



E&Y CARAT NEWS BRIEFS

Ernst & Young Center for Auditing Research and Advanced Technology (E&Y CARAT)

DIRECTOR'S NOTE

Holiday greetings!

I cannot believe it how quickly the time has passed since the last newsletter. Summer and Fall have both been very busy at the Ernst &



Young Center for Auditing Research and Advanced Technology (E&Y CARAT). Besides conducting the basic research dealing with the auditor's decision

making process, assessing e-risk, and other issues, the CARAT has actively been busy on developing technologies and tools for on-line reporting and on-line auditing, especially the work related to XBRL (Extensible Business Reporting Language).

XBRL is an XML based language for digital reporting and sharing of information in the digital e-economy. Under XBRL every important piece of information, financial or non-financial, will be tagged. The tagged information can be accessed by users from anywhere in the world irrespective of their computer platform.

TAXONOMY UPDATE

Currently there are more than 100 major firms, including the big five accounting firms, that are members of the international consortium on XBRL that is developing the taxonomies for various countries. The US group has already completed the taxonomy based on US GAAP for financial reporting purposes. The current US GAAP based taxonomy has about 1880 tags. The goal is to develop a complete set of taxono-

my that will include tags for internal reporting, external reporting, information for financial analysts, tax reporting to the IRS, etc. You should visit the website of XBRL.Org for more information on XBRL.

Based on the progress on our FRAANK (Financial Reporting and Auditing Agent with Net Knowledge) project, we received a small project on XBRL to study the US GAAP taxonomy and to create a repository of financial statements tagged in XBRL taxonomy of 80 publicly traded companies in twelve major industries. This was a challenging task and also a learning experience. Six firms, members of the XBRL

International, financially supported the project: Edgar Online, Ernst & Young, IBMatrix, KPMG, PriceWaterhouseCoopers, and XBRL Solutions.

MAPPING THE TERRITORY

There were two main objectives of the project. The first objective was to find how well the existing taxonomy mapped the reality and provide a list of items that did not map or had no tags. Our findings helped the XBRL.Org to modify the original C&I (Commercial and Industrial) taxonomy. If you are interested in knowing more about the results of our study, send me a note at rajendra@ku.edu, and I will send you a copy of the paper. The second objective was to create a repository of XBRL tagged financial statements that will be available to researchers and software developers worldwide to show the value of

XBRL in financial reporting. The repository can be accessed from the following web site: <http://www.xbrlsolutions.com/Public/Demos/edgaronline/Repository/Main.htm>.

GETTING ON THE MAP

I would like to express my sincere thanks to Charlie Hoffman of XBRL Solutions for his help in completing the project and also thanks to Professor Mike Ettredge and Matt Bovee for their help. The XBRL project not only gave us an



early start on it but also put the E&Y CARAT on the world map. People around the world know this project as the KU-Edgar Online XBRL Project.

One advantage of working on the XBRL project has been that we have directly incorporated this concept into our FRAANK project. Now FRAANK reads the 10Q and 10K reports from the SEC Edgar database, parses the financial and non-financial information, identifies headings, paragraphs, individual financial statements, and tags the entire document using US GAAP-based XBRL taxonomy. Just think about its impact on creating and accessing financial databases.

You can use such a database for benchmarking, developing models for financial analysis and risk assessments. You don't need to retype any thing. You can sort through the entire 10Q or 10K

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report by headings, statements, line items on the financial statements, auditor reports, footnotes etc. Currently we are trying to improve its intelligence to increase its reliability. It will become a great tool for research and developments.

I am happy to report that through the sponsorship of CIBER (Center for International Business Education and Research) and E&Y CARAT, we had the first International Conference on XBRL Taxonomies: "Current Issues and Future Directions," on October 12-13, 2001. You will find a list of



From left, Zane Swanson, Dipankar Jyoti, and Badri Viswanathan.

papers presented at the conference on Page 3. The conference was a great success. There were about 45 participants from United States and Canada. The participants of the conference expressed a strong desire to have the next conference again at KU.

Like previous years, we were again busy with visiting scholars and collaborating with them on various research projects. These visiting scholars to the Center are funded through the E&Y CARAT funds. However, some visiting scholars are funded through other sources. For example, currently we have Professor V. K. Vasal, Associate Professor, University of Delhi, India, visiting the E&Y

CARAT as a CIBER Fellow to work on XBRL related issues in international context, especially India. He will be visiting the CARAT during November and part of December.



V. K. Vasal

Besides the visiting scholar's program, the CARAT provides fellowships to undergraduate and graduate students. We have provided five fellowships this year. These student fellows are introduced on page 5.

This program has not only provided financial support to these bright young people at KU but also has provided a learning experience working with a faculty mentor on a challenging research project.

The Center also partly supports two research seminars, one in accounting and finance, and the other in auditing, artificial intelligence, and management science. You will find the

papers presented at the two seminars on Pages 4 and 6.

We are having a great time at the Center. The E&Y CARAT has become an internationally known center. Thanks to the "E&Y family" for their enormous support.

As a concluding note, it was comforting to know that all the people at Ernst & Young were safe and were not directly hurt by the September 11 terrorist attack. I hope we get over the pain and move on in our lives and make this world a better and safer place to live.

Raj
(Rajendra P. Srivastava)

Highlights of Director's Activities

- Presented the paper "A Conceptual Framework and Belief-Function Approach to Assessing Overall Information Quality" at the Information Quality Conference at MIT, November 2-4, 2001, and at INFORMS, November 4-7, 2001. This paper was co-authored with Matt Bovee and Brenda Mak.
- Presented the paper "Belief Function Approach to Evidential Reasoning for WebTrust Assurance Services: A Case Study" at INFORMS, November 4-7, 2001. This paper was co-authored with Lili Sun and Ted Mock.
- Participated in presenting research findings of the XBRL project and FRAANK at the International Conference on XBRL in Sydney, October 22-26, 2001.
- Organized the first Indian XBRL Conference in New Delhi, March 12, 2001.
- Organized the first International Conference on XBRL Taxonomies: Current Issues and Future Directions" at KU, October 12-13, 2001.



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International Conference Explores XBRL Taxonomies

CARAT and the Center for International Business and Research (CIBER) co-sponsored the "International Conference on XBRL Taxonomies: Current Issues and Future Directions" at the Edwards Campus October 13.

The day was packed with information from XBRL scholars from around the world. Presenters and their topics were as follows:

Liv Watson, Edgar Online, "An Update of the XBRL Committee"

Mike Ettredge, University of Kansas, "An Empirically-Based Approach to Creating Financial Reporting Taxonomies."

Yu Cong, **Alexander Kogan**, **Miklos A. Vasarhelyi**, Rutgers University-Newark, "The Information Content of the Presentation of Financial Statements: An Information System Approach."

Kinsun Tam, SUNY-Albany; **Sanjay Goel**, General Electric Corporate Research & Development; **Jagdish Gangolly**, SUNY-Albany, "On the Design of an XML-Schema Based Application for Business Reporting: An XBRL Schema Derivative."

Eric Cohen, PricewaterhouseCoopers, "Taxonomy and Harmonization Matters."

Julie Smith David, Arizona State University; **Guido Geerts**, University of Delaware; **William McCarthy**, Michigan State University, "Materialization of Account Balances in the REA Accounting Model: A Conceptual Mapping of ebXML to XBRL."

Efrim Boritz and **W. G. No**, University of Waterloo, "Assurance Reporting with XBRL: XARL (eXtensible Assurance Reporting Language)."

Ronald J. Daigle and **James C. Lampe**, Texas Tech University, "An Analysis of the Relative Demand for Continuous Online Assurance from an External and Internal Decision-Making Basis."

V. K. Vasal, University of Delhi, India, "Devising Taxonomies for Intangibles—A Comparative Study of the US and India."

Zane Swanson and **Nitham Hindi**, Emporia State University, and **Terry Fox**, Baylor University, "Bankruptcy Analysis Using XBRL Financial Statements in a Spreadsheet and Implications for Taxonomy Usage."

Bill Cary, Innovision Inc., "Implementing XBRL in a Multi-Protocol Framework."

R. Srivastava and **Matt Bovee**, University of Kansas, "FRAANK-XBRL: An Intelligent Tool for Converting Financial Statements in Text to XBRL Tagged Documents."

Miklos Vasarhelyi, Rutgers University, "Problems and Issues with XBRL."

Panel Discussion, and Question and Answer Session: Zack Coffin, KPMG; Charles Hoffman, XBRL Solutions; William McCarthy, Michigan State University; Miklos Vasarhelyi, Rutgers University.



Vijay Kalpathi, Sunil Matte, Xiaodong Du



Raj Srivastava and Bill Remington



Mat Bovee

AIS, School, CIBER Provide Valuable Assistantships

E&Y CARAT would like to acknowledge the support from the School of Business, Accounting and Information Systems Group, and CIBER for providing research assistantships to work on CARAT projects. In particular, I would like to thank Professor Jim Heintz and Mr. Greg Freix for providing an Accenture Fellowship, Professor Surendra Singh for the School of Business Fellowship, and Professor Melissa Birch for the CIBER Fellowship.

This year's Accenture Fellow is Badri Viswanathan and School of Business Fellow is Xiaodong Du. These individuals are working along with Sunil Matte and Vijay Kalpathi on the FRAANK project to improve its intelligence. The CIBER Fellowship will be awarded during the summer.

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Accounting, Information Systems, and Finance Workshops

Fall 2001: 1:30-3:20 p.m. in 502 Summerfield Hall

August

- 31 Mike Ettredge, University of Kansas, "The Auditor's Going Concern Decision for Internet Clients." The paper is co-authored with V. J. Richardson and R. P. Srivastava.

September

- 7 Chris Anderson, University of Kansas, "Bank Mergers, the Market for Bank CEOs, and Managerial Incentives." The paper is co-authored with David A. Becher, and Terry L. Campbell II.
- 14 H. Berkman, University of Auckland; M. Ettredge, P. Koch, V. Richardson, and S. Scholz, University of Kansas; "Chat, Dispersion of Expectations, and Trading Activity Around Earnings Announcements."
- 21 Kathleen Farrell, University of Nebraska, "An Analysis of Executive Compensation in Small Businesses."
- 28 Mangus Dahlquist, Duke University, "Sovereign Risk and Return in Global Equity Markets."

October

- 5 Paul Dunmore, Victoria University, Wellington, NZ, "A Better Alternative to the Use of Financial Ratios."
- 12 Charles Himmelberg, Columbia University, "Investor Protection, Ownership, and Capital Allocation."
- 15 John Wells, Washington State University, AIS Faculty Candidate, "Deriving Interface Metaphors from the Business Domain: An Empirical Investigation."
- 22 Arvind Tripathi, University of Connecticut, AIS Faculty Candidate, TBA.
- 26 Scott McCoy, University of Pittsburgh, AIS Faculty Candidate, TBA.

November

- 2 Kathryn Dewenter, University of Washington, TBA.
- 9 Alisha Malloy, Georgia State University, AIS Faculty Candidate, TBA.
- 16 R. Srivastava and Matt Bovee, University of Kansas, "FRAANK: An Intelligent Agent for Retrieving and Analyzing Financial and Non-Financial Information."
- 19 Andrew Urbaczewski, Washington State University, AIS Faculty Candidate, TBA.
- 23 No Workshop (Thanksgiving Break)
- 30 Stacy E. Kovar, Kansas State University; "An Assurance Expectations Gap: Evidence from Clients and Providers." The paper is co-authored with, K. G. Burke and P. Preshaw, Millsaps College, Jackson, MS.

December

- 7 Neal Stoughton, University of California, Irvine, "Optimal Risk Management in Banking."
- 14 No Workshop (Stop Day)

Publications and Working papers at the E&Y CARAT during the last academic year:

1. Bovee, M, R. P. Srivastava, and B. Mak, "A Conceptual Framework and Belief-Function Approach to Assessing Overall Information Quality."
2. Ettredge, M., V. Richardson, and Susan Scholz, "Determinants of Voluntary Dissemination of Financial Data at Corporate Web Sites," to be presented at the 2002 HICSS international conference.
3. Ettredge, M., and V. Richardson, "Assessing the Risk in E-Commerce," to be presented at the 2002 HICSS international conference.
4. Ettredge, M, V. Richardson, and R. P. Srivastava, "The Auditor's Going Concern Decision for Internet Clients."
5. Sun, L., R. P. Srivastava, and T. Mock, "Belief Function Approach to Evidential Reasoning for WebTrust Assurance Services: A Case Study."
6. R. P. Srivastava, A. Kogan, M. A. Vasarhelyi, and R. Hoitash, "An Electronic Businesses Balanced Scorecard and Digitization Metrics."
7. Mock, T., R. Srivastava, and A. Wright, "Auditor's Computational Model for Multiple Hypotheses Evaluation."
8. Lu, H., and R. P. Srivastava, "Working Paper Review Process: A Theoretical Model And Simulation."
9. Srivastava, R. P., A. Wright, and T. Mock, "Causal Schemas and Multiple Hypotheses Evaluation in Accounting: A General Framework," submitted to *Management Science*.

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17. Richardson, V., D. Chatterjee and R. W. Zmud, "Examining the Shareholder Wealth Effects of Newly Created CIO Positions," *MIS Quarterly*, 25(1), 2001, 43-70.
18. Richardson, V., M. Ettredge and S. Scholz, "An Emerging Model of Web Site Design for Corporate Disclosure: Targeting Information Clienteles," *Communications of the ACM*, forthcoming November 2001.
19. Richardson, V., M. Ettredge and S. Scholz, "Timely Financial Reporting at Corporate Web Sites?," *Communications of the ACM*, forthcoming.
20. Richardson, V., and K. Joseph, "Free Cash Flow, Agency Costs and the Affordability Method of Advertising Budgeting," *Journal of Marketing*, forthcoming January 2002.

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November 2001

Management Science & Technology Research Seminar

Room 424 Summerfield Hall, Fridays, 10:30--11:50 AM

August

- 13 Milan Studeny, Research Scientist, Czech Academy of Sciences, "On Description of Probabilistic Conditional Independence Models by Structural Imsets."
- 24 Organizational Meeting
- 31 Po-Lung Yu, Distinguished Professor, University of Kansas, "On Evolution of Optimization to Competence Set Analysis."

September

- 7 Yong Lui, PhD Candidate, Univ. of British Columbia, "On Market Competition in the TV Broadcasting Industry."
- 14 Allan Hanson, Professor of Anthropology, University of Kansas, "Some Social Consequences of Information Automation."
- 21 No meeting due to to ECSQARU in Toulouse, France.
- 28 Glenn Shafer, Professor, Rutgers University, "A Game-Theoretic Capital Asset Pricing Model." Dinner reception for Professor Shafer in evening.

October

- 5 Zhiping D. Walter, Univ. of Connecticut, "Theory of User Acceptance of Information Technologies: An Examination of Physicians."
- 12 Phan Giang, PhD Student in Business, University of Kansas, "Decision Making with Possibility Theory-I."
- 26 John M. Charnes, Associate Professor, University of Kansas, "Measuring Hedge Effectiveness."

November

- 2 Phan Giang, PhD Student in Business, University of Kansas, "Decision Making with Possibility Theory-II."
- 9 Riza Demire, PhD Student in Business, University of Kansas, "Downside Risk for Short and Long Hedgers."
- 16 Catherine Shenoy, Assistant Professor, University of Kansas, "Modeling Expert Judgment in Portfolio Analysis."
- 23 No Workshop (Thanksgiving Break)
- 30 Benedict Kemmerer, PhD Student in Business, University of Kansas, "Bayes Nets for Venture Capital Decision Making."

December

- 7 Matt Bovee, PhD Student in Business, University of Kansas, "XML, Taxonomies and Digital Documents."