XBRL PASSPORT: A PILOT MODEL FOR WEB FINANCIAL REPORTING IN THE GREEK CAPITAL MARKET

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ABSTRACT

Financial markets worldwide have experienced dramatic changes since the mid-1990s. A growing number of financial institutions are reporting some level of financial information on their Web sites. However, it is not clear if the stakeholders are fully satisfied with this Web-based data. It has been claimed that eXtensible Business Reporting Language (XBRL), an XML vocabulary for business reporting, is capable of introducing greater integration and transparency into financial information systems.
The purpose of this research is to describe the effects that the use of the eXtensible Business Reporting Language might have on Web Financial Reporting, investigating the implications of implementing an XBRL project in the Greek capital market. Particularly, a pilot model for Web Financial Reporting using the eXtensible Business Reporting Language was built and evaluated. The results reveal that XBRL aid financial statement users by improving regulator's choices for reporting financial statement information, and the transparency of that information. Consequently, the study extends the prior literature and experience, introducing XBRL for the first time in Greece.

Keywords: EXtensible Business Reporting Language (XBRL), Web Financial Reporting, Greek Capital Market

JEL classification: F37, M15, G15, Y10.

1. INTRODUCTION

In today's dynamic business environment, there is a need of using new software tools that will redefine the "financial reporting" archetype (Jones & Willis, 2003). XBRL is a metalanguage, based on XML, and its objective is to facilitate the automatic exchange of information between software applications (Bonson, Virginia & Tomás, 2009).Previous surveys (Xiao, Jones and Lymer, 2002; Debreceny & Gray, 2001; Lymer at al., 1999) indicate that Web Financial Reporting in the largest financial organisations reproduces the printed financial statements in an electronic format such as Adobe Acrobat, and uses some hypertext markup language (HTML) formatting and limited data down-loading for further analysis.

XBRL is gaining prevalent recognition, support and advocacy from a range of key constituencies, including the accounting, software, regulatory and industrial sectors (Jones & Willis, 2003). It also permits information producers to re-use information in their systems for multiple reporting purposes without re-keying (Williams, Scifleet and Hardy, 2006; Chang & Jarvenpaa, 2005). More specifically, it provides data in an interactive, context-rich format that users can download directly using more skilled software (Bartley, Chen & Taylor, 2010).

As an XML-based standard, XBRL is designed to provide a set of textual tags for marking various parts of a document to identify accounting numbers relevant for external financial reporting (Bovee et al, 2004). Since the tags are computer-readable, information submitted by report preparers can be automatically sorted, parsed, organised and edited by users, thus decreasing the cost of using information and increasing its value (Arnold et al, 2010).

This paper investigates the effect of eXtensible Business Reporting Language on the Web-enabled Financial Reporting. As it is demonstrated in previous research, the efforts surrounding XBRL have carried on for more than half a decade already. An important amount of research has been engaged with the challenge of XBRL and examined the implications that XBRL has, or will probable have, on Web Financial Reporting (Hoffman, Pippert & Walenga, 2005; Boritz & Won, 2004; Fahy et al, 2005; Brown & Willis, 2003; Hannon, 2003).

The critical element is the ability of XBRL to provide accessible, reliable and timely information (Jogani, 2005; Cunningham, 2005; Graziano, 2002; Coffin, 2001). A significant issue to answer, which constitutes the research question of this paper, is:
Is XBRL capable of re-engineering the current processes in Web Financial Reporting?
The objective of applied study is to produce research that is applicable in the real world (Galliers & Land, 1987). One approach, that could fit the dimensions of XBRL technology, is the constructive approach. As a constructive approach, this study can serve as a starting point for systematic examination of XBRL implications on Web Financial Reporting and implementation of XBRL projects in Greece. Furthermore, the study attempts to describe the effects that the use of the XBRL has on Web Financial Reporting, investigating the implications of implementing an XBRL project in Greek investors and analysts.
The following section describes the role of XBRL in web financial reporting. Section 3 discusses the research related to XBRL. Sections 4 and 5 analyses the architecture and implementation of the model. Section 6 discusses the evaluation of the model, the research design and the evaluation results. The final section of the paper concludes the main findings and reports the study's limitations.

2. The role of XBRL in Web financial reporting

The Web is a giant, loosely interlinked data warehouse that contains an exceptional amount of information (Debreceny & Gray, 2001). Any corporation in the world wishing to built international profile or tap international sources of funds must have a corporate Web site that includes an investor relation component (Lymer & Debreceny, 2003). Additionally, from a demand perspective, corporate web sites should satisfy the increased reliance and need of stakeholders for periodic and annual financial statements and

also for press releases, speeches, investor conference calls as well as links to products and other information (Richardson & Scholz, 2000; Ettredge, Richardson & Scholz, 2000). Different stakeholders engage "Web Mining" in an order to extract or determine relationships in the financial information and business performance data, available on the Web (Etzioni, 1996). The main concern is not just the information made publicly available to investors, but also the form in which it is revealed. Many practitioners focus their attention in the prominence with which different kinds of information are displayed in financial statements (Hirshleifer & Teoch, 2003). The exchange of information in current financial reporting is transferred in a variety of non-interchangeable formats, like traditional print, portable document format (PDF), Web pages (HTML) or spreadsheets (Doolin & Troshani, 2004; Teixeira, 2005).

XBRL can provide a reliable solution and ease the flow of financial data worldwide, under a multinational economic environment where capital and information mobility is as quick as the speed of light (Apostolou & Nanapoulos, 2009). XBRL is a derivative of XML (eXtensible Markup Language) and as such it takes advantage of the 'tag' notion which associates contextual information with data points in financial statements (Doolin & Troshani, 2007). This language uses XML Schema to provide users with a standard format in which information can be exchanged, enabling the automatic extraction of information by software applications (Fahy et al, 2003). In typical usage, XBRL consists of an instance document, containing primarily the business facts being reported, and a collection of taxonomies (called a Discoverable Taxonomy Set (DTS), which define metadata about these facts, such as what the facts mean and how they relate to one another (Grosu et al,2010).

3. Research Related to XBRL

Research on the adoption of innovations is necessary in order to understand their significance and their implications for management and organisations (Doolin & Troshani, 2007). From a theoretical perspective, many researchers have tried to examine, the process, development and the numerous benefits on internal and external reporting. (Doolin & Troshani, 2004; Li et al,2006; Williams, Scifleet and Hardy, 2006;Isenmann et al 2007; Buys, 2008; Florescu & Tudor,2009; Selamat & Rawashdeh ,2010).

Most of the research related with XBRL has focused primarily on organisations, its usage and little insight into the determinants of XBRL adoption and usage between users of web financial reporting (Hodge, Kennedy & Maines 2004; Troshani & Doolin, 2005;Selamat & Rawashdeh , 2010). Pinsker & Li (2008) examined the XBRL adoption in Australia by interviewing four business managers involved in XBRL adoption in Canada, Germany, South Africa, and the US. Pinsker (2008) uses technology acceptance model (TAM) as well as competing theories research framework in an effort to provide a better understanding of XBRL (as the continuous disclosure technology example) adoption intentions of non XBRL-managers. Participants believed XBRL is useful for their jobs and a very easy process to be learned. Doolin & Troshani (2007) analyse XBRL adoption in Australia, through a synthesis of a technology-organisation environment adoption model that explains the XBRL innovation outcome.

However, usage between users of web financial reporting is the other important topic in the research area. Previous researchers

have been studied the user interface mainly from the perspective of comparison between XBRL users and PDF users (Pinsker, 2007; Ghani et al, 2009). Hodge, Kennedy & Maines (2004) use the context of recognition versus disclosure of stock option compensation in an order to investigate whether using an XBRL-facilitating technology improved nonprofessional investors' acquisition and integration of web financial information in investment decisions. Arnold et al (2010) investigate alternative structures for the Management Discussion and Analysis (MD&A) comparing the standard format of the corporate annual report currently used by companies to a "tagged" format that mimics XBRL using a dedicated web site and process-tracing software. The results suggested that there is much more efficiency and effectiveness implications into professional and nonprofessional investors as they spend less time viewing the risk information. Amrhein, Farewell & Pinsker (2009) suggest a framework linking the Resource-Event-Agent (REA) model and eXtensible Business Reporting Language Global Ledger (XBRL GL) that enables communication between different systems, internal or external to the organisation. The combination of those technologies within the organisation helps management better understand and improve the organisation and stakeholder community to reuse various information.

Financial Reporting and Auditing Agent with Net Knowledge (FRAANK) is a prototype that extracts accounting numbers from natural-text financial statements available from the SEC (Securities and Exchange Commission) EDGAR repository and converts it into XBRL (Bovee et al, 2004). The evaluation results show that FRAANK is an advanced research prototype that can be useful in various practical applications on the Internet, since it communicates with external information sources over the Internet (e.g., SEC, Yahoo, Quicken, etc.). The implementation of this intelligent agent, tagging in XBRL taxonomy, has the potential to offer many benefits in various decision makers (e.g., investors, creditors, auditors, and managers) as it relieves them from time-consuming part of their tasks, and expeditiously allows them to concentrate on more intelligent aspects of the decision- making process. (Bovee et al, 2004).

Prichard & Roohani (2004) created a prototype public XBRL file repository as a project in a graduate web development course, in an effort to present challenges and opportunities of web financial reporting. The authors discuss the development of the submit module and conclude that it facilitates users to gather a lot of information from (anyone – public access) any location of XBRL documents on the web. Silva & MacDonald (2006) create a tool naming IntelExtra (intelligent agent for extracting information), that provides access to financial information easier and less costly, both for its users as for the companies that produce it. IntelExtra has the ability to extract key financial information presented in tables, and then makes automatically a transition to a fully XBRL-based financial reporting world, without the need to change companies' information systems.

4. Architecture of the XBRL-Passport prototype.

To break the information logjam, a smart client prototype solution has been developed, "XBRL-Passport" (Pilot Athens stock exchange's Statements Source PORTal). The initial goals of the above prototype were as follows:

1. Provide a location that could be used to gather financial data converted to XBRL files for the listed companies in Athens Stock exchange.
2. Create relevant financial data and information ready-for-analysis in Spreadsheet files.
3. Provide the comparison of companies included in the same sector.

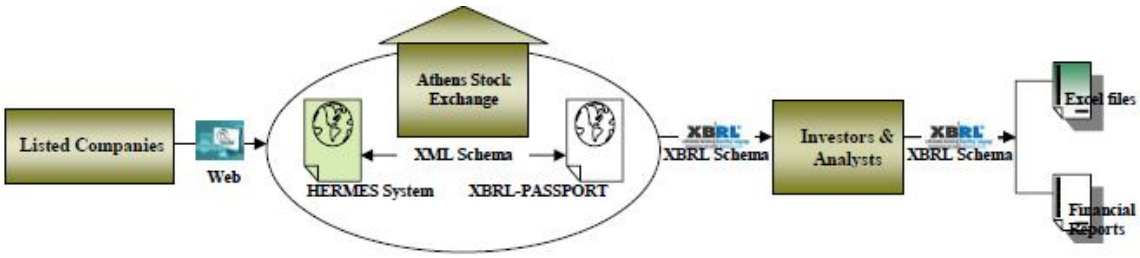
The initial implementation of the model is based on a simple three-layer architecture, consisting of a database layer (MySQL v5.1), a logic layer (PHP scripted), and finally a presentation layer (web application). The prototype model functions as a web application; therefore, it was designed with the help of PHP scripting language. PHP code interpreted by the web server (apache v.2.0 with a PHP processor module) accesses the information stored in the database layer and formulates a response to the user query in HTML form. Then, the generated document is entrenched in the research web site. A content management system (currently Joomla v1.5.22) serves as an environment to the research implementation, offering additional supporting features and an easy way to provide research documentation, links, news and other research related material. It also provides the ability to integrate and support additional tasks such as research surveys, presented all to the visitor in a rationally layered fully integrated environment.

In this initial implementation of the "XBRL Passport" model a search mechanism able to retrieve a set of references to the desired data based on user-selected criteria was created. These references to the appropriate data are presented to the user as links to the desired information. The desired information is presented in HTML format, as XBRL data is embedded within a variety file types such as XBRL, HTML, Excel, Xml or text. Since the web viewing applications to parse XBRL format is limited, as it is currently under development, the format of the presented material is HTML (using XBRL Schema) and not XBRL based. Future Web applications will demonstrate the feasibility of implementing different file types as part of the «XBRL Passport».

5. Implementation of "XBRL Passport"

The implementation of the model in ASE (Athens Stock Exchange)companies provides them with the ability to exchange financial data, which is converted to XBRL files and then upload them to a central database hosted by "XBRL Passport" model. Then, the XBRL database can be available to analysts and investors through the World Wide Web. A graphical representation of the information flow can be analysed by Figure 1 which highlights the significance of information management and distribution after the implementation of the "XBRL Passport" model.

Figure 1: The new organisational schema after the implementation of XBRL technology.



The implementation of the model concentrates more on the benefits of investors and analysts. As far the internal reporting process of a listed company with the XBRL language is concerned, using the pilot model "XBRL Passport" can become the main objective for future research.

The implementation process involves two mainly stages. Firstly, the user-investor has to choose the year that he/she is interested to collect the financial data. After the selection of the year, he/she has two options: a company selection or a sector selection from the list that the system offers. Additionally, the system offers a more advanced search using the index selection. Index selection includes three main indexes: current ratio, ROE and profit margin. This additional criterion helps the user to make a more qualitative examination since it presents companies with the best performance.
In the next stage, XBRL Instance documents is introduced presenting the financial information available from the Greek Statistical & Economic Data Service, (Hellastat S.A.) of the selected company. Considering the fact that, for the elaboration process of these data, programs such as MS Excel are used, "XBRL Passport" is capable of creating ready-for-analysis MS Excel files with XBRL Schema. The additional tools that the system offers are the aggregated representation of the data of the chosen company, the comparison results between the companies of the same sector, the calculation of key financial ratios, as well as, the disclosure footnotes. As it is clear, the presentation of information under the XBRL Schema gives the user great manipulation and data representation abilities.
"XBRL Passport" essentially plays the role of a specialised Web financial information system, as it encloses a dual rendering, which interacts with both its users and its external information sources from the selected listed companies. Through a simple interface, the user has the ability to submit the selection preferred company to the system, and then "XBRL Passport" automatically gives them access to:

1. Financial statements of the companies for all the years included to the database in HTML format.
2. Disclosure footnotes through each company's financial statement.
3. Storage and retrieval of financial statements using the XBRL Schema.
4. Aggregated & comparison results of the selected companies.
5. Calculated financial ratios of the companies.

6. Evaluation of "XBRL Passport"

The face validation was to be performed by subject matter experts (SMEs) in the area of financial management and financial analysis.

In that sense, the survey has targeted final-year students with business background to facilitate the purposes of the survey. Eighty-nine final-year students enrolled in management information systems courses at the department of Business administration of the Technological Institution of Larissa served as substitutes for online nonprofessional investors in the evaluation of the pilot model. Final-year students enrolled in management information systems courses were considered adequate surrogates for decision makers and financial managers in this study for the following reasons.

Firstly, many prior research on information presentation and decision-making, employed students as subjects in their experiments (Song, 2006; Hodge,Kennedy & Maines, 2004; Pinsker, 2004; Sheard & Dick, 2003; Dunn & Grabski, 2001; Shuchat & Giacquinta, 2000; Amer, 1991). Secondly, it is essential to note that the current study is not entirely concerned with the performance of decision-makers in a professional framework, but principally with the interrelationships between information presentation, information management, and information value-added. Furthermore, non professional investors are more possible to benefit from the XBRL technology, than the professional financial analysts, since they apply less-defined valuation models and assimilate financial information in a comparatively unstructured manner (Frederickson & Miller, 2004; Hodge,Kennedy & Maines, 2004).

6.1 Research design

XBRL lies on the field of IS research, which requires a different research approach than it is traditionally employed within the economic research environment. One approach, that could fit XBRL technology, is the constructive approach. The constructive approach can produce both conceptual and technical artifacts (Iivari, 1991) and is typically based on existing research knowledge and new technological advances (Kasanen, Lukka & Siitonen, 1993).

The research in this study is positioned among design science and exploratory research. Particularly, a pilot model for Web Financial Reporting using the eXtensible Business Reporting Language was built and evaluated. The use of a prototype-Pilot model is highly recommended in situations where there is a need for experimentation and learning before commitment of resources to development of a full-scale system (Alavi, 1984), especially within the periphery of Greece.
The current study is based on a growing body of research on eXtensible Business Reporting Language, initiated by Hoffman and Strand in 2002. An increasing base of web financial information has created a demand for XBRL, motivating the evaluation of the functioning of this pilot model. Innovation-evaluating approaches seek to evaluate the usefulness of a tool for a specific task (Jarvinen, 2001). In this case, the purpose is to evaluate XBRL as a web financial reporting tool, by creating a pilot model for evaluation by a number of subject matter experts, i.e. potential end-users of the application. The survey includes elements of both exploratory and descriptive survey research. According to Pinsonneault and Kraemer (1993) the intention of exploratory survey research is to become more familiar with a topic (Web Financial Reporting) and to test preliminary concepts about it (conventional representations of Financial Statements), while in descriptive survey research is to determine population's attitude towards these methods are determined.

The evaluation survey is the main part of the study, considering the implications that XBRL may have on the Web Financial Reporting of the Greek capital market. Consequently, the population should have been arranged among two axes: (a) the ability to comprehend basic financial management and analysis' theory, and (b) the ability to possess thorough familiarity with the Greek financial market. In that sense, participants were required to analyse four Athens Stock Exchange listed companies, in terms of investing opportunities. For the companies' analysis, the website of Athens Stock Exchange and the website of "XBRL Passport" model were presented to the students. In order to have a better evaluation of the information system of each website, every research class was divided in four groups of students. Then, every group had a twenty-minute timeframe to search for the financial information of a proposed company.

After the evaluation of the XBRL Passport system, the participants were asked to complete an online questionnaire. For the questionnaire construction two models were used: Doll and Torkzadeh (1988) model and DeLone & McLean «D&M IS Success Model». The current study uses the multi-dimensional model developed by Doll and Torkzadeh (1988)in an order to measure the utilisation of information technology by the individuals. The «D&M IS Success Model» is used as a framework for the evaluation of the current survey, since the use of an acceptable modern design evaluation such as Delone & McLean (2003) would give some initial answers in someone who wants to evaluate the integration of a pilot information system. (Blanas, 2010)

The majority of the questions were based on a 5-point Likert Scale(1 = strongly disagree, 2 = somewhat disagree, 3 = neutral, 4 = somewhat agree, 5 = strongly agree) (Likert, 1932). Furthermore, there were a number of other attitude scales, such as very satisfied – very dissatisfied, very important – very unimportant, etc., on a 5-point scale as well. The main reason for choosing the 5-point Likert Scale was because individuals generally choose from five alternatives which combine more uniform answers than the range offered by the three or the nine scales (Zikmund, 2003).A number of hypotheses have been posed in this survey, with the aim of validating the "XBRL-PASSPORT" model, according to the four factors (accuracy, format, ease of use, and timeliness)of information proposed by Doll and Torkzadeh (1988)plus one significant factor(user's satisfaction) proposed by DeLone & McLean «D&M IS Success Model» . The average of each of the five factors of information has been calculated, in support of testing the hypotheses. Hence, for each factor the following hypotheses were proposed:

H0: "XBRL-PASSPORT" is more effective than the currently used system by ASE.
H1: The currently used system by ASE is more effective than the "XBRL-PASSPORT".
Additionally, the overall satisfaction of the responders was tested in accordance with the following hypothesis:
H0: "XBRL-PASSPORT" has not a significant impact on user's satisfaction.
H1: "XBRL-PASSPORT" has a significant impact on user's satisfaction.

The survey predicted the participation of 94 students, but instead of this, the total number of responses was 89. The response rate was thus 94.68 %. The sample size conforms to Roscoe's (1975) "rule

of thumb" recommendation for minimum sample size of thirty (30), for statistical analysis (Eklund et al, 2006; Haron, Jantan & Pheng, 2005; Sekaran, 2002; Hill, 1998). According to Roscoe (1975) in simple experimental research with tight controls, successful research may be carried out with samples as small as 10 to 20. Moreover, samples larger than 30 guarantee to the researcher the benefits of central limit theorem (Abranovic, 1997; Roscoe, 1975).

7.2 Evaluation results

The main goal of the data analysis is to examine how the non professional investors react in XBRL technology through "XBRL Passport" application. Five group questions, as mentioned, had to be answered from data generated by the survey. In the following analysis the background information and the descriptive statistics is summarised.

The background information demonstrates that the participants generally are not familiar with financial analysis tools but the degree of IT familiarity of the participants is adequately satisfied. However, it is remarkable to mention that users ordinarily employ traditional financial reporting and analysis methods, such as financial statements and spreadsheets to facilitate their tasks. On the contrary, very few advanced decision support systems or multiple-ratio methods are used for financial benchmarking, allowing once more, enough space for the introduction of the XBRL proposition.

After studying the experience of users in financial Reporting and in Information Technology, the research evaluates the proposed "XBRL Passport" model, according to Delone & McLean «D&M IS Success Model» and Doll and Torkzadeh's (1988) "end-user computing satisfaction" (EUCS) model. In general, user's satisfaction of XBRL technology through "XBRL Passport" model has received a quite high rating from the students. Apparently, the students feel satisfied with the XBRL technology. This was not unpredicted, since new technologies tend to pioneer innovation and generate interest, when they are first introduced in public.

The accuracy of the model has as well received high ratings **(Table 1.1)**. Looking the three sub questions, it is observed a dispersion of prices between the factors "I strongly agree", "I somewhat agree", "Neutral". Most of the participants believe that the model is reliable (64.00%), accurate (73.8%), and sufficient (74.70%). However, the fact that a percentage of the participants stated "neutral", underlines that participants may trust the single official body of Greek capital market, in contrast with any other source of new financial information. Nevertheless, overall the participants were satisfied with the accuracy of the "XBRL Passport" model. As far as concerning the format of the model, it was observed a neutral reaction by the participants. That is probably happened because the "XBRL Passport" model is under development and there are a lot of changes that must be done. Additionally, at the moment, the research gave more attention in distribution and analysis of the financial data than in information presentation format.

The ease of use of the "XBRL Passport" model has been examined using three measures, model transparency **(Table 1.2.1)**, perceived ease of use for different tasks **(Table 1.2.2)**, and perceived technical ease of use for different users **(Table 1.2.3)**. The greater part of the students agreed that the model is significantly

transparent. The "XBRL Passport" is also perceived to easily support several analysis tasks, although data trends received lower scores (33.70% neutral, 37.20% I somewhat agree and 16.30% I strongly agree) than the others. Even though, one of the key features of the model is benchmarking analysis between markets' sectors, the participants appear to have a slightly negative rating, mainly because they are not professional investors, so it is difficult to see clearly the difference between single and aggregated results. Moreover, participants did conclude that "XBRL Passport" generally refers to expert users, and its use requires financial analysis and investing expertise, rather than a simple business background.

Timeliness is fairly the central aspect of XBRL's implication in Web Financial Reporting. Hence, the "XBRL Passport" was given a vote of confidence in delivering timely and usable information to the users, since it was highly rated (73.60% positive rating) by the overwhelming majority of the students for both these aspects **(Table 1.3)**.The participants were also asked how they would recognise the usefulness and satisfaction of the "XBRL Passport" model in web financial reporting. The results **(Table 1.4)** signify that this is an area in which the students perceive great importance in the model. The majority of the students are strongly supporters of the added-value of "XBRL Passport" in the operational quality of web financial reporting and the confidence that provides in ASE. This is demonstrated from the fact that 73.30% of them would have employed it, if possible.

The concluding questions **(Table 1.5)** provide once more support for the use of the "XBRL Passport" model in web financial reporting of ASE. 72.60% of the students thought that the model could be helpful in Web financial reporting and 71.4 % would probably or absolute replace one or more of the currently used representation methods, while only 2.40% of them disagreed with this opinion. The students obviously perceive the model to be a sufficient tool for searching and managing information in Athens Stock Exchange.

In order to test the hypotheses posed in Research Design, independent samples t-test was performed on specified responses. The unequal variances assumption was employed in the t-test for "XBRL Passport"-Quality in ASE, "XBRL Passport"-Confidence in financial analysis of Athens Stock Exchange and could the "XBRL Passport" replace one or more of the currently used representation methods. The above variables have been selected because they rate the satisfaction degree of the responders for XBRL technology or for current methods applied in ASE. For the definition of sampled groups, a cut point 3.5 has been selected in an order to compare the means using the 5-point Likert Scale. Mainly, responses 1-3 demonstrate acceptance of current methods of ASE and responses 4-5 demonstrated acceptance of XBRL technology through "XBRL Passport". Levene's test for equality of variances shows for the three independent variables F (15.945), $p=0.000<0.05$, F (4.838), $p=0.031<0.05$ and F (4.394), $p=0.039<0.05$ demonstrates a significant difference between the means of two independently sampled populations. **(Table 1.6)** Consequently, H0 is indicating that XBRL technology through "XBRL Passport" was rated higher (first question $t=5.529, df=81, p<0.01$, means difference 1.070-second question $t=4.410, df=81, p<0.01$, means difference 0.806, third question $t=5.385, df=82, p<0.01$, means difference 1.084) than the currently used method's factors.

Furthermore, in order to test the overall satisfaction hypotheses, a single sample t-test was performed **(Table 1.7)**, with a test value of 3 (average), with the intention to test if "XBRL-PASSPORT" has a significant impact on user's satisfaction. The results demonstrate that the H0 hypothesis is rejected with a t=8.651 and p=0.000<0.05. Additionally, there is evidence that the mean (M=3.92) is significantly different than the hypothesised value (value=3) and as a result, H1 is substantiated. Hence, users are considerably satisfied with "XBRL Passport" model. In consequence, the results of the "XBRL Passport" implications on Web Financial Reporting of ASE are fairly strong.

Conclusions

The study serves as a starting point for systematic examination of XBRL implications on Web Financial Reporting and implementation of XBRL projects in Greece. To break the information logjam, the study developed a prototype model, named "XBRL Passport". A content management system (currently Joomla v1.5.22) serves as an environment to the model implementation. Through a simple interface, the user has the ability to access financial statements information in a format easily utilisable using the XBRL Schema, customised benchmarking reports & comparison results of the selected companies and calculated financial ratios for analysts and investors.

In order to verify model's capacity, the study proceeded to a face validation setting of the model by subject matter experts. In the evaluation, 89 final-year business students were used as surrogates for decision makers and financial analysts. The research found that students are relatively satisfied with the most factors of "XBRL Passport", as the model was highly rated by them. Generally, the students are strongly supporters of the added-value of "XBRL Passport" in the operational quality of web financial reporting and the confidence that the model provides in ASE, plus the overwhelming majority of them (73.30%) would employ it, if that possible. Overall, the satisfaction with the "XBRL Passport" model was very high.

There are several implications of this study. Firstly and most importantly, the implementation of XBRL is able to re-engineer web financial reporting and overall the financial information supply chain, affecting several stakeholders in the financial services sector. Moreover, the study has revealed that XBRL-enabled systems are capable to support higher levels of transparency and trust.

Furthermore, the development and implementation of the "XBRL Passport" into the web financial reporting processes of the Athens Stock Exchange has enabled new types of value creating activities, such as returning benchmarking & comparison data to the market. To sum up, the participating students have been categorical about the model's attributes on specific fundamental points of web enabled financial reporting, and gave a vote of confidence in the proposed solution for the capital market of Greece.
However, the study is subject to several limitations. First of all, the "XBRL Passport" model is a pilot model under development; therefore the database information is quite limited. In the future, "XBRL Passport" may expedite business information among users by

implementing data for all the listed companies in a number of different formats. Secondly, business students were used as surrogates for online investors. Business students are not experienced enough in the field of financial reporting and investing, therefore they may not use the analytical techniques of actual investors. As Hodge, Kennedy & Maines (2004) states one group of individual investors is not enough to generalise the attitude for all individual investors. In a future research, when there will be sufficient data in the database system, "XBRL Passport" will be used for other research projects involving a larger sample of individual users.

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Appendices

Table 1.1: Frequency Table-Accuracy

	Accuracy				Valid percent					
					Strongly disagree		Neutral	Strongly agree		
	N	Missing Values	SD	Variance	I strongly disagree	I somewhat disagree	Neutral	I somewhat agree	I strongly agree	Total
Information is reliable	84	5	0.839	0.704	1.2	1.2	20.2	42.9	34.5	100.0
Information is accurate	84	5	0.775	0.600	1.2	0.0	25.0	50.0	23.8	100.0
Information is sufficient	83	6	0.869	0.756	1.2	2.4	21.7	42.2	32.5	100.0

Table 1.2.1: Frequency Table-Transparency

Transparence of XBRL model					Valid percent					
					Very non transparent		Neutral	Very transparent		
	N	Missing Values	SD	Variance	Very non transparent	Somewhat non transparent	Neither	Somewhat transparent	Very transparent	Total
Transparency	83	6	1.083	1.173	4.8	9.6	21.7	41.0	22.9	100.0

Table 1.2.2: Frequency Table- Ease of use for different tasks of the XBRL-PASSPORT model

Ease of use Using the XBRL model is easy to perceive and analyse					Valid percent Strongly disagree		Neutral	Strongly agree		
	N	Missing Values	SD	Variance	I strongly disagree	I somewhat disagree	Neutral	I somewhat agree	I strongly agree	Total
Comparable data	87	2	0.955	0.912	3.4	2.3	21.8	43.7	28.7	100.0
Data trends	86	3	0.941	0.885	1.2	11.6	33.7	37.2	16.3	100.0
Data clusters	85	4	1.007	1.015	2.4	10.6	22.4	42.4	22.4	100.0
Differences between data	86	3	0.964	0.930	2.3	7.0	22.1	44.2	24.4	100.0
Data values	86	3	1.016	1.032	2.3	9.3	18.6	41.9	27.9	100.0

Table 1.2.3: Frequency Table- Ease of use for different users of the XBRL-PASSPORT model

Ease of use The XBRL-PASSPORT model can be conveniently used by					Valid percent Strongly disagree		Neutral	Strongly agree		
	N	Missing Values	SD	Variance	I strongly disagree	I somewhat disagree	Neutral	I somewhat agree	I strongly agree	Total
Financial manager	87	2	1.105	1.222	5.7	2.3	11.5	28.7	51.7	100.0
Analyst	87	2	0.996	0.992	3.4	2.3	10.3	25.3	58.6	100.0
Stock market's invenstot	87	2	1.086	1.179	4.6	3.4	10.3	23.0	58.6	100.0
Business user	86	3	1.017	1.035	2.3	5.8	19.8	33.7	38.4	100.0
Expert user	87	2	0.950	0.902	2.3	9.3	18.6	41.9	27.9	100.0

Table 1.3: Frequency Table- Timeliness

Timeliness					Valid percent					
					Strongly disagree		Neutral	Strongly agree		
	N	Missing Values	SD	Variance	I strongly disagree	I somewhat disagree	Neutral	I somewhat agree	I strongly agree	Total
Do you get the information that you need in time using the XBRL-PASSPORT model?	87	2	1.140	1.300	5.7	5.7	14.9	34.5	39.1	100.0

Table 1.4: Frequency Table- Usefulness & Satisfaction of XBRL Passport

Usefulness & Satisfaction					Valid percent					
					Strongly Disagree		Neutral	Strongly agree		
	N	Missing Values	SD	Variance	I strongly disagree	I somewhat disagree	Neutral	I somewhat agree	I strongly agree	Total
Quality in Web Financial Reporting -Use of Results	87	2	0.870	0.756	21.8	48.3	21.8	48.3	21.8	100.0
Quality in ASE -Use of Results	85	4	0.946	0.896	2.4	4.7	11.8	43.5	37.6	100.0
Confidence in financial analysis of Athens Stock Exchange-Use of Results	85	4	0.851	0.725	1.2	4.7	16.5	51.8	25.9	100.0
I would use the XBRL-PASSPORT model if it was able	87	2	1.028	1.057	4.6	1.1	19.5	35.6	39.1	100.0

Table 1.5: Frequency Table- Conclusions concerning the use of the XBRL-PASSPORT model

Concluding Questions			Valid percent			
	N	**Missing Values**	**Yes**	**Uncertain**	**No**	**Total**
The XBRL-Passport model could be helpful in Web Financial Reporting of ASE	89	0	4.5	21.3	74.2	100.0
Does XBRL-Passort provide additional benefits?	89	0	3.4	29.2	67.4	100.0

Concluding Questions					Valid percent					
					Strongly Disagree		**Neutral**	**Strongly agree**		
	N	**Missing Values**	**SD**	**Variance**	**I strongly disagree**	**I somewhat disagree**	**Neutral**	**I somewhat agree**	**I strongly agree**	**Total**
Could the XBRLPASSPORT replace one or more of the currently used represantation methods	84	5	0.938	0.879	2.4	6.0	20.2	47.6	23.8	100.0
Overall Satisfaction with XBRL Model	86	3	0.985	0.970	4.7	1.2	20.9	44.2	29.1	100.0

Table 1.6: Independent samples t-test

Independent Samples Test										
		Levene's Test for Equality of Variances		**t-test for Equality of Means**					**95% Confidence Interval of the Difference**	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Quality in ASE -Use of Results	Equal variances assumed	15.945	**0.000**	5.529	81	0.000	1.070	0.194	0.685	1.455
	Equal variances not assumed			4.203	24.256	0.000	1.070	0.255	0.545	1.595
Confidence in financial analysis of Athens Stock Exchange-Use of Results	Equal variances assumed	4.838	**0.031**	4.410	81	0.000	.806	0.183	0.443	1.170
	Equal variances not assumed			3.773	25.905	0.001	.806	0.214	0.367	1.246
Could the XBRLPASSPORT replace one or more of the currently used represantation methods	Equal variances assumed	4.394	**0.039**	5.385	82	0.000	1.084	0.201	0.683	1.484
	Equal variances not assumed			4.363	27.190	0.000	1.084	0.248	0.574	1.593

Table 1.7: One sample t-test

One-Sample Test						
	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Overall Satisfaction with XBRL Model	8.651	85	0.000	0.919	0.707	1.130