

XBRL Citation Analysis: A Decade of Progress and Puzzle

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Abstract

XBRL (eXtensible Business Reporting language) is reaching its 10th year. The concept was articulated in 1998 by Charles Hoffman, further it was formalized as XFRML (eXtensible Financial Reporting Mark Up Language). The objective of this paper is to examine a decade (1998-2008) of articles published in various publications including academic journals to identify trends and patterns. Another goal is to assess public perceptions of XBRL, its capabilities and its future. We found over 3,300 XBRL citations where XBRL appeared either in the title or abstract of the article during 1998-2008 periods. Considering that XBRL reporting is required by most SEC filers starting in 2009, the academic community has been proactive in assessing this new reporting standard and there is a trail of research to document.

Citation analysis has been used in the past to identify trends and issues in a specific area. A decade of XBRL citation analysis may reveal trends, progress, puzzles, and outstanding issues. Though the concept has been around for about a decade, it is formally known as XBRL only for the past eight years. XBRL has been initiated and developed by a diverse group of professionals, and therefore there are various opinions and expectations during this decade. There has been an expectation gap between what XBRL was to deliver initially, and its current public perceptions.

The first article appeared in Accounting Technology in 1999 by Eric E Cohen: "The XML files: Solving the Mystery of Data Interchange." The American Institute of CPAs provided funding for the idea and first articles regarding the use of XML in accounting and financial reporting appeared in *Journal of Accountancy*, *The CPA Journal*, *Practical Accountants*, *American Banker*, *Business wire*, and *Computerworld* as early as 1999. From the start, XBRL was supported by a diverse group consisting of large accounting firms, software companies, banking industry.¹

¹ **August 1999:** Meeting at the Woodburn Group, Minneapolis - 13 companies met with the AICPA to establish the XFRML Steering Committee. The initial steering committee included: The AICPA, Arthur Andersen LLP, Cohen Computer Consulting, Deloitte & Touche LLP, e-content company, Ernst & Young LLP, FreeEDGAR.com, Inc. (now Edgar Online, Inc.), FRx Software Corporation, Great Plains, KPMG LLP, Microsoft Corporation, PricewaterhouseCoopers LLP, and The Woodburn Group.

October 14 1999: Meeting in NYC at AICPA - The first meeting of the XFRML Steering Committee took place in the offices of the AICPA.

Source: Eric E. Cohen, 8th Bryant University XBRL Conference, October 2008, Washington D. C.

Another interesting observation from the XBRL citation analysis is that the academic community was engaged at early stages of XBRL development and as early as 2001 XBRL related articles by academics appeared in professional journals. During the 1998-2008 decade there were 114 XBRL-related articles published in academic journals including *The Accounting Review*, *European Accounting Review*, *Journal of Accounting and Public Policy*, *Accounting Horizons*, and *Journal of Information Systems*. Top two journals publishing XBRL related articles in this decade are *International Journal of Digital Accounting Research*, and *The Journal of Government Financial Management*. Perhaps this is a moment in the contemporary history of accounting profession where the academic community was fully engaged in development and direction of a new technology in business reporting that would ultimately impact how financial reports are prepared, produced, filed with regulators, and made available to the investing community on a real-time basis. Table 1 provides a list of 114 journals.

Obviously large accounting firms and software companies were active participants in the XBRL development and invested much resource in this venture. It is also interesting to look at accounting firms and software developer noted in journal articles. It appears that PricewaterhouseCoopers and Microsoft are dominating names in XBRL articles published in the last decade. It should be noted that other software companies are directly involved in making XBRL specific tools and applications.

Also in terms of number of XBRL-related articles written during last decade, it appears that there has been a steady increase in number of articles written during this time with exceptions 2007 and 2008; see Tables 3 and 4. There is a dip in 2007 in both tables, and a significant

increase, almost by 50 percent, in 2008. It is relatively easy to explain the increase in 2008, it was primarily due to much attention from the U.S. Securities and Exchange Commission (SEC) to fund the US XBRL GAAP taxonomy project and set time table for XBRL adoption by SEC filers. It is not easy to explain a dip in 2007 in Tables 3 and 4, was it calm before the storm? Table 5 provide totals for all occurrences of XBRL as part of the title or abstract in XBRL-related articles during this decade. Table 7 provides information on all journals published XBRL article, as XBRL was part of the title. Considering that XBRL reporting is required by most SEC filers starting in 2009, the academic community has been proactive in assessing this new reporting standard and there is a trail of research to document.

This study provides preliminary results of analysis of over 3300 articles. The study used “Proquest” and “EBSCO” databases and thus limited in scope, though such databases are relatively comprehensive. There has been no attempt to relate the findings to efforts by the IASB in the area of XBRL. Also, XBRL and XBRL GL were not separately analyzed. We hope the next version of this paper to be more comprehensive..

Table 1: XBRL Appearing in Journals

Journal	Number
International Journal of Digital Accounting Research	14
The Journal of Government Financial Management	13
The Journal of Corporate Accounting & Finance	11
Journal of Information Systems	10
Managerial Auditing Journal	8
Accounting Horizons	4
International Journal of Disclosure and Governance	4
Accounting, Auditing & Accountability Journal	3
Australian Accounting Review	3
Information Management Journal	3
Journal of Information Systems Education	3
Information Systems Control Journal	2
Journal of Property Management	2
Journal of STEM Education : Innovations and Research	2
Accounting and Business Research	1
Behavioral Research in Accounting	1
Canadian Journal of Administrative Sciences	1
European Accounting Review	1
European Journal of Innovation Management	1
International Journal of Accounting Information Systems	1
International Journal of Information Management	1
International Journal of Intelligent Information Technologies	1
International Journal of Management	1
International Journal of Technology Transfer & Commercialisation	1
Journal of Accounting and Finance Research	1
Journal of Accounting and Public Policy	1
Journal of Applied Management Accounting Research	1
Journal of Construction Accounting & Taxation	1
Journal of Database Marketing	1

Journal of Electronic Commerce in Organizations	1
Journal of Emerging Technologies in Accounting	1
Journal of Enterprise Information Management	1
Journal of Financial Crime	1
Journal of Global Information Technology Management	1
Journal of HRCA : Human Resource Costing & Accounting	1
Journal of Intellectual Capital	1
Journal of Microfinance	1
Journal of Organizational Change Management	1
Journal of Organizational and End User Computing	1
Journal of SMET Education : Innovations and Research	1
Journal of Technology & Science	1
The Accounting Review	1
The Journal of Bank Cost & Management Accounting	1
The Journal of Business Forecasting Methods & Systems	1
The Journal of Business Strategy	1
The Journal of Investment Compliance	1
Total	114

Table 2: Accounting Firms and Software Companies Noted in Journals

KPMG		PWC		EY	
Title	Abstract	Title	Abstract	Title	Abstract
3	14	25	99	0	19
Deloitte		Grant Thornton		BDO	
Title	Abstract	Title	Abstract	Title	Abstract
0	19	0	19	0	12
UBmatrix		Rivet Software		Microsoft	
Title	Abstract	Title	Abstract	Title	Abstract
15	27	25	8	55	177
EDGARfilings		Hitachi		CoreFiling	
Title	Abstract	Title	Abstract	Title	Abstract
2	2	18	21	24	18
Fujitsu		DecisionSoft		SAP	
Title	Abstract	Title	Abstract	Title	Abstract
11	16	2	16	0	22

“Title” means XBRL in the title of the article

“Abstract” means XBRL in the abstract of the article

Table 3 Publications with XBRL Included in Title of Article

Year	Number
2000	45
2001	67
2002	74
2003	86
2004	83
2005	141
2006	164
2007	151
2008	267

Table 4 Publications with XBRL Included in Abstract of Article

Year	Number
2000	58
2001	58
2002	70
2003	84
2004	83
2005	114
2006	150
2007	113
2008	224

Table 5: Publications with XBRL included in Title or Abstract

year	number
2000	173
2001	177
2002	228
2003	243
2004	309
2005	378
2006	550
2007	543
2008	731

Table 6: XFRML Was Noted in Articles (Early Years of XBRL (XFRML))

year	number
1999	15
2000	26
2001	8

Table 7: Published Articles With XBRL in the Title

Journal	Number
International Journal of Digital Accounting Research	4
The Journal of Government Financial Management	5
The Journal of Corporate Accounting & Finance	2
Journal of Information Systems	3
Managerial Auditing Journal	1
Accounting Horizons	1
International Journal of Disclosure and Governance	1
Australian Accounting Review	1
Information Management Journal	1
Information Systems Control Journal	2
Journal of STEM Education : Innovations and Research	1
European Accounting Review	1
International Journal of Accounting Information Systems	1
International Journal of Technology Transfer & Commercialisation	1
Journal of Accounting and Finance Research	1
Journal of Emerging Technologies in Accounting	1
Journal of Global Information Technology Management	1
Journal of Information Systems	3
Journal of Technology & Science	1
The Journal of Investment Compliance	1
Total	33