important for purposes of transparency, stewardship and the smooth functioning of capital markets.² The eXtensible Business Reporting Language (XBRL) adds a vital attribute to these general characteristics: explicit semantic and machine-readable representation of the wide variety of information elements found in business reporting in general and in financial statements in particular.³ A host of information consumers, including investors, analysts, researchers and value-added information intermediaries will be able to leverage XBRL reports to the Commission.

We would also like to point out that while for an experimental period voluntary disclosure of financial statement information is adequate, XBRL is vital in the democratization of markets. At an early stage, the Commission should consider adopting XBRL for Form 8-K filings. Eventually the SEC should move to require XBRL filings for financial statements for all or major classes of filers. The Commission should also investigate employing extended XBRL taxonomies that incorporate financial and non-financial performance information. Later in this submission, we note with approbation the work of the AICPA's Jenkins Committee in the 1990s (Special Committee on Improving Business Reporting) and the current work of the Starr committee of the AICPA that is recommending the progressive incorporation of a much wider set of performance measurements in an Enhanced Business Reporting Model.

¹ Trites, G. (1999). *The impact of technology on financial and business reporting*. Toronto: Canadian Institute of Chartered Accountants.

IASC. (1999). *Business reporting on the internet*. London: International Accounting Standards Committee.
FASB. (2000). *Business reporting research project: Electronic distribution of business information*. Norwalk, CT: Financial Accounting Standards Board.

² Hunton, J. E., Wright, A. M., and Wright, S. (2003). The supply and demand for continuous reporting. In S. J. Roohani (Ed.), *Trust and data assurances in capital markets: The role of technology solutions* (pp. 7-16). Smithfield, RI: Bryant College.

³ Debreceeny, R., and Gray, G. (2001). The production and use of semantically rich accounting reports on the Internet: XML and XBRL. *International Journal of Accounting Information Systems*, 2(1), 47-74.

Benefits of XBRL: Benefits of XBRL arising to regulators such as the SEC, are effectively summarized in a recent commentary by Professor Ron Weber, who notes in part “In many countries, regulators concerned with business reporting have already shown a keen interest in XBRL. Many are participating in the development of XBRL and the dissemination of knowledge about XBRL. For regulators, XBRL offers at least two major benefits. First, it reduces the costs associated with their obtaining and assimilating information from businesses. Regulators are not forced to reenter information or expend resources on dealing with the problems that arise as a result of incompatibilities between their own information technology platforms and those of the businesses that fall within their jurisdiction. Second, the existence of XBRL allows them to argue more strongly for the standardization and harmonization of international business reporting standards. Use of XBRL mitigates some of the costs that businesses would otherwise incur in complying with such standards. Thus, any arguments made by businesses against proposed standards on the basis of the costs of compliance are undermined”.⁴ We support Professor Weber’s conclusions that lend support to the proposed rule by the Commission.

Academic research shows the benefits that come from XBRL. A recent paper from our colleagues, Professors Hodge, Kennedy and Maines, reports the result of an experiment on the application of XBRL.⁵ The researchers conducted a laboratory experiment that manipulated two variables that are important in the financial reporting environment, that is: (i) provision of searchable technologies such as XBRL compared with no provision of search and (ii) recognition of the outcome of accounting choices (in this case, stock option compensation) in the body of the financial statements compared with disclosure in the footnotes. The study concludes, “that recognition versus disclosure of stock option compensation does affect users’ judgments and using a searchable technology [XBRL] mitigates this effect. This finding is consistent across [experimental] participants’ assessments of financial performance as well as their investment decisions.” This study demonstrates that XBRL is a useful technology that enhances the cognitive abilities of end-users in interpreting financial statements and improves the judgment

⁴ Weber, R. A. (2003). XML, XBRL, and the future of business and business reporting. In S. J. Roohani (Ed.), *Trust and data assurances in capital markets: The role of technology solutions* (pp. 3-6). Smithfield, RI: Bryant College

⁵ Hodge, F. D., Kennedy, J. J., and Maines, L. A. (2004). Does search-facilitating technology improve the transparency of financial reporting? *Accounting Review*, 78(2).

that they exercise when analyzing those statements. We also draw your attention to our longer discussion on the cost and benefits of XBRL adoption in Section XVIII on Page 25.

Issues with coding printed financial statements: As researchers, we are aware of the many problems that come from the high cost of interpreting financial statements that exist only in printed form. Much academic research relies on financial reporting databases (e.g. Compustat). The developers of these databases code data from corporation's financial statements into their databases. In so doing, they use normalized data as interpreted by their coders. While this has some advantages for certain types of research, the coding process is a substantial simplification and is fraught with errors of interpretation and currency, as observed in a number of academic studies that compare the output from different databases.⁶ In contrast, XBRL tagged data can serve to present data "as reported" and promote substantial motivation for companies to prepare comparable statements.

Information Systems Adoption: Research on information systems innovation adoption shows the importance of a catalyst that brings together the disparate parties in the information supply chain. The SEC will play an important role as just such a catalyst. Conducting what is essentially, a field experiment by the Securities and Exchange Commission will enable the accounting and filer communities together with the academic and research community to learn from the widespread application of XBRL to the presentation of complete financial statements. The proposed rule ensures that a smaller group of volunteers will enable that opportunity as experimentation takes place in a relatively controlled manner.

We also consider the implementation of this proposed voluntary process places the United States in a leadership role, as far as XBRL is concerned. This is important at a time when many of the major adoptions of this technology have been in countries in Asia-Pacific and Europe.

Implications of voluntary filing program for research and teaching: The academic community will take the output of those voluntary XBRL filings and conduct a number of studies. We confidently expect that academics will research topics including the capital market

⁶ See, for example, Kern, B. B., and Morris, M. H. (1994). Differences in the compustat and expanded value line databases and the potential impact on empirical research. *Accounting Review*, 69(1), 274-284. See also Vasarhelyi, M., Yang, D., and Liu, C. (2003). A note on the using of accounting databases. *Industrial Management and Data Systems*, 103(3), 204-210

implications of the filings by the voluntary filers; the presentation choices made by the volunteer filers; the link between financial statements and the taxonomies; the quality of the taxonomies; the ability of taxonomies to meet the needs of the filers, the choices made on variations out of established taxonomies, and a wide variety of other research questions. We expect that the first output of the studies would be available at conferences in late 2005 and into 2006. The academic community will communicate the results of this research to the accounting organizations, filer communities, and the Commission.

The proposed voluntary filing will also be valuable for the work of academics in their teaching role. Our colleagues at Bryant University and at the University of Kansas have each hosted a number of seminars and conferences on the research and teaching implications of XBRL. We expect that faculty and students will analyze the voluntary filings made to the Commission in the Fall semester.

1. (b) Is there a better way to accomplish testing and analysis of XBRL data?

While coding a complete set of financial statements, including footnotes, and Management's Discussion and Analysis represents the ultimate goal for the adoption of XBRL in respect of the traditional annual financial reporting cycle, there are many other types of disclosures that lend themselves to the application of XBRL. In particular, we note that the recent extension of the requirements for corporations to file Form 8-K, is an ideal application for XBRL. This progression towards continuous reporting information is time sensitive and contains both monetary and non-monetary disclosures. Many of those disclosures fall into well-known categories that could readily be coded into an XBRL taxonomy. Indeed, we believe that the market would find automated handling of fully coded legitimate 8-Ks to be of more immediate value than fully coded financial statements. These latter classes of disclosures are substantially ex-post facto resulting more of a tombstone disclosure than providing active tools for investors.

We also urge the Commission to consider how the important disclosures that are made in the Management Discussion and Analysis and other types of reporting should be accommodated within an XBRL taxonomy. Bryan (1997)⁷ shows that certain MD&A disclosures, for instance the discussion of future operations and planned capital expenditures, are associated with future

⁷ Bryan, S. H. 1997. Incremental Information Content of Required Disclosures Contained in Management Discussion and Analysis. *The Accounting Review*. Vol 72 (2) : 285-301.

performance measures and investments decision, after controlling for the information contained in financial-statement-based-ratios. We are not suggesting that the current proposal for voluntary filings in XBRL incorporate this class of information. We do suggest that the next class of XBRL-based disclosure that the Commission addresses should be these more fluid forms of disclosure. We note the various classes of disclosure addressed in the AICPA's 1994 "Jenkins Report"⁸, and in the more recent moves in the Starr Committee towards Enhanced Business Reporting: (see <http://www.aicpa.org/innovation/scebr.htm> and <http://www.ebrconsortium.org/>).

Disclosures of the type envisaged by Jenkins and Starr are, we believe, highly relevant for valuation and stewardship purposes. Given that these performance metrics vary by firm and industry, they lend themselves to reporting in XBRL.

2. (a) For purposes of the program, volunteers can furnish in XBRL format, among other types of financial information, a complete set of financial statements. Are there special issues or difficulties raised by providing notes to financial statements in XBRL format?

Please see our response to the next bullet point (2(b)).

2. (b) If so, should we permit volunteers to furnish financial statements in XBRL format if they omit the related notes? Should we allow volunteers to furnish in XBRL format some but not all financial statements (e.g., only a balance sheet)?

In this early stage of adoption of XBRL, we strongly recommend that filers be able to submit information at a variety of different levels of complexity. Given the much less developed state of taxonomies for financial reporting in respect of the footnotes and that the complexity of preparing footnotes is considerably greater than the body of the financial statements, some filers may wish to submit only the body of their financial statements. We believe that the Commission should encourage wide participation in this voluntary program. Whilst footnotes are of considerable value to our markets, investors, students, shareholders, and other observers of corporations, the financial statements are of greater information value. To require footnotes as tagged disclosures may rule out many filers from this voluntary program. This would be an unfortunate outcome of such a requirement.

⁸ AICPA. (1994). *Report of the Special Committee on Financial Reporting: Improving Business Reporting - A customer focus: Meeting the information needs of investors and creditors*. New York, NY: American Institute of Certified Public Accountants.

However it would be desirable that filers at least create tags for the entire footnote for classification purpose (e.g. accounting policy, compensation, etc) and for the most common ones (e.g. pensions) tag key fields that are mandated (e.g. interest assumptions and unfunded pension liabilities).

Footnotes can be tagged at a variety of levels of detail. We would encourage the voluntary program to allow corporations to tag their notes even at the level of one tag per footnote as discussed above. Again, this would allow automated information retrieval and discovery software to identify the types of footnotes within the filing. While not a complete answer to the analytical of analysts, investors, researchers and students, it would be a considerable improvement over the raw text supplied as part of a Form-10k from EDGAR.

In the future, detailed tagging of footnotes will be an important part of the adoption of XBRL by the Commission. We believe that the information contained in footnotes has high information relevance for investors. The highest quality of disaggregated tagging of the notes is desirable for smooth functioning of the capital markets. Capital market researchers often have to spend considerable time in hand-coding important information that is contained within the notes. Having this data available in an automated form will assist not only academic research, but also the work of analysts. Furthermore, in the future, detailed tagging of relevant non-financial information such as intellectual property, human resources, marketing, etc will be highly valuable (see our comment on Question 1(b)). Taking this in account will relate XBRL coded disclosures to the user-oriented frameworks proposed by Penman (2003)⁹ and Schipper and Vincent (2003)¹⁰ and by the SEC in its goal-oriented principles.

2. (c) Should we also allow tagging for other items, such as Management's Disclosure and Analysis or Management's Discussion of Fund Performance that are part of existing taxonomies?

We strongly support the tagging of items such as Management's Disclosure and Analysis or Management's Discussion of Fund Performance. Academic research has consistently shown the value relevance of such disclosures, as we noted in the previous comment. As we noted taxonomy development in respect of such items is still relatively undeveloped. Nonetheless, we

⁹ Penman, S. H. 2003. The quality of financial statements: Perspectives from the recent stock market bubble. *Accounting Horizons* 17 (Supplement): 77-96.

¹⁰ Schipper, K., and L. Vincent. 2003. Earnings quality. *Accounting Horizons* 17 (Supplement): 97-110.

believe that filers should be encouraged to tag these elements of their reports. This would be desirable if only to allow automated information retrieval and discovery software to categorize efficiently all parts of the financial statements and ancillary reports. We also are strongly in support of a progressive route of taxonomization and coding of the non-financial data in annual reports.

3. (a) Are the standard taxonomies in the voluntary program sufficiently developed? If not, explain what further development would be necessary. Please address taxonomies with respect to specific industries or types of companies if you have information or views on these.

Several members of this working party have been actively involved in the development of US GAAP and IFRS taxonomies. We believe that (i) the processes employed in taxonomy building; (ii) quality of the imports into the taxonomy building process and (iii) the formal quality assessment processes of XBRL-US adopted have resulted in relatively high quality taxonomies. The SEC initiative provides an opportunity to determine how well taxonomy building has advanced. We suggest that there be an open communication channel between the taxonomy builder community and volunteer filers during the volunteer program. This will enable modifications to the taxonomies when these are preferable to forcing each volunteer to create extensions.

The academic community has researched taxonomy building as well as automation in taxonomy building.¹¹ Much more research will be necessary over the next few years to build a better understanding of the relationship between accounting standard-setting, and the nature of financial reporting, the design of the information systems scheme, and end-user functionality.

The details required in footnote disclosure make taxonomy building in this part of the financial statements very difficult. We are much less confident about the quality of taxonomies in respect of footnote disclosures, than we are with data on the body of the financial statements. On the other hand when building instance documents the author must specify accounts that are NOT in a standard taxonomy (extension taxonomies). Consequently, this will both serve to

¹¹ Matthew Bovee, Alexander Kogan, Rajendra P. Srivastava, Miklos A. Vasarhelyi and Kay Nelson (2004) Financial Reporting and Auditing Agent with Net Knowledge (FRAANK) and eXtensible Business Reporting Language (XBRL), , *Journal of Information Systems*, forthcoming.

motivate filer to standardize their reporting as well as to help the XBRL community to create better taxonomies.

3. (b) Is the taxonomy builder software sufficiently developed that volunteers would be able to create extensions as needed?

Many preparers of instance documents will need to not only build the instance document but also additionally create an extension taxonomy to meet the particular reporting requirements of that corporation. As faculty, we have used each of the taxonomy builder software offerings currently available. A number of these products have appropriate functionality to create both instances and extension taxonomies for the purposes of this trial. These products do not yet have fully satisfactory end-user functionality for widespread adoption amongst filers. As inadequate as these products have been, they are, however, acceptable for this proposed first round of efforts. Taxonomy builder software has improved significantly over the last 12 months, and we expect that they will be improved further over the coming year. As academics, we look forward to being able to using high-quality taxonomy builder software in the classroom and to providing feedback to the SEC and filer community based on our perspective of the end-user functionality of such software.

4. What specific criteria should be applied to determine the adequacy of the standard taxonomies?

We believe that there are a number of criteria that can be applied in determining the adequacy of taxonomies. Some of these criteria are in conflict with each other. For example, a principal criterion should be end user functionality. There is clearly a conflict between the completeness of the taxonomy and its usability. A taxonomy that attempted allow all possible permutations and combinations of disclosures likely to be made by filers would be, in our view, essentially unusable. Taxonomy builders must make wise choices between the depth of a taxonomy and its ability to be implemented by accountants, auditors, and other users that are not skilled in database and schema design. The ability of filers to develop valid XBRL extensions to taxonomies means that such taxonomies that might on the surface seem to have an inadequate number of tags are in fact kept deliberately small for reasons of usability.

Some of the factors that should be considered in determining the adequacy of taxonomies include:

- Technical: Compliance with XBRL International's *XBRL Specification 2.1*.
- Employ taxonomy construction best practice: Technical compliance with XBRL International's *Financial Reporting Taxonomy Architecture*.
- Usability: The taxonomies can be matched to two or three digit Standard Industrial Codes (SICs). A high proportion of companies within those SICs should be able to use the matched taxonomy without extension or with minimal extensions.
- Completeness: The collection of standard taxonomies should be tagging over 90% of the information received by the SEC. The taxonomy should fully map to a company chart of accounts. There should not be any loss of data. Poor fit may lead to loss of information and subsequent resistance.
- Accessibility: The goal of developers of instance documents should always be to link to standard taxonomies from any Internet accessible location.
- Consistency: Reference to standard taxonomies must not degrade over time. If the taxonomies change, the change must be backwardly compatible or the taxonomies must accommodate versioning.
- Information Use: Enhance information use to enable analysis without re-entering data.
- Comparability: Facilitate comparability across firms and industries.
- Continuous Reporting: Provide technological capability for near continuous financial reporting
- Understandability: Support human readability and understandability.
- Authority: From financial reporting standards and general practice.

Much research is required to bring the more than 20 years of experience from the information systems research community in the productive design of database schemas to the XBRL environment.

5 Should we include other standard taxonomies in the voluntary program? If so, specify which ones and explain why you believe such taxonomies are sufficiently developed.

It seems appropriate that the Securities and Exchange Commission should itself develop a small taxonomy that covers more of the key reporting elements on the particular filing made by the voluntary filer. This might be seen as header information and would be very useful for interpreting the particular filings made by the voluntary filers.¹²

As discussed above, we also urge the Commission to investigate the construction of taxonomies for Form 8-K and other similar forms.

6 Should we allow foreign private issuers or foreign governments who use non-U.S. GAAP standard taxonomies to participate in the voluntary program? If so, how should this be implemented? What adaptations, if any, would be needed? How would U.S. GAAP reconciliations be handled in a voluntary XBRL submission?

We are aware that there are a number of taxonomies for foreign jurisdictions. In particular, there are thoroughly developed taxonomies for International Financial Reporting Standards (IFRS). As there is a convergence process between US GAAP and IFRS, in the future the Commission should accept the IFRS taxonomy. The Commission should support efforts of taxonomy mapping which will eventually allow for comparison of corporations in similar industries and consolidation of international pieces of multinational companies.

¹² See also: Prichard, J. J., and Roohani, S. J. (2004). Development of a prototype public file repository for xbrl documents:Challenges and opportunities. *The International Journal of Digital Accounting Research*, 7(4), 57-79.

- 7. We plan to permit all filers to furnish XBRL data as an exhibit to Exchange Act and Investment Company Act filings so long as they use one of the specified standard taxonomies and form types. Should we further limit participation, such as by size or specific industry? Should we allow volunteers to furnish XBRL data with Securities Act filings?**

While some small firms may find the costs of such a trial prohibitive and may self-select out the SEC should strongly encourage participation and experimentation to receive a wide set of filings from a wide set of companies and be able to evaluate these efforts. It would be desirable that the SEC collaborate with XBRL International to advise volunteer filers to allow them to effectively and efficiently participate in the program. Firms and industries that volunteer should be strongly encouraged to have their extension taxonomies comply with XBRL International's FRTA (see our comment on Question 9).

- 8. We have proposed that XBRL data furnished by volunteers must be the same financial information as in the corresponding portion of the HTML or ASCII version. Should we allow volunteers to present less detailed financial information in their XBRL data?**

During the trial period, we suggest that participating companies be allowed to limit or expand the details of their voluntary XBRL filings. For example, companies may focus on a separate filing without footnotes since the taxonomies for footnotes are not now well developed. Providing piece-meal information to users is a departure from the traditional perspective that focuses on financial statements as a whole including footnotes,¹³ Therefore, the limited details of the XBRL filings need to be noted as a warning to all users. On the other hand, the SEC should consider providing a safe-harbor for expanded voluntary information.

¹³ Cohen, E., B.Lamberton, and S. Roohani. (2003). "The Implications of Economic Theories for Data Level Assurances: Research Opportunities.", Research Monograph, (Ed. S. Roohani.) p. 51-62

9 In order for the XBRL version of the financial statements to have the same level of detail as the HTML or ASCII version, we expect most companies would file extensions to the standard taxonomy. If you expect that companies would file extensions to the standard taxonomy, explain why extensions would be necessary. Would there be some companies that do not expect to file extensions? If not, explain why. Would the use of extensions harm the comparability that otherwise would exist among volunteers that use the same standard taxonomy?

We expect some companies would not file extension taxonomies. This group would include those companies whose financial statement classifications have already been included in the taxonomies and others who would view their past differences from the taxonomy to be of little or no consequence and would change their reporting practices in those cases to match the taxonomies.

Extensions generally will codify company specific classifications of data or alternative labels. We believe that extensions will be necessary until the taxonomies are fully developed. In their current stage of development, taxonomies still leave many data items untagged. Reasons vary and include lack of standardization, clarity of definition, and consistency of usage. Extensions would serve to provide complete disclosure from individual company's perspective. However, the need for company specific extensions would most likely taper off as taxonomies mature and industry-level extension taxonomies are developed.

If you expect that companies would file extensions to the standard taxonomy, explain why extensions would be necessary. While we do expect that many companies will seek to bring their reporting into line with the standard taxonomies, many corporations will need to file extensions to foundation taxonomies. Given the variation in business models adopted by corporations with the resulting dissimilarity in the materiality of financial reporting elements between corporations, no foundation taxonomies can incorporate all of the elements required by the complete set of voluntary filers. Indeed, as was discussed above, we consider that a primary advantage of the adoption of XBRL is that extension taxonomies are prepared and published by corporations. The extension taxonomies will provide considerable information value on the divergence of the corporations published financial statements from the core taxonomy. Companies should be encouraged to provided detailed XBRL disclosures to ALL of its segments using maybe separate extension taxonomies so eventually each major type of segment (say 4 digit SIC code) have one or more industry taxonomies.

One issue that the Commission may wish to consider in assessing the creation of company or industry sector extension taxonomies is the quality of those taxonomies. The XBRL International Financial Reporting Taxonomy Architecture (FRTA) provides a set of quality standards that govern the preparation of taxonomies. Either at this early stage or at a later stage in the voluntary filing program, the Commission may wish to either recommend or mandate that extension taxonomies meet the requirements of the FRTA. We can only imagine that poorly designed and implemented extension taxonomies may make the work of users that wish to take advantage of the XBRL filings, extremely difficult.

Would there be some companies that do not expect to file extensions? If not, explain why. We expect that the proportion of companies that will not file extensions at first will be small. Eventually with the proliferation of sector taxonomies that map to core taxonomies and constant adaptations and extensions there will be a substantial decrease in extensions (variances).

Would the use of extensions harm the comparability that otherwise would exist among volunteers that use the same standard taxonomy? All extension taxonomies do is to codify variation in financial data and practice that is observed currently in other forms of disclosure, notably print-based. We would recommend that the Commission eventually work with key industry groupings to develop industry-level extension taxonomies. It makes little sense to have, for example, each of the airlines build extensions for the airline industry on an individual basis. This reduces comparability between the airlines -- although such comparability in XBRL environment is still higher than in a print-based environment. On the other hand, this is too much to do before the initial voluntary filings that therefore should not be limited and will serve as the root of this work on the future.

Some of the extension taxonomies may address the creation of labels for taxonomy elements. Corporations may now wish to use the standard labels in the foundation taxonomies and to insert their own descriptive labels. While this assists the end-user presentation of financial reporting data, it does not change the underlying semantic meaning of the information. In other words, not all extension taxonomies are created equally.

10 Are there any confidentiality concerns regarding submitting extensions? If so, what are they?

We do not see that there are any confidentiality concerns regarding firm- or industry-level extension taxonomies. Extension taxonomies only codify variations and financial disclosure practices that already exist in other forms of disclosure.

The extensions will only be necessary if a company needs to add to an existing taxonomy in order to report on categories that it is already making public, or chooses to make public, which are not in the standard taxonomies. The extensions themselves must be XBRL compliant, so there should be no confidentiality concerns with them. The confidentiality concerns might pertain to the exchange of data between stakeholders in a supply-chain framework. Such supply-chain specific information is not in the public domain. They would not come, therefore, within the ambit of filings mandated by the Commission.

Filing of extension taxonomies will make the markets more aware which firm wants to be transparent and which want to be opaque. Some preliminary research indicates that footnotes from which clear common tags are difficult to obtain are the result of opacity by design. (e.g. see Enron's 2000 Annual Report SPE footnote). We believe the availability of extension taxonomies will motivate inter-firm comparability.

The extensions will only be necessary if a company needs to add to an existing taxonomy in order to report on categories that it is already making public, or chooses to make public, which are not in the standard taxonomies. The extensions themselves must be XBRL compliant, so there should be no confidentiality concerns with them. The confidentiality concerns might pertain to the exchange of data between stakeholders in a supply-chain framework. But supply-chain specific information would not be open to public and would not fall within the ambit of SEC mandated filings

11. We are contemplating allowing volunteers to submit XBRL data as an amendment to their filings or with a Form 8-K or Form 6-K that references the filing that contains the financial information to which the XBRL data relates. Should we require volunteers to submit XBRL data at the same time or within a specified number of days from the time they submit their official filing? Would this present difficulties for volunteers? Should we require volunteers to submit XBRL data only as an exhibit to the filing to which the XBRL data relates (i.e., remove the option to

submit the XBRL data as an exhibit to an otherwise unrelated Form 8-K or Form 6-K)?

Should we require volunteers to submit XBRL data at the same time or within a specified number of days from the time they submit their official filing? Given the nature of this voluntary filing program, we do not recommended that the Commission require the voluntary filers to file their data in XBRL format in the same number of days as is currently required for EDGAR reports that are in plain text. At the same time, we recommend that a reasonable number of days after the initial filing date be mandated as a maximum for XBRL filings. This could be sixty to ninety days.

The academic research on voluntary disclosure is complex, but provides some theoretical justification for viewing delayed XBRL format filings as beneficial to the reports' end-users. Because the XBRL formatted data enhances the ability to study the volunteers' reporting, a delayed XBRL filing creates a form of self-imposed discipline: The more easily investigated XBRL reports give confirmatory evidence about the firm's initial filings. Thus, the delayed XBRL filing tells the market and other end-users that the firm is willing to have its original filing scrutinized. Such information would seem to be useful provided it arrives prior to the next quarter's official filing. This idea parallels the arguments made for mandatory disclosures as validating voluntary disclosures, as studied by Gigler and Hemmer¹⁴, and relates to the model of post-decision information studied by Dye¹⁵. There is also support in the economics literature; see for instance Abreu et al.¹⁶

Would this present difficulties for volunteers? We believe that requiring volunteers to file in the same time as their reports would present some difficulties. In this early stage of adoption of XBRL, we consider that filers will have to expend both time and effort in mapping their filings to existing taxonomies; developing extension taxonomies; learning how to publish their instance documents in extension taxonomies to the EDGAR site, and working with their results to ensure that reporting is compatible with the appropriate mapping of the financial statements to both the foundation and extension taxonomies. To require the same deadline when a corporation

¹⁴ Gigler, F. and T. Hemmer. "On the Frequency, Quality, and Information Role of Mandatory Financial Reports." *Journal of Accounting Research* (Supplement 1998):111-47.

¹⁵ Dye, R. "Communication and Post-Decision Information." *Journal of Accounting Research* (Autumn 1983):514-37.

¹⁶ Abreu, D.; P. Milgrom; and D. Pearce. "Information and Timing in Repeated Partnerships." *Econometrica* (November 1991):1713-33.

is seeking to meet its primary filing requirements would be extremely stressful, and we believe that would dissuade many potential voluntary filers from participating in the voluntary program. On the other hand, an XBRL-based disclosure is by essence just a different “format” of disclosure and besides the taxonomy mapping and extensions just a manipulation of the same data and tools will exist to provide the basic skeleton. We do not expect that the basic financial statements without complicated notes to take more than 40-60 person hours to prepare by an experienced accountant supported by *appropriate* software tools.

Should we require volunteers to submit XBRL data only as an exhibit to the filing to which the XBRL data relates (i.e., remove the option to submit the XBRL data as an exhibit to an otherwise unrelated Form 8-K or Form 6-K)? We believe that filers should be able to submit their XBRL data as an exhibit to an otherwise unrelated form 8-K. This makes the XBRL data very evident in the marketplace and provides a practical and economic way for filers to submit their XBRL data later than the original filings. The possible exception to this rule during the voluntary process should be the form 8-K itself. As we previously discussed, we believe that the investing community would benefit greatly from XBRL filings of 8-K’s. Given that these documents are relatively small and not complex, these filings should come at the same time. The SEC should help the user community to locate immediately all XBRL disclosures through maps of spiders that will automatically bring this information to use spreadsheets.

- 12. We plan to develop and provide via our website an application for a standard template to render the XBRL information in human readable form. What are the advantages and disadvantages of our requiring the use of such a standard template? For example, could a standard template prevent a volunteer from presenting its XBRL data in as much detail as, and in a manner substantially similar to, the financial statements in its official filing? Should we only develop standard templates for certain industries? Instead, should we allow each volunteer to submit its own template for rendering the XBRL data?**

What are the advantages and disadvantages of our requiring the use of such a standard template? We are concerned with the concept of a standard reporting template. While we recognize that there is considerable benefit to be gained from human readable presentations of XBRL data, we believe the overriding value of such information is the many and varied ways in which consumers of this information will use the XBRL filings. Some users will extract key information from XBRL filings and indeed place them in a standard template. While others,

however, will take full advantage of the XBRL filings and download a complete set of data into their own database(s). Others will actually focus on the exceptions and variances to the standard while others will take an intermediate role and extract key information directly into Microsoft Excel or other end-user productivity tools.

For the Commission to develop a standard template supports the concept of creating a standard template for reporting itself. This is a contradiction in terms. We believe the market will quickly fill the need for such standard templates. Indeed, we envision that student groups as well as information intermediators will work with the professors to develop a wide range of end-user productivity tools to analyze the data from the XBRL filings. If the Commission decides that, it might be appropriate for the SEC to provide pointers (with appropriate language that waives the Commission's liability on end-user adoption of these tools) to this effort. A number of such projects have been submitted to the Bryant University XBRL student competition in recent years.

A further consideration of the development of standard templates is that corporations would be dissuaded from providing extension taxonomies, as those taxonomies would not be visible from the standard template. Much of the XBRL value for capital markets will be the ability to analyze the complete richness of financial statements. As we discussed previously, the databases currently utilized by analysts and the academic community tends to conceal such richness. While we expect that the world will converge to a set of accepted taxonomies progressively incorporating the current semantic part of financial statements, the mere existence of the exceptions will help the development of better and more robust future taxonomies.

For example, could a standard template prevent a volunteer from presenting its XBRL data in as much detail as, and in a manner substantially similar to, the financial statements in its official filing?. The above discussion supports our response.

Should we only develop standard templates for certain industries? We do not recommend the adoption of standard templates for the above reasons.

Instead, should we allow each volunteer to submit its own template for rendering the XBRL data? If the XBRL community could develop a standard for such templates, based perhaps on the XML XSL technology, this might be an appropriate approach. Volunteers should be able to submit their template. Template guide lines should be established which would ensure overall consistency of presentations. The SEC may wish to consider developing a template or templates

for its own internal use of the tagged data. If this is the case, then volunteers can be given access to these templates.

- 13. As to the voluntary program, we propose to exclude XBRL-Related Documents from the certification requirements of Rules 13a-14 and 15d-14 under the Exchange Act and Rule 30a-2 under the Investment Company Act and we state that the XBRL-Related Documents should omit audit opinions and review reports. For purposes of the voluntary program, should officers of the company certify the XBRL data? If so, what should the certification criteria be? Should auditors be required to attest to the data? If so, what should their attestation requirements be? What are the advantages and disadvantages of requiring certification and attestation? What complications would arise if a volunteer presented an audit or review report in its XBRL-Related Documents?**

For purposes of the voluntary program, should officers of the company certify the XBRL data? For legal liability purposes, corporate officers generally want to certify as few documents as possible. However, when all companies are required to present XBRL data, then we recommend that officers certify the XBRL data, since investors may rely on this data to make significant investment decisions. On the other hand, XBRL reporting is an output format and PDF reports are not certified in their acuity. We do not feel that currently this is necessary.

If so, what should the certification criteria be? We recommend SysTrust-type criteria on corporate systems with increased emphasis on integrity and security concepts. The certification process should provide reasonable assurance that the corporation's financial information has been mapped accurately into XBRL data. In addition, security has been maintained to prevent unauthorized parties from making changes to XBRL data.

We consider that it makes little sense for auditors to certify the instance documents, as then they would likewise be certifying the taxonomy selection, tagging of data, etc.. Those are essentially technical matters. The certification that really matters is the basic financial statements. Eventually the balkanization of data ensuing not only from XBRL but mainly from the multitude of XML standards will need both data level assurance and some form of control tags that provide information on the validity and reliability of the specific datum.

Should auditors be required to attest to the data? Whilst opinion in our group varied somewhat on this point, the consensus was that we consider that the Commission not require auditors to attest to the data. The auditors' report on the overall financial statements can be

carried into the instance documents. The auditors would not need to express an opinion on the document, but they would be under an obligation to ensure that the financial statements on which they reported are carried accurately into the XBRL instance document. This accomplishes the attestation needed and at the same time, gives the auditors a break in terms of putting an additional report into the process. We anticipate that the XBRLization of statements will be progressively impounded into ERP and financial reporting preparation software and will be performed more or less automatically. Unless management deliberately departs from printed financial statements the XBRL versions will be correct. Accuracy (mechanical) checks between magnetic form of financial statements and XBRL ones are easy and mechanically possible to perform, they fall in the output format type of problems and these are not independently attested.

What are the advantages and disadvantages of requiring certification and attestation?

One advantage would be that the auditors would have to check the process used in preparing the XBRL documents. A related disadvantage is that it may not add much value to the process. The cost might also be significant.

If so, what should their attestation requirements be? There should be no attestation requirement but a disclosure of how the filing was prepared and an assertion of management to that effect. Attesting that XBRL statements that are similar to paper ones is inappropriate.

Advantages of requiring certification and attestation: We see only limited benefits from attestation of the XBRL filings – certification of the veracity of the data points themselves (as distinct from the technical tagging) would be a different matter entirely that goes far beyond this proposed trial.

Disadvantages of requiring certification and attestation: Disadvantages include costs in firm resources needed, audit fees, reduced timeliness of data release unless the auditor employed continuous auditing type techniques.

What complications would arise if a volunteer presented an audit or review report in its XBRL-Related Documents? It would depend on what the auditor's report says. There should not be any serious complications, but there are advantages and disadvantages as outlined above.

14. (a) Should the XBRL data be considered filed or furnished for purposes of the voluntary program? Why? Would filers be more or less likely to participate in the voluntary program if the information were deemed filed?

We feel that at this stage filers should present the traditional information as the primary filing and present XBRL information as additional. Until the whole process is thoroughly tested the XBRL data should not be considered filed. While some filers might consider the voluntary filings to be a waste of time and resources if the information submitted is not deemed filed, overall the negative impact of this issue on the number of experimental filers should be less important if the data furnished voluntarily are not considered filed.

We also feel that planning for a second stage be started now that would progressively extend to filed status additional data fields of a non-financial nature as well as some standardization of footnotes.

14. (b) To encourage participation in the voluntary program, should liability protections be increased beyond that proposed? For the protection of investors, should liability protection be decreased from that proposed? Is there any reason to provide liability protections under the Securities Act if, as proposed, volunteers cannot submit XBRL data with Securities Act filings and XBRL data is deemed not incorporated by reference?

To encourage participation in the voluntary program, should liability protections be increased beyond that proposed? We recommend the Commission create a safe harbor provision.

For the protection of investors, should liability protection be decreased from that proposed? No.

Is there any reason to provide liability protections under the Securities Act if, as proposed, volunteers cannot submit XBRL data with Securities Act filings and XBRL data is deemed not incorporated by reference? We do not expect any major problems with this as the XBRL data is the data form published financial statements and any variations in this first level of disclosure are easily detectable. If the Commission is concerned about this, a log of data downloader should be kept with registration and any discrepancies detected should be broadcasted. This is an inexpensive and reasonable precaution using extant technology.

15. As proposed, the liability protection provisions require that information in the XBRL-Related Documents be the same as the corresponding information in the

official filing and that information in the official filing not be materially false or misleading. Also as proposed, to the extent information in the XBRL-Related Documents differs, it would be deemed the same if the volunteer had made a good faith and reasonable attempt to make it the same and, as soon as reasonably practicable after the volunteer becomes aware of the difference, the volunteer amends the XBRL-Related Documents to make the information the same. Is it appropriate to deem the information the same under these conditions? Under what, if any, conditions should the information be deemed the same?

As proposed, the liability protection provisions require that information in XBRL-related documents be the same as the corresponding information in the official filing and that the information in the official filing not be materially false or misleading. Also proposed is that XBRL filings be amended whenever official filings are amended. To that end, we have several comments/suggestions:

1. Correspondence between XBRL and official filings. Naturally all filings with the SEC should be free from misstatements whatever the format. As unofficial attachments, giving the XBRL “documents” limited liability is a necessity to encourage active participation during this experimental period. However, while the information content will be the same, we do not propose that the level of detail be necessarily the same. This is an important distinction that must be made clear when one is discussing legal liabilities. Appropriate disclaimers and warnings must be prominently displayed on all XBRL documents making it clear that these do not represent official SEC filings.
2. Amendment to Filing. One concern for us appears on page 15 of the SEC document, which says “If a volunteer wants to amend XBRL-Related Documents it submitted earlier, it should *amend the filing with which the XBRL-Related Documents appeared as an exhibit.*” (Italics are ours). This is unclear. This could imply very little work or conversely, it could imply much work, involving a great deal of time, effort, and money. This should be clarified. We have suggested previously that the information content be the same but that the detail and even the format be different. A “good faith and reasonable attempt” to make the XBRL documents the same as the official filings when the detail and format are different seems a standard that would be difficult to objectively measure by virtually anyone.

3. *Mechanics of subsequent changes.* It is not clear in the proposed rule change how the SEC will be storing the XBRL document, in raw XML files, database, etc. We assume, however, that in case of subsequent changes in financial statements submitted, a new XBRL document should replace the old one to make it less complex during the trial period. The expertise level within the filer's organization will be a critical factor affecting companies' ability to react on a timely basis to updating the XBRL-related documents. Our access logging and change broadcast suggestion of above should be enabled.

16 How should we determine how useful the tagged data is to users of the information?

As we discussed above, the academic research community will be a prime user of voluntary XBRL filings. We anticipate that the academic research community will work on a variety of research topics, including:

- Capital markets impact of XBRL filings.
- The accuracy of XBRL filings
- Exception taxonomies and the migration to standard sector taxonomies
- Parsing and tagging footnote information
- Incorporating control tags into XBRL data
- Measurements of data level assurance
- Sarbanes-Oxley Section 404 related measurements in XBRL statements
- Timeliness of XBRL releases
- Timeliness of XBRL Reporting and Information Transfers
- The determinants and economic consequences of XBRL reporting

17 What specific steps can we take to encourage registrants to participate in the voluntary program?

- Safe harbor from litigation

- Encouragement from the SEC in the form of discussion with the SEC prior to any SEC action on ALL company statements, not only the XBRL ones
- Some form of SEC “good citizen” seal
- Participation in an SEC XBRL advisory board

VIII. COST-BENEFIT ANALYSIS

C. Request for Comments

We request comment on all aspects of this cost-benefit analysis, including identification of any additional costs or benefits of, or suggested alternatives, to the proposed rules. Commenters are requested to provide empirical data and other factual support for their views to the extent possible.

The cost and benefits of complying with the financial reporting requirement would vary in content, degree, and timing. On a comparative and overall basis, costs would be immediate, tangible and sizable than expected benefits. On a detailed basis, companies would experience various classes of costs and benefits with varying features.

Costs: Cost of XBRL based financial reporting would fall into two broad classes: tangible and intangible. The tangible class includes infrastructure costs, out-of-pocket costs pertaining to the software and personnel expenses to plan, implement and support the XBRL reporting requirements, and training costs. In the initial years, the tangible cost attributable to software and infrastructure would be a higher proportion of total costs. As the learning improves and knowledge base matures within the organization, this component of tangible cost should taper off. More specifically, we anticipate that in the long run, the advancements in IT would facilitate process automation in XBRL enabled financial reporting and make the tangible portion of the costs immaterial.

The intangible costs include affect on productivity (at least in the initial years) due to shift of personnel from their regular job responsibilities to planning, implementing and meeting the XBRL reporting requirements. In the initial years, companies will produce at least two sets of financial statements: one in regular format and another in XBRL format. These parallel processes would entail cost on the organization. When SEC mandates XBRL format and moves away

completely from the traditional reporting format, this portion of intangible costs would reduce, but only marginally.

The completeness of the XBRL taxonomies continues to be a concern. For example, the year 2000 version of the then XBRL US GAAP taxonomy for C&I companies was found to be a poor fit with companies' reporting practices leading to potential for loss of data (Bovee et al. 2004¹⁷).

Such a situation would force the capital market to process two sets of data to make economic decisions. The resulting negative effect on trust may likely raise the relational risk and hence, the cost of capital for the company (Nootboom et al. 1997; Nicolaou et al. 2003). We consider that the current taxonomies are much improved, but nonetheless there will be need for close attention to this issue.¹⁸

However, companies would also experience reduction in the cost of capital due to improved, transparent and real-time financial reporting and disclosure of data. Efficiency in disclosure would translate into friction-less information flow and dissemination in the capital market. Consequently, market rewards the company by putting a discount on the companies' cost of capital. We believe that if the claimed effects of XBRL are realized, the reduction in cost of capital would more than offset the cost outlay attributed to both tangible and intangible components.

In the current stage of development, there are no known empirical studies that examine the effect of XBRL reporting on cost of capital. A primary reason for lack of any empirical study to corroborate the claimed arguments stated above is the absence of data. Companies are not required to disclose costs of complying with XBRL reporting requirements. Also, companies do not voluntarily disclose such information. Finally, the number of companies that have voluntarily provided XBRL tagged financial statements on the SEC's website is limited. Besides, companies

¹⁷ Matthew Bovee, Alexander Kogan, Rajendra P. Srivastava, Miklos A. Vasarhelyi and Kay Nelson (2004) Financial Reporting and Auditing Agent with Net Knowledge (FRAANK) and eXtensible Business Reporting Language (XBRL), , *Journal of Information Systems*, forthcoming.

¹⁸ Nicolaou, A. I., A. T. Lord and M. L. Liu. 2003. Demand for Data Level Assurances in Electronic Commerce: An Experimental Examination of a Web-Based Data Exchange Using XML, in *The Trust and Data Assurances in Capital Markets: The Role of Technology Solutions*, PWC Monograph from Bryant College.

Nooteboom, B., H. Berger and N. G. Noorderhaven. 1997. Effects of trust and governance on relational risk. *Academy of Management Journal* 40 (2): 308-338.

that do provide XBRL tagged information do not maintain consistency on a regular basis. These structural limitations constrain conducting any scientifically reliable study to test cost-benefit hypotheses of the arguments for cost and benefits are mostly anecdotal and based on logic. However, it bears mentioning that the logic for the claimed benefits derives its value on scientific reasoning and process based analysis. Therefore, a priori, we expect that these arguments would hold true in future empirical tests when data is available.

Benefits: In this section, we explore potential benefits from publicly traded companies to report their financial information and disclose any related information for SEC EDGAR using XBRL-tags. The major benefits are faster processing of financial information for financial analysts, investors, regulators, and any related parties. This shortening of processing time brings higher efficiency to economy, and better transparency to financial markets. Higher efficiency of information processing time allows financial analysts, investors, and regulators to quickly cross check financial data across an industry or in the entire financial markets, and can discover anomalies quicker than otherwise. These benefits result in lower cost of capital for companies that participate in the financial markets. Botosan (1997) examined the disclosure level and cost of capital, and provided empirical evidence that the increase in the disclosure level reduces the cost of equity capital.¹⁹ This study implies that transparency and shortening of information processing of financial data bring similar benefits to publicly traded companies, and these benefits should encourage more publicly traded companies not only to volunteer for such XBRL-tagged financial reporting and disclosure, but also should be willingly comply for the future requirements for such reporting and disclosure mandate from SEC.

Furthermore, the model of Trabelsi, Labelle and Laurin (2004)²⁰ adapted to the Internet from the framework of Gibbins, Richardson and Waterhouse's (1990)²¹ shows that firms manage not only the disclosure content but also other secondary features such as the medium; data organization; timing or usability. This study implies that firm seeking specific advantages in product and capital markets will volunteer for such XBRL tagged financial reporting and disclosure.

¹⁹ Botosan, C. A. 1997. Disclosure Level and the Cost of Equity Capital. *The Accounting Review*, Vol. 20 (3) (July): 321-439

²⁰ Trabelsi, S., R. Labelle, and Laurin, C. 2004. The Management of Financial Disclosure on Corporate Websites: A Conceptual Model. Forthcoming in *Canadian Accounting Perspectives*. 13 (2)

²¹ Gibbins, M., A. Richardson, and J. Waterhouse. 1990. The management of corporate financial disclosures: opportunism, ritualism, policies and processes. *Journal of Accounting Research*. 28 (1): 121-143.

The shortened information processing time also brings higher competition to companies in the same industry or in the entire market places. These tagged financial data provide an infrastructure for financial application developers to create analytical software for credit and risk assessment across the industry or an entire financial market. Furthermore, this infrastructure also brings an environment for more timely valuation of derivatives. In the past, much of the financial analysis for valuation was done manually so the efficiency in the market places is somewhat hampered due to this slowness, and as a result creating bubbles of inefficiencies in generally efficient financial markets. This emerging infrastructure based on XBRL-tagged financial reporting and disclosure facilitates to eliminate or reduce such pockets of inefficiencies in the market place.

There is financial economic literature that advocates a special federal policy to cripple “noise” trading (Shleifer and Summers 1990; Summers 1986)²². De Long et al (1990) define noise traders as those investors who may be subject to systematic biases, whereas rational traders or “smart money” are arbitrageurs or investors who form fully rational expectations about security returns.²³ Some financial economists argue that noise traders impose unnecessary deadweight losses on rational traders, and to restrain or eliminate such losses from noise trading, a special federal policy such as short-term capital gains taxes or transaction taxes could be considered. Before implementing such federal policy for restraining noise traders’ activities, it may be crucial to examine whether noise traders are indeed more subject to systematic biases than smart money. However, before further debates, XBRL-tagged infrastructure is another path to help traders reduce such systematic biases without any radical federal policies. Noise traders’ biased behavior could have come from information asymmetry between what it is available to management and what is being disseminated. The shortening of information processing time will facilitate financial software vendors to create products to reduce the gap by cross-examining financial data from different companies.

Furthermore, this new mandate for external reporting will significantly affect the internal reporting processes. Companies will find XBRL-tagged internal reporting processes convenient

²² Shleifer, A., and L. H. Summers. 1990. The Noise Trader Approach to Finance. *The Journal of Economic Perspectives*. Vol. 4 (2) (Spring): 19-33.

Summers, L. 1986. Does the Stock Market Rationally Reflect Fundamental Values? *The Journal of Finance*. Vol. 41 (3). (July): 591-601.

²³ De Long, J. B., A. Shleifer, L. H. Summers, and R. J. Waldermann. 1989. The Size and Incidence of the Losses from Noise Trading. *The Journal of Finance*. Vol. 44 (3). (July): 681-696.

and internally consistent to comply for external reporting. Also such internal reporting processes will also help reduce any pockets of internal inefficiencies, and potential for fraud because of increased efficiency in streamlined internal reporting processes.

Other important benefits are educational for new types of accountants for the 21st century. In the past, accounting education was driven primarily by transaction cycles or debits and credits type instructions. As the technologies like the Internet and XBRL allow publicly traded companies to disseminate their financial statements, annual reports, and any other related information on timely basis, the gap between accounting risk measures and market risk measures will be reduced; this gap was still substantial in the study by Beaver, Kettler and Scholes (1970).²⁴ As this gap is reduced, accounting education will need to adapt to produce qualified accounting graduates to meet the skill demanded by stakeholders.

Once the XBRL financial reporting and disclosure is complete, then accountants, analysts and investors can do various types of comparative and valuation analysis on a real time basis, as soon as companies submit their various SEC filing. For instance, in analytical procedures for auditing a company, the tags allow auditors to create audit software to conduct a substantive test with timely data for industry and sector comparison. Furthermore, this will allow auditors, analysts, and investors to develop new types of audit tests, and risk and return metrics. As a result, this will improve the quality of internal control, and make our financial markets more transparent and efficient than it is now. From this initiative, there are enormous economic implications for the financial and investor community. There will be emergence of a new industry to take advantages of what can be done with this new type of data.

Furthermore, the addition of an XBRL infrastructure will reinforce and make easy to implement various components of Sarbanes-Oxley Act of 2002, and help companies manage their enterprise risk more efficiently. As a result, investors' confidence will restore, and more stable stock markets will resume over the long run from better internal control, higher transparency for financial disclosure, and timely and efficient delivery of financial information to investors.

²⁴ Beaver, W., P. Kettler, and M. Scholes. 1970. The Association between Market Determined and Accounting Determined Risk Measures. *The Accounting Review* (October): 654-682.

In conclusion, we may note that the arguments for cost and benefits are mostly anecdotal and based on logic. However, it bears mentioning that the logic for the claimed benefits derives its value on scientific reasoning and process based analyses. Therefore, a priori, we expect that these arguments would hold true in future empirical tests when data is available.