

USING WEB TECHNOLOGY TO IMPROVE THE ACCOUNTING OF SMALL AND MEDIUM ENTERPRISES. AN ACADEMIC APPROACH TO IMPLEMENTATION OF IFRS

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ABSTRACT: One way of supporting the accounting standard-setting process and to facilitate the access to those standards is through the implementation of modern accounting reporting methods using web technology. In this regard SMEs are under stress of two major factors: implementation of accounting standards and revolution in IT technology. The purpose of this paper is to define the web accounting, explain the implications of web accounting for IFRS and discuss the key features in implementing this form of accounting for Small and Medium Enterprises(SME's). Web accounting is accounting software based on XML technology that stores records and processes accounting transactions using HTTP as its primary communications protocol, and delivers web based information in HTML format and then translated in other formats. Web based accounting, will provide the benefit of cost savings and increasing efficiency. It also will allows employees and external users (suppliers, customers and investors) a real time access to accounting data, translating reports in XBRL format and facilitate adoption of IFRS

Key words: Web Accounting, SMEs, Web Technology, XML, XBRL, IFRS

JEL codes: M10, M 40, M41

Introduction

Nowadays accounting and especially management are facing big challenges. These are the dynamics imposed by the revolution in information technology and by the new requests related to the implementation of international financial reporting standards.

In the literature and practice of accounting, the IT sector has become a supplier of technology, as well as, an accounting software provider, incorporating modes of taxonomy presentation (reporting) of accounting information. Practically this sector helps the accounting system in two areas: developing the accounting software and financial accounting reports and the transmission of them to users. The purpose of the accounting software is to improve the information capture and the processing, and also to report and communicate such information. Things are in the beginning stages due to the complexity of the channel of transmission of information via the internet, where it took a stunning development from fixed internet to mobile browser, like wireless and Web services application in that field.

Researchers and the academic world could not remain insensitive to those challenges as these circumstances are observed amending the approaches in researches of accounting. As other authors have mentioned, the accounting system moves into an area where the communication language will be XML. The strength of this language is that it can be adapted to understand the various forms of explicit object by using reference standards: Bonsón, E. Cortijo, V., & Escobar, T. (2009). Other authors (Pushkar, M., Ripple, S., & Sachenko, S. 2007) have pointed out that the

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accounting profession is becoming more and more intellectual than having been a transition to a rapid transformation to other areas such as the IT.

Murthy, U.S. and Groomer, S.M. (2004) have mentioned that “the future accounting systems are likely to be built using XML technologies, incorporating both a closed (proprietary) set of XML tags for internal reporting purposes and open extensible business reporting language (XBRL) tags for external reporting.”

IFRS and dynamic of business market has put pressure on accounting information system to adopt new rules and practice. These are not possible without implication of IT, with new arms, that are web technologies. With the help of web technology, we think, there are real way to adopt IFRS and survive in the present market dynamic. All the accounting standard are posted and translated using XBRL and web technology. We consider that accounting technologies, IFRS and the Web Technology are close interrelated.

On the other hand accounting rules and practices are made challenges to adapt to new conditions posed by web technology. Dynamic and real time recording and reporting of accounting information are terms well known today to describe accounting.

There's not way to work without adoption of IT technology. Manual posting of accounting information is becoming increasingly difficult and past due.

We found three important research areas relating to our study. The first is studying the accounting challenges resulting from the introduction of financial reporting standards (IFRS). The second one is related to studies about web accounting specially for SMEs. Finally, the third segment concerns implementing web accounting model for SMEs through the introduction of web accounting.

Research questions and methods

The objectives of this study were to answer the following questions: What means the new system of web accounting and how such system can work for SMEs? How Web accounting system can influence the adoption of IFRS by SMEs? What factors might influence the adoption of Web Accounting in SMEs? We answered the first question based o literature review and tried to create an academic web accounting software to show how such system can operate to SMEs. We do that trough designing software and tested to a SME's.

Testing to one SME has few limitations due to scarcity of data and software used. For that reason finding may be irrelevant in some area. The answer to the second question is based on the study of literature in the field and on analysis of opportunities related to the introduction of web accounting for financial reports translation in XBRL. Finally a study on a questionnaire made to a total of 48 SMEs in Canada are used to answer to the thirty questions. This questionnaire was designed primarily to those responsible for implementing accounting systems (managers, owners and accountants from SMEs) as well as accounting information users (managers, owners, investors).

Given the characteristics and complexity of such an interview, we do not deny the fact that the answers to some questions and cooperation could be influenced by subjective factors. Therefore the generalization of research results may have certain limitations.

Literature review

1. Challenges of introduction of International Financial Reporting Standards (IFRS) for SMEs

In the literature recently, accounting standards have gained great attention from both researchers and the academic world as well as by accounting practitioners and users of accounting information. This is because, both parties: researchers and practitioners - users of accounting information, found that these standards could well influence their work.

On one hand, researchers may have more access to data and accounting information and on

the other hand, practitioners should be able to use accounting information in a uniform and their beneficial activity.

KC Chakrabarty (2011) use three fold to explain the importance of accounting standards: The first level provides standardization of accounting rules and the elimination of incomparability of financial statements as an entity both within and between entities. In the second level facilitates presentation standards unite high quality, transparency and comparability in financial reports. In the third row standards reduce accounting alternatives and therefore eliminate the subjective element in the financial statements. Other authors emphasize the importance of standards in so-called: "The benefits of implementing accounting standards". At the recent conference in Tokyo, the introduction of IFRS has been raised benefited in two directions: first that the capital market benefits and second benefits for companies. The first category were raised following benefits: credibility of local markets for investors, capital migration easier, capital allocation in a efficient comparability regardless of local obstacles, facilitate education and global practice.

In the second part highlighting the benefits for companies: low capital IT system integration, strengthening the capital easier, one set of accounting, and helping to increase international capital, understanding seller's accounting reports, clients and subordinate companies from different countries.

As established in the G20 Summit in September 25, 2009, the main objective of IFRS is to establish a single set of accounting standards even if at first will be some differences between capital requirements and accounting rules. Another important recommendation was that efforts to increase towards reducing complexity in accounting standards and to improve the presentation of standards to enable users of financial reports to assess risk better. In this study is not the place to make a detailed analysis about the importance of IFRS implementation of objectives and rules. There developed for this study and conferences under the IASB. Our goal is to highlight here some studies on the IT infrastructure needed to implemntarea IFRS.

Several studies have emphasized that the purpose of IFRS is to present information in a uniform accounting being based on a common interpretation of accounting principles that led to the preparation of financial statements.

To be understood and applied unified accounting information presented using IFRS, have published in a standard format.

SMEs have gained significant attention by those in charge of implementing IFRS. In this respect it is worth stressing the IASB and EU adoption of IFRS for SMEs, in 09 July, 2009. This is an important step towards implementation of IFRS for SMEs. As noted in the official site of IFRS (<http://www.ifrs.org/IFRS+for+SMEs.htm>): "The IFRS for SMEs is a self-contained standard of about 230 pages tailored for the needs and capabilities of smaller businesses. Many of the principles in full IFRSs for recognizing and measuring assets, liabilities, income and expenses have been simplified, topics not relevant to SMEs have been omitted, and the number of required disclosures has been significantly reduced.". The same website mentions the benefits that implementation of these standards might bring: Improved comparability of accounts for users; enhance the overall confidence in the accounts of SMEs, and reduce the significant costs of maintaining standards involved on a national basis.

High quality of accounting data comparable among different companies, to support decisions of a varieties of users including management teams, trough creation of a large data base, are restricted to a small number of companies because it is very costly and time consuming (SME ACCOUNTING STANDARDS – Answers to questions submitted by IASB on Staff Questionnaire on R&M modifications 30 June 2005 page 5).

For that reason the standardization of accounting and financial information get an important support from academic researchers and developers of accounting software (Briciu S., Ganfaleanu I., Groza C.)

There are not many studies on the implementation of IFRS for SMEs. This is due to lack of

data or the high cost involved in the current implementation of IFRS, or just because the implementation of IFRS to unlisted companies is not required by law.

Most studies are conducted under IFRS Foundation, non-profit organization responsible for developing international financial reporting standards.

IFRS Foundation is responsible for XBRL activities, which aim to facilitate the information exchange between market constituents. They are developing the IFRS Taxonomy, which is the representation in XBRL of IFRS, including International Accounting Standards, Interpretations and concepts for Small and Medium-sized Entities (SMEs). The IFRS Taxonomy contains tags for all IFRS disclosures. By providing the IFRS Taxonomy, the IFRS Foundation seeks to address the demand for an electronic standard to transmit IFRS financial information with XBRL.

1.1 IFRS for SMEs and XBRL an interactive data approach

Dale Waldt (2004) defines XBRL as "a language for capturing Financial Information throughout the business' information eventually processes that will be reported to shareholders, banks, regulators, and other parties." The same author states that XBRL creates a vocabulary to describe exactly which bits of information are included in the report, even taking into account the jurisdictional rules and practices.

Thus many researchers and users of accounting standards draw attention to compatibility of existing IT solutions with new requirements imposed by IFRS.

In this context comes XBRL - as part of the adoption and implementation of IFRS.(XBRL and IFRS, IFRS Conference, Tokyo, 29 July 2010, Olivier Servais – Director, XBRL Activities).

At this conference the author highlights the main characteristics of the XBRL, namely:

- XBRL - part of the adoption and implementation of IFRSs
- XBRL is the de facto standard for electronic reporting
- Part of IFRS development (IASB goal to provide high quality standards (IAS 1 par 9))
- Organizing the Presentation of Financial Statements (i.e. true and fair view -Framework 46)
- Codification of concepts (help in convergence)
- Improve access for users to financial information
- Could increase the users range (i.e. translation)
- Could ease IFRS conversion, understanding and implementation
- Quality-assurance, maintenance and coordination of the IFRS Taxonomy.

Many studies have been made on the application of XBRL. In this regard worth mentioning Callaghan, J., & Nehmer, R. (2009), Chen, H., & Sun, W. (2009) web model, or web services auditing and assurance: Cohen, EE (2004), Plumlee, RD, & Plumlee, MA (2008). Debreceny, R., Piechocki, M., Feldene, C., & Gräning, A. (2009), analyzes XBRL as a solution for the government to help improve transparency. The relationship between transparency in accounting and information system through the use of XBRL has been analyzed by Hwang, JS, Leema, CS, & Moon, HJ (2008), Roohani, S., Furusho, Y., & Koizumi, M. (2009).

Another very interesting approach that attracted our attention was that from the perspective of Business to Business (B2B) of authors Guldedge, T. (2002). They analyzed the benefits of using EDT and other forms of electronic business to business communication and system improvement companies' transactional tooth.

When talking about XBRL many researchers consider essential that XBRL enables interactive approach to accounting information. The SEC's Web site defines interactive data as "using technology to provide investors with quicker access to the information they want, in a format they can most easily use." More specifically, the Web site notes that "interactive data allows the creation of documents that are machine-readable, so that computers can quickly extract the desired data" (T. Church, Y. Newman <http://www.iasplus.com/dtppubs/0806whyxbrl.pdf>).

Most importantly, the role of XBRL is to apply a tag to each item in the statements (reports) financial. This tag has a great significance because it can be read by most of their software because

it is similar to the XML tag.

To translate the financial statements in XBRL, SMEs have three alternatives: in house, outsourcing or a combination of this two.

Each of these options has advantages and disadvantages in terms of cost of acquisition of software-emitting tags, personnel training and expert advice. For this reason there are not so many SMEs able to use XBRL in reporting financial data.

In a recent study on XBRL, Haley, K., 2009 cautions that in years to come, accountants will have to become more familiar with accounting software and the use of taxonomies, tags, Web documents (instance document) and their validation. Surprising statement because until recently, accountants were seen as persons skilled to registered accounting events helped by certain machines to ease the calculation.

2. Web Accounting and XBRL

Just as other authors have noted, the accounting system, moving to an area where the language of communication is XML. The strength of this language is that it can be adapted to understand the various forms of explicit objective by using reference standards: Bonsón, E. Cortijo, V., and Escobar, T. (2009). U. S. Murthy, S.M. Groomer (2004) notes that "future accounting systems are likely to be built using XML technologies, incorporating both a closed set tags for internal reporting purposes and an open XML tags as extensible language tags (XBRL) used for external reporting of the business".

T. Nesbit (2009), defined web accounting for SMEs, based on concept of outsourcing information systems services and made it clear that web-based accounting information system is an application that is delivered via the internet. The same author explain the design of data base, based on multiple users of the data and information need in a "global view" and proposed a model of web-based accounting on two parts: Business and Technical.

Few studies have been conducted to highlight the relationship between Web accounting and XBRL. This is due to the relatively new for these two areas.

Are mentioned here David E. Magolis and co. (2011) that make an analysis of the possibilities of integrating XBRL into Accounting Curriculum. B. Marshall and co. (2010), making an analysis of accounting information flow visualization using XBRL. Both studies were applied in the educational system.

What we found is that, until now, the flow between XBRL and accounting information system was in one direction. Accounting information presented in the form of financial statements, were captured in XBRL, using different capture software for tag elements using XBRL software and liked to the accounting standards (IFRS). From this stage the financial statements get a uniform format that can be understood by different users in a unit mode, because it uses the same language.

The drawback of this flow is that the data need to be introduced again in the accounting system (tag) in order to be able to be translated into XML, and here in XBRL.

Another problem that arises is whether the data presented in XBRL are sufficient for a detailed analysis and complete financial situation, or needs other details that intentionally or incidentally can be forgotten? For reporting using XBRL, are subject only balance sheet, income statement (loss) and statement of cash-flow.

XBRL, also contains tags that allow viewing of accounting information disclosure notes to the financial reports presented.

Results analysis

1. Web accounting for SMEs - definition

As other researchers mentioned, web accounting must have a distinct definition in order not to be confused with applications, software or web at a larger scale. (T. Nesbit 2009)

Therefore we can say that the Web accounting has emerged as a necessity to modernize accounting

and to integrate it as a function of business (Groza C., Briciu S., Cordos M.A, 2010).

There are several ways to describe accounting using web services or XML-based accounting system.

T. Nesbit, emphasize the idea of Internet to describe this software. We emphasize the idea of web. We called here Web Accounting - a term that we consider most appropriate to describe the use of Web services in accounting.

We have not yet found an explicit definition of Web Accounting. Based on what we thought other authors mentioned in this field and the definition given by Wikipedia (Multilingual Web), to web services, we concluded that the most appropriate definition of the web accounting, is software that records, stores and processes accounting transactions, using XML as a transport and storage technology, HTTP as the primary communications protocol, and present information in HTML and other format.

Definition of course is susceptible of interpretation, similarities and confused with other definitions of Web information system. What we wanted to highlight, however, is the different accounting information system developed using web technology.

What makes this system to be firmly anchored in business is that it can be used and accessed in real time so whatever time and place for conducting business process. Another important feature is that it can use different channels and devices to transmit information with one condition: be able to display a web page.

Finally, the main feature of this system, used for transport and storage of accounting information - XML, the same that is used by the main languages in business reporting: XBRL, ebXML and UBL. To test the system and highlight the features mentioned, we built software and we implemented to a company. We built the software using PHP programming and MySQL open source database. The software application was build to do most of the accounting features: Invoices, Bill entry, Inventory, Bank, Cheques, Accounts Receivable, Accounts Payable, Journal Entry, and Financial Statements.

The system is designed to be accessed from everywhere at any time. Most of it is built to work easy and using features of the web pages. Users don't need a thorough knowledge of accounting, only basic knowledge of computer use and program. Most reports have the opportunity to be edited in HTML, Excel, XML and some in PDF.

Application characteristics are similar to many accounting applications which make those who use this application to be quickly familiar. The application can be accessed simultaneously by the operator and accounting or management. Work near the speed of application made by pretty fast computer with IE, Mozilla, and Opera. Backup to the database, can be done either locally or at the server level. Figure 1, emphasize how the application works.

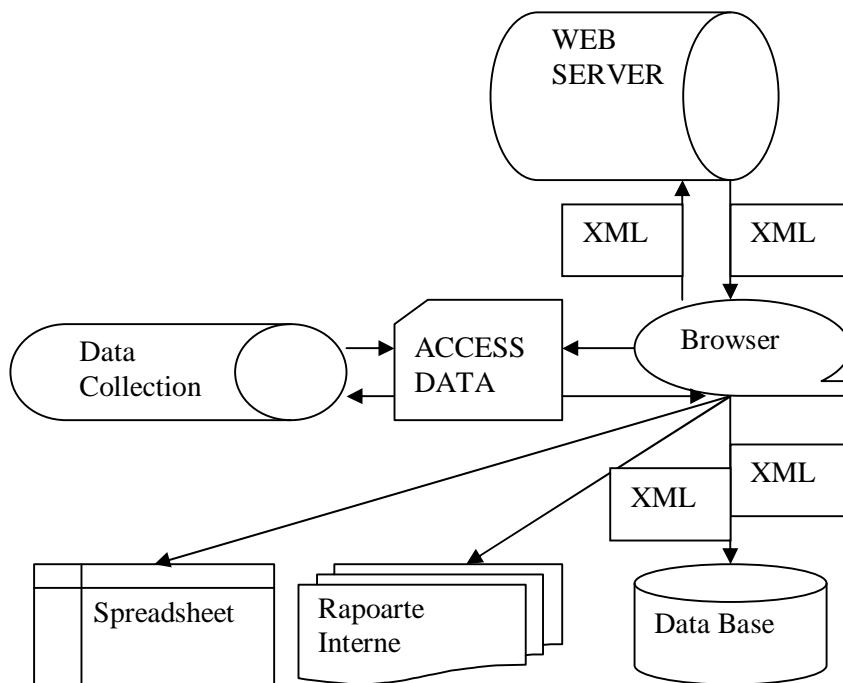


Fig. no. 1

The application is designed especially to meet the needs of business and accounting in particular for SMEs. We tried to implement different Chart of Accounts, depending on the specific of business activity. Meanwhile we tried to implement some specific forms of marketing online and integrated with accounting function. After testing we found no differences from the desktop. Even the processing speed is not a great distance.

In an article published in ASA Research, J. Carlton Collins, found at least 10 benefits of adopting Web Accounting and only 5 disadvantage Web Accounting (http://www.asaresearch.com/articles/web_accounting).

And if most problems are based on the operation and security of database, we believe that the future will prove that this system is a system in itself as it will be for the future the Internet. Moreover the same author says that this system will "dramatically change the face of accounting software in the years to come, opening the floodgates to a wide range of changes..."

Integration of XBRL to Web Accounting

Figure no. 2 shows how this works using the dive schedule and XBRL-GL.

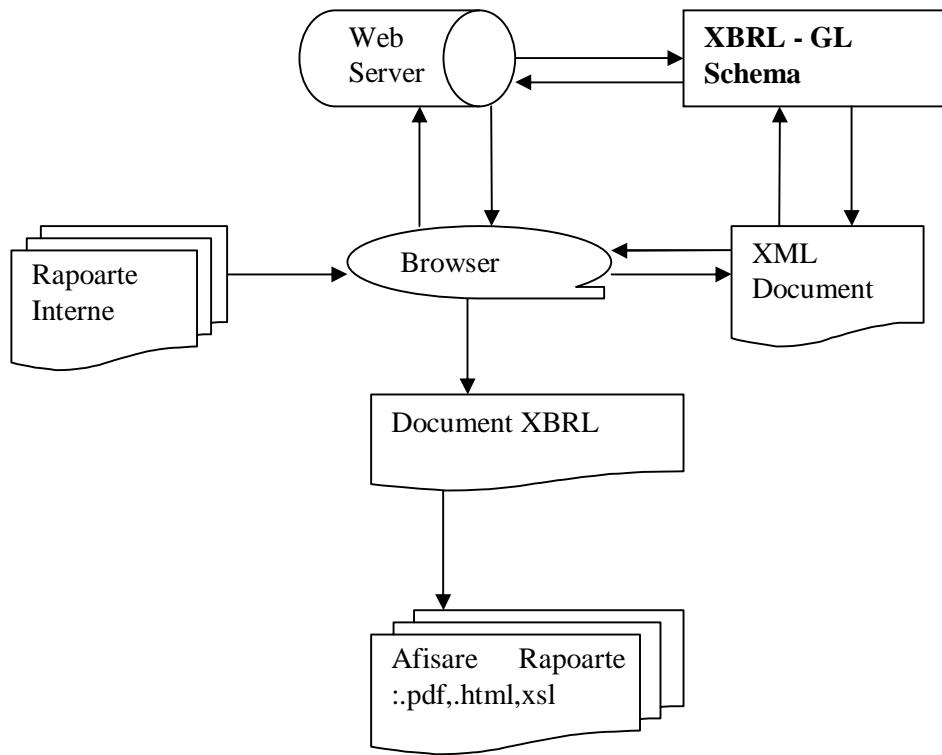


Fig. no. 2

Internal reports produced by accounting software in accordance with accounting data collected and processed. To note that not all reports are public and therefore need not be published. Many of these have strict internal use to meet the needs of management. In this way, data is translated and transported to the module XML documents using software written in PHP, a browser that can be any tool that can display a web page. This practice is converted into XML and preparing their reports to be checked and transported in the system. In this way there is a first operation check to see if "instance document" is well established meaning in terms of XML is well written and not errors. As follows, XBRL-GL, will check with the scheme documents, the document correspond to the standard XBRL-GL, which takes place validation and XML document is stored on Web server via the Internet.

In the second stage demand accounting reports from web server module, which will validate XBRL-GL module, where the data are consistent with the schemes prepared by the accounting standards, they are translated using the XBRL language and are transformed into XBRL reports and then displayed in various formats on request such as PDF, XSLT or html. From here users can request any information published, having the guarantee that they meet the accounting standards. Each module will have web services that provide data on request, on how information are processed and executed in that module. To be mentioned that once the data arrived in this module, you can access anywhere and anytime because they are accessible via the internet 24 hours.

What we think, about the future of Web accounting is that, this software will allow XML instance documents to be translated in XBRL, using IFRS standards and from here to be accessed by users. In others words will be not necessary software special designed to translate in XBRL. This will facilitate both the work of accountants and users of accounting information, not to mention the costs involved. How is this possible? With the development of financial reports tags to facilitate this translation. That means the company's financial reports, using IFRS will be stored in their website and not in SEC or other organizations.

Conclusion

In our opinion, accounting, using web services will allow implementation of Reporting Standards (IFRS) for SMEs. Such a system can bring enormous benefits to these entities considering their characteristics and the overall economy. This system is easy to access, reduced costs for maintenance and use, requires little technical knowledge and has extensive application possibilities. It is an open system a large number of integrated solutions for both internal and third parties in order to extend functionality and to suit specific needs.

The system has great possibilities of integration with other applications, especially Excel for analysis and reporting phase and the importance of the information system. At the same is likely to develop business intelligence in particular by accessing timely accounting information by management. Finally but not least, this system allows easy integration and transition to XBRL reporting system and the transition to EDI (Electronic Data Interchange).

References

1. Bonsón E., Cortijo V., Escobar T., 2009. Towards the global adoption of XBRL using International Financial Reporting Standards (IFRS), International Journal of Accounting Information Systems, 2009, 10, 1, 46-60
2. Briciu S, Groza C., Gânfalean I., 2009. International Financial Reporting Standard (IFRS) will Support Management Accounting System For Small And Medium Enterprise (SME)?, *Annales Universitatis Apulensis Series Oeconomica*, 2009, vol. 1, issue 11,pages 32
3. G20 Summit in September 25, 2009
4. Callaghan J., Nehmer, R., 2009. Financial and governance characteristics of voluntary XBRL adopters in the United States, International Journal of Disclosure and Governance, 2009, 6, 4, 321-335
5. Carlton Collins, J, 2010, Web-based Accounting, http://www.asaresearch.com/articles/web_accounting
6. Chen H., Sun W., 2009. Application and neediness of extensible business reporting language, Proceedings - 2009 International Forum on Information Technology and Applications, IFITA 2009, 2009, 2, 409-412
7. Church T., Newman Y., <http://www.iasplus.com/dtppubs/0806whyxbrl.pdf>
8. Cohen E.E., 2004. XBRL's global ledger framework: Exploring the standardised missing link to ERP integration, International Journal of Disclosure and Governance, 2009, 6, 3, 188-206
9. Debreceny R., Piechocki M., Feldene C., Gräning A., 2009. Design and standardisation of XBRL solutions for governance and transparency, International Journal of Disclosure and Governance, 2009, 6, 3, 224-240
10. Groza C., Briciu S., Cordos A.M, 2010. Challenges of management accounting of small and medium enterprises (smes), Revista Economică, nr. 6(53)/2010 vol I, Universitatea Lucian Blaga, Sibiu
11. Gulledge T., 2002. B2B eMarketplaces and small- and medium-sized enterprises, Comput.Ind., 2002, 49, 1, 47-58
12. Haley K., 2009, Accounting Information Systems- XBRL, Research Paper
13. Hwang J.S., Leema C.S., Moon H.J., 2008. A study on relationships among accounting transparency, accounting information transparency, and XBRL, Proceedings - 3rd International Conference on Convergence and Hybrid Information Technology, ICCIT 2008, 1, 502-509
14. IFRS Conference, Tokyo, 29 July 2010, Olivier Servais – Director, XBRL Activities

15. Magolis David E., Mark Law, Mark L. Usry, Gary Robson, A. Blair Staley, Wilmer Leinbach, Integrating XBRL into the Accounting Curriculum: A Process
16. Flowchart, 2011. ACETJournal, Vol.6.
17. Marshall B., Mortenson K., Bourne A., Price K., 2010. Visualizing Basic Accounting Flows: Does XBRL + Model + Animation = Understanding?, *The International Journal of Digital Accounting Research* Vol. 10, pp. 27-54 ISSN: 1577-8517
18. Murthy U.S., Groomer, S.M., 2004. A continuous auditing web services model for XML-based accounting systems, *International Journal of Accounting Information*
19. Nesbit T., 2009, Web-Based Accounting Information Systems for Small Business: A proposed Model, Forums being presented at the 2009 AFAANZ Conference
20. Plumlee R.D., Plumlee M.A., 2008. Assurance on XBRL for financial reporting, *Accounting Horizons*, 22, 3, 353-368
21. Pushkar M., Rippa S., Sachenko S., 2007. Intellectualization of accounting system: 2007 4th IEEE Workshop on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications, IDAACS, 536-538
22. Roohani S., Furusho Y., Koizumi M., 2009. XBRL: Improving transparency and monitoring functions of corporate governance, *International Journal of Disclosure and Governance*, 6, 4, 355-369