Journal of Applied Business and Finance Researches

Volume 2, Issue 2: 41-49 (2013)

The Effect of Information Technology Systems on the Accounting Information Quality

Nader Rezaei (Bangor Business School)

Faculty of Business and Accounting, Bonab Branch, Islamic Azad University, Bonab, IRAN

Corresponding author's Email: naderrezaeimiyandoab@gmail.com

ABSTRACT: The purpose of financial reporting and accounting principles requires that the financial and accounting information meet the criteria to help investors, credit providers and other current and potential users of financial information. These qualitative characteristics of accounting information include: 'relevance'; 'reliability'; and 'comparability'. The increased developments of financial information technology (FIT) such as emergence of the Internet and its applications have created new mechanisms in the financial services and led to timely financial services. The main goal of this paper examines the effects of FIT on each of the qualitative features of accounting information. Firstly the FIT systems and applications are considered and then their resulting information is examined. In order to determine the impact of FIT on quality features of accounting information, following a review of literature, research hypotheses were formed. To examine hypotheses a survey of financial and accounting managers, the internal auditors and the experienced accountants was conducted. Results of this study indicate that the use of FIT has created significant changes in the quality of financial and accounting information. This study finds that using FIT leads to more timely financial disclosures that demonstrate the increasing relevance of information. However, FIT could generate unreliable financial information, in spite of its advantages. Comparability of financial information within the company, trend analysis and examining changes in financial status is improved while comparability of information between companies weakens.

Keywords: Financial and Accounting Information, Accounting Information System, Financial Information Quality Characteristics.

ORIGINAL ARTICLE

Received 09 Dec. 2012

Accepted 10 Mar. 2013

INTRODUCTION

Knowledge management and its related area emphasize that, achievement of the permanent competition advantage, in concept of global modern economy, is depended on the organization's capacities and abilities, and proper usage of organization's knowledge based sources. It must be mentioned that, all of the organization's sources are not in a same importance level. The structures of organization's properties are in change. In the last the objective properties of organizations were more significant than the subjective properties of organizations but nowadays the subjective properties are more important.

The information technology (IT) – the capabilities offered by computer systems, software applications, and networks and telecommunications – has transformed organization widely. Some companies have achieved various objectives in redesigning processes with IT. The most likely objectives are: cost reduction, time reduction, output quality, quality of work life (Lewis, 2003). The most important characteristics of IT application are high speed data processing, extremely high accuracy, high speed access to information, electronic exchange of information and its cheap and abated cost. Due to these factors no longer will justify the using IT. IT is more than automation and mechanization; it can basically reform the way business is done. Thinking on IT should be based on its support of business processes.

The dramatic change in IT and its pervasive development has created alterations in the any business functions. Typically IT supports each of the major business functions and provides applications for each organizational level (Laudon, 2005). IT contributes to effectiveness and efficiency, especially when are used in functional areas and operating departments of business (Stair and et al, 2010). Therefore the accounting is also inevitable to use all or some of IT applications and services. Accounting and finance have been the foremost business functions to adopt information technology, so ever increasing development of IT applications has changed the accountant's role to deal with them, and the modern accountant is required to take action more as an information manager in this electronic environment.

IT involves with the entire financial process from the occurrence of financial transactions to the issuance of financial reports for use both internally and externally (O'leary, 2006). IT capabilities improve financial processes. Specifically, the

Financial Information Technology (FIT) enhances the integration of financial and operational information from multiple sources, and provides easy access to data and information for users, through use of the corporate intranet to access corporate Web pages of financial information. The growth of real time systems generated information that was entirely up to date. The power to query the computer and obtain current information decreases the demand for printed reports and allows information to be used in different way. FIT Makes financial data more available on a timely basis and enables analysis of them along multiple dimensions (time, geography, product, plant, and customer) (Stair and et al, 2010).

Generally, FIT improves coordination and information access. The growth of the Web applications has extended more and more financial information and reporting in an electronic form over the Web (khan, 2008). Financial information and reporting should be understandable and comprise functional features. These features, i.e. the qualitative characteristics of financial information are relevance (including: timeliness, predictive value and feedback value) (FASB, 1980, Francis, 1999); reliability (include: verifiability, validation (completeness, accuracy and the preference of content on form) and neutrality) (Kerr, 2007, FASB, 1980); and comparability (include: consistency, sufficient disclosing and comparison between companies) (Callao, 2007, FASB, 1980).

This study examines whether the use of IT in accounting and financial functions (FIT applications) increases the quality of financial information. In other words the study surveys the impacts of FIT on each of the qualitative characteristics of accounting and financial information mentioned above. The contribution of this study lies primarily in analysis and discussion of the experimental results of FIT developments on accounting and financial information.

Accounting and Financial Information System and Technology

Accounting, is a special information system, should demonstrate the real picture of company's capital, sources of income and added value, revenue and profit distribution methods, the extent of consumption and storage (Salehi, 2010). Accounting Information System (AIS) is one of the subsystems of Management Information System (MIS). The primary purpose of AIS is to document economic events and acquire the impact they have on the organization's financial position. AIS maintain and produce the information used by organizations to plan, evaluate, and recognize the operations and financial circumstances (Kaplan, 1998). AIS can be designed as a manual system, or a computerized system. Regardless of the type, AIS is established to collect, process, accumulate, and report financial data and information. AIS collect information and raw data to transform them into financial information for the purpose of reporting to decision makers. AIS play a significant role in the managing an enterprise's activity but research shows that most information systems were not used effectively (Flynn, 1992). The effectiveness of AIS is one of the most common issues in the AIS literature (Foong, 1999; Thong, 2001). According to Flynn, the effective AIS provide management information to assist involved decisions. AIS contribution to achieving organizational goals has been defined as an effectiveness element (Raymond, 1990). The AIS is combined of three main subsystems: (1) the Transaction Processing System (TPS), which supports every day business operations; (2) the general ledger/financial reporting systems, which generate the conventional financial statements, such as the balance sheet, income statement, statement of cash flows, tax returns, and other required reports; (3) the management reporting systems (MRS), which supply for managers special propose financial reports such as budgets.

AIS are systems for processing financial information and enterprise resources to form and distribute information. Latest AIS cannot function without using IT and computer applications to collect, process and transmit information to users. For this reason computerized AIS are designed and implemented. IT is one of the principal phenomena that have changed the AIS to a significant extent. A major technological innovation that has affected AIS and the way in which accounting is conducted is electronic data interchange (EDI). EDI decreases considerably the cost and time associated with the information interchange between companies and financial systems. Data communication networks are basic to the success of the application of AIS that EDI make it facile (Anderson, 2002).

The computer application software are the other significant component of computerized AIS which enable to organize information automatically, create financial reports and make them available to users according to their requirements (Domeika, 2005). Functionality of computer software use in AIS also determines the quality of accounting information.

Enterprise Resource Planning (ERP) systems emerged in the 1990s as one of the fastest growing and perhaps one of the most important developments in corporate use of information technology (Davenport 1998). ERP breaks down traditional functional barriers by facilitating data sharing, information flows among all organization users. Financial and accounting systems are the common module in ERP systems. ERP systems use workflow automation to track information from sales order to cash collection, generating the necessary accounting transactions in the process (Hunton et al. 2004). The result is timelier and higher quality accounting information available for management decision making at all levels of the organization on an almost continuous basis.

Electronic commerce is the advanced applications of information technology for the conduct of financial transactions in an electronic environment. Electronic commerce has created new opportunities and challenges for accountants. Several traditional accounting functions are now embodied in systems that need a different combination of technical and financial knowledge (Leyshon et al, 2005). The AIS is designed to provide this combination of knowledge and skill sets to meet the new opportunities and challenges of the information technology world and e-commerce environment. Meanwhile, the implications of the development of the eXtensible Mark-up Language (XML) data transmission system for transmitting

accounting information automatically from one computer application to another should be considered. It appears that the next wave of accounting computing systems will embrace the of XML applications. The future accounting systems are built using XML technologies, incorporating both a closed (proprietary) set of XML and eXtensible Business Reporting Language (XBRL) tags for reporting purposes (Murthy, 2003). The current technology provides integrated accounting in the e-commerce environment that will be replaced with completely different kinds of systems in the short time. There will be taking place a lot of changes in the accounting. XBRL is based on XML, for the electronic communication of business information. Its objective is to amend the disclosure, analysis and management of data, through an exclusive tagging structure that provide interoperability (Bonson, 2009) and impact the financial reporting supply chain by digitising business information (Buys, 2008). In fact, XBRL framework makes it possible several types of reports that can be parsed by computers easily and software applications exist for the analysis of such information. XBRL drastically can be reduced the time and costs related to data capture and analysis in business processes, through streamlining the reporting processes. XBRL can facilitate the automated communication of financial information between disparate accounting and financial information systems, and facilitate direct communication between such systems (Buys, 2008). There is no need to invest in additional systems to transacting and consolidating information, while the preparation of financial information for reporting and analysis can also become faster (Buys, 2004).

The most studies on the effects of IT on financial reporting have been focused on Internet effects. Ashbaugh et al (1999) have asserted there are substantial changes in the quality of financial reporting by using Internet, especially in the timely reporting. They expressed, the most important point in the Internet financial reporting is to balance between two characteristics of information i.e. relevance and reliability. Just as the Internet reporting enhances the scope and relevancy of information, the reliability risks also increase. One significant reason for reducing reliability is insecure and none assured Websites. The internet financial reporting enables companies to improve their financial disclosures through disclosing additional and segregated financial information in the Website (Ashbaugh and et al, 1999).

Ravlice (2000) and Khan (2002) conducted studies on financial Internet reporting separately and achieved similar results. They set forth the most significant limitation in the use of Internet for financial reporting is lack of reliability (Ravlice, 2000 and Khan, 2002). Lodhia and et al (2003) addressed lack of reliability and IT skills as two important reasons for low tendency and not use of Internet potential for financial reporting (Lodihia, 2003). Dull and et al (2003) stated using superior communication tool (Internet) in presenting financial information affects process of judgment and relevancy (Dull et al, 2003).

Financial Accounting Standard Board Steering Committee found in their research in 2000, Internet has lead monthly and annual reporting to on time reporting. With reporting via Internet not only information is provided for manager, analysts and experts, but is disclosed to all users with low-cost, high speed and easy access. However, it cannot be asserted about completeness of information. This group also realized the differences in content and distribution methods on internet reports and set forth problems such as security, legal barriers, lack of access to these technologies have restricted the use of these tools (FASB, 2000). IT has changed the flow of information between information providers and users. The increaser growth of IT such as Internet and its applications and use in reporting has led financial reporting to timely reporting (Ashbaugh and et al, 1999).

Qualitative Characteristics of Accounting and Financial Information

The usefulness of information is determined by related targets that should be met, and the objective of financial information based on financial reporting objective is to assist effective decision making (FASB, 1980). The financial reports should provide significant information that assist users in decision making processes. Each decision maker diagnose what accounting information is useful, and that distinction is affected by some factors such as the decisions that should be made, the decision making methods that are used, the information previously possessed from other sources, and the decision maker's knowledge and communication capacity (alone or with professional help) to process the information.

The Canadian Institute of Chartered Accountants has declared the objective of financial reporting is the providing useful and relevant information in a form and time frame to all potential users with a variety of needs (CICA, 1980, p. 32). The information about financial position of companies widely is used in economic decisions that should be brought in financial reports (FASB, 1991, p. 12). The FASB, in Statements of Financial Accounting Concepts has declared the objectives of financial reporting is to assess the amounts, timing, and the cash receipts prospective from interest and the earnings from the sale, maturity or redemption of securities and loans. As such, it explained the economic resources of a company and the effects of transactions and events on them should be presented in the financial reports (FASB, 1996, p.2). The required information determines the extent of information disclosure. The information requirements might be mandatory that is determined by law and other regulations such as Stock Exchange Listing Requirements or voluntary that management directions specify that.

The characteristics of information that make it worthwhile can be viewed as a set of qualities. Without these qualities, there would not be any benefits for information to allot against its costs. Relevance, reliability and comparability are the three major qualities that make accounting information a more desirable commodity and useful for decision making. If either of those qualities is completely absent, the information will not be valuable. Therefore, the choice of an accounting alternative should generate information that is more reliable, relevant and comparable. To be relevant, information must be timely and it

must have predictive value and feedback value. To be reliable, information must be verifiable and neutral and it must have validity. The validity of information itself depends on completeness, accuracy and the preferable content. Comparability, which includes sufficiency disclosure, consistency and ability to compare between companies, is a quality that interacts with relevance and reliability to contribute to the usefulness of information. These set of qualities are represented in figure (1).

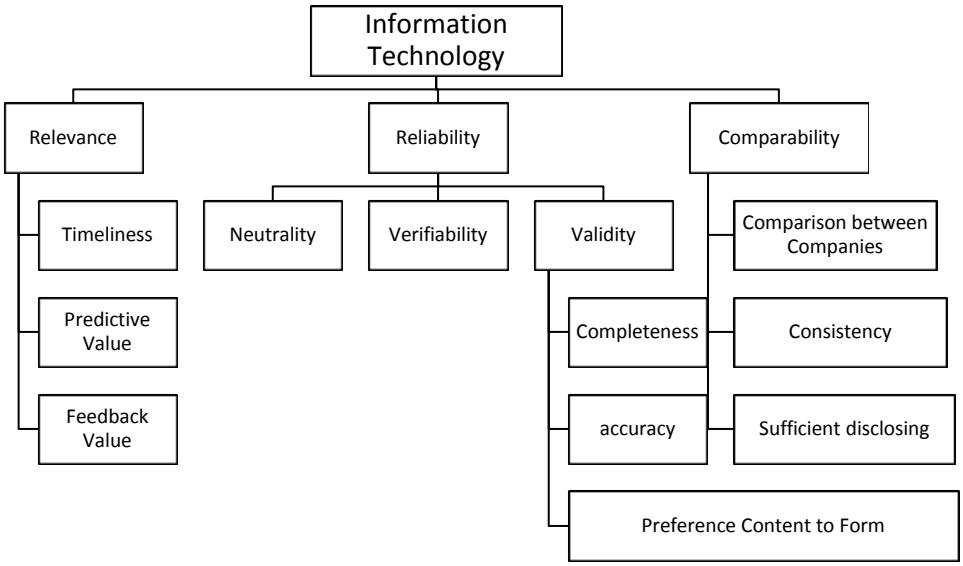

Figure 1: Quality characteristics of financial and accounting information

In discussions of accounting quality characteristic, relevance has usually been defined as pertaining to the matter in question. Information must be related to a decision logically in order to be relevant to it. Information is relevant if the uncertainty level of decision results is changed by adoption of new information. The accounting relevance information to investors and other decision makers for investment and other similar decisions must be capable to make difference in decisions. It is conducted by helping users to predict the outcomes of events and confirm or correct prior expectations. The predict value of accounting information is related to information capability in improving decision makers' capacities to predict. It helps users to increase the likelihood of forecasting the outcome of events acceptably. The feedback value the other quality of accounting information relevancy enables users to prove or correct previous expectations. Besides, timeliness is an essential aspect of relevance. If information is not available when it is needed in that case it has no value for future action. Timeliness means providing information to decision makers before it loses its capacity to affect decisions (Ashbaugh et al, 1999).

A number of effective technologies on relevancy of financial information include: databases (for data analyzing), expert systems (for deviations and risks analysis), neural networks (as a forecasting tool), XBRL (facilitate access to information for investors and analysts and a powerful tool for extracting and evaluation data), intelligent agents (aid to decision), and decision support software. Regarding to applications of these technologies in financial and accounting systems, here we evaluate the effects of these technologies on relevancy of financial information. Thus, the related hypothesis is formed:

There is significant relationship between the usage of FIT and accounting information relevance.

The other significant feature of accounting information is reliability. To be useful, information has to be reliable. It is the quality of information that guarantees that information is reasonably free from error. The reliability of accounting and financial information comprises three characteristics, neutrality, verifiability and validation of information that interact to affect its usefulness (Ravlice, 2000).

To be neutrality, information should be devoid of slant to a predetermined result. Information should be gathered purposeful. But the purpose should not imply a predetermined result. Neutral accounting information report economic activity as truly as possible, without steering the thoughts for the purpose of influencing in some specific direction. Verifiability is involved with preventing misrepresentation. It increases consensus about measurement. The quality of verifiability strengthens the usefulness of accounting information because the verification is to provide a significant level of assurance that "accounting measures represent what they purport to represent" (Holthausen et al, 2001).

Information validity is achieved through confirmation inputs and tracing information antecedent. Validity (representational faithfulness) is correspondence between a measure and the phenomenon, it purports to represent. In accounting, the phenomena to be represented are economic resources and the transactions and events that change those

resources Correspondence between a measure and the phenomenon (Holthausen et al, 2001). Validity, on the other hand, pertains to the association between the accounting numbers and the resources or events those numbers purport to represent. For validity, it should be considered other prominent properties of accounting information; completeness, accuracy and preference content to form. Completeness is one of the financial statement characteristics that have to be ensured. It exists when all values for a specific variable are recorded (Xu et al, 2003) and everything material is required for validity of the relevant phenomena are provided. Accuracy occurs when the recorded value is in conformity with the real value (Xu et al, 2003); the degree of conformity of a collected and computed value to its definition or standard. The content and form are two important aspects of financial reports. Understanding the form of representations should lead users to an understanding of content (Marman et al, 1998). In the financial reporting, the content of financial information is preferred to the form of accounting reports.

The literature state reliability of information decreases despite of FIT benefits for financial reporting. The limitations of continuous auditing are the main reason and low security for information in IT is another reason for this decline which is expected with technology advancements will solve these problems (Sutton, 2000). This study with establishing below hypothesis reassesses the relationships of FIT applications on reliability of financial information.

There is significant relationship between the usage of FIT and accounting information reliability.

The information of a company is really useful if it can be compared with similar information from other companies and with similar information from same company from other periods and times. The significance of information, particularly quantitative information, depends on its capability to compare it with benchmark (Holthausen et al, 2001). There are difficulties in making financial comparisons among companies because of the various accounting systems application. Generally, the main reasons for non comparability of financial information between companies includes; use of dissimilar inputs, applying dissimilar procedures, use of different systems of classification of assets and liabilities or costs and revenues. Consistency is the factors that increase the information comparability. Information that is inconsistent is less comparable and more complex than information that is consistent. Consistency is conformity from company to company and period to period with steady systems and procedures (Kovancevice, 2009). Improved disclosure is other element that results in improved transparency, which is one of the most important elements of comparability. Users have the right to sufficient disclosure of significant financial information (Bhasin et al, 2008).

A number of technologies that affects comparability of financial reporting include: reporting language XBRL (Comparison of financial reports of companies in each industry group make possible through adaptation classified financial data), transferability of data from financial reports to spreadsheets, data mining and simultaneous analytical processing, software-based artificial intelligence (make possible changes in reports in accordance with terms), and intelligent agents (For analysis a few years different company). The next hypothesis in this manner in order to evaluation of financial information comparability is established.

There is significant relationship between the usage of FIT and accounting information comparability.

In the influence of FIT on the quality of accounting information, some of characteristics are in conflict together (such as relevance and reliability) and technology has failed to take this contradiction to date. Therefore, the impact of IT on quality each of characteristics of accounting information differs. However, the most important point in the emergence of timely financial reporting is balance between these features (Ashbaugh et al, 1999). For revealing dissimilarities of FIT effects on financial information quality characteristics the following hypothesis is evaluated.

The effect of FIT on each of the characteristics of accounting information quality is different.

MATERIALS AND METHODS

In this study, we conducted the empirical data gathering process for evaluation of respondents' perceptions on research issues. Postal questionnaires were devised to elicit respondents' opinions directly. The questionnaire survey is an effective and efficient research tool for measuring respondents' thoughts and is associated with both positivistic and phenomenological methodology (Hussey and Hussey, 1997). Therefore detailed questionnaire was designed and distributed by post to respondents and to maximize the response rate, it was followed by e-mail and telephone. The reliability of questionnaire was evaluated by the Cronbach's Alpha Coefficient. The obtained value (α=80.73) indicates high inter correlation and internal consistency among questions and the questionnaire has high reliability. The respondents in this study included the financial and audit managers of organizations, the internal auditors and the experienced accountants.

For calculating the sample size and sufficient number of population for generalizing the results of study, formula that is appropriate for qualitative data is used. In this way, the sample size (n) is determined based on population proportion (p) and using following formula:

$$n = \frac{z^2_{\alpha/2} \times p_0(1-p_0)}{\varepsilon^2} \qquad n = \frac{(1.96)^2 \times 0.5 \times o.5}{(0.1)^2} = 96.04$$

Considering that at least 97 usable questionnaires are necessary and may the number of questionnaires do not return or are useless, therefore 130 questionnaires were distributed. Of the 130 questionnaires given to respondents, 108 were returned which is 83% response rate.

Research Findings

Statistical analysis of the questionnaires revealed wealth information concerning accounting and financial information technology used in respondents' companies and the differences among them, according to the companies' size. They are summarized as following table 1.

Table 1. Demographic information of research respondents

Items	**Respondents 'rate**	**Stand alone FIT**	**Integrated FIT**	**FIT Internet application**
Small (1-49personnel)	13%	73%	27%	-
Medium (50-249personnnel)	53%	56%	44%	5%
Large (250≤ personnel)	34%	22%	78%	28%

As can be noted from the above table, the percentage of companies use integrated FIT and Internet applications increases with growing company's size. Despite the many advantages of integrated FIT systems, they are not employed as a successful management tool to small and medium sized companies (SMEs) yet or at least it is not as easily implementable by SMEs (Huin, 2004). As mentioned previously, this paper tries to explore how the deployment of FIT systems affects the accounting information quality. Primarily a one-way ANOVA was calculated to examine the first research question which asks whether the effect of FIT on each of the characteristics of accounting information quality is same. It was achieved significant differences among the mean of the groups of quality characteristics. This hypothesis is rejected with 95 percent confidence level. Therefore it is concluded that the impacts of FIT on each of accounting information quality are deferent. Table 2 Shows the results of one-way ANOVA, using Quality Characteristics as the dependent variable.

In order to assess the effect of FIT implementation on each of the quality characteristic groups (Relevance, Reliability and Comparability) separately, the single t-test were applied for examination of next three hypotheses. The results of t-test indicate, with 95 percent confidence, the application of FIT has positive strong effect on relevancy of information, whereas unlike effect on reliability. Furthermore, the results shows using FIT relatively increases the comparability of accounting information. Table (3) presents the results of t-test for the quality characteristic groups along with the statistics indices. That achieved the quality characteristics of accounting information are affected by FIT in different manners. Thereafter, the amount of effect on each of quality characteristics are examined by using Duncan's multiple range tests to determine which of these items more are affected. Table (4) indicates the effects level of IT on accounting information as consistent sets according to Duncan test.

Table 5 demonstrates different gradations of impacts of IT on each of accounting information characteristics in six consistent subsets according to Duncan test.

Table 2. One Way ANOVA test results for quality characteristics as dependent variables

ANOVA

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	127.722	2	63.861	52.257	.000
Within Groups	392.278	321	1.222		
Total	520.000	323			

Table 3: The results of t-test for the quality characteristic groups along with the statistics indices

Quality Characteristics	**One-Sample Statistics**			**One-Sample Test**			
				Test Value = 3			
	N	**Mean**	**Std. Deviation**	**T**	**df**	**Sig. (2-tailed)**	**Mean Difference**
Relevance	108	3.93	1.100	8.750	107	.000	.926
Comparability	108	3.13	1.193	1.130	107	.261	.130
Reliability	108	2.40	1.023	-6.117	107	.000	-.602

Table 4: the effects level of IT on accounting information as consistent sets according to Duncan test

		alpha = 0.05			The Effect Level
	Quality Characteristics	1	2	3	
Duncan	Reliability	2.40			Negative
	Comparability		3.01		Low Positive
	Relevance			3.93	High Positive
	Sig.	1.000	1.000	1.000	

Table 5: The gradations of impacts of IT on each of accounting information characteristics in six consistent subsets according to Duncan test

	Sub Variable	**Subset for alpha = 0.05**						**The Effect Level**
		1	**2**	**3**	**4**	**5**	**6**	
Duncan	Verifiability	1.61						High Negative
	Accuracy	1.72	1.72					High Negative
	Neutrality		1.95					High Negative
	Comparison Between Companies			2.36				Negative
	Completeness				2.70			Negative
	Preference Content To Form					3.15		Positive
	Predictive Value					3.30		Positive
	Sufficient Disclosing					3.41		Positive
	Feedback Value					3.44		Positive
	Consistency						3.77	High Positive
	Timeliness						3.89	High Positive
	Sig.	.473	.135	1.000	1.000	.080	.437	

CONCLUSIONS

The results of this research show the use of FIT has changed significantly the quality of financial information. Particularly FIT has increased the quality characteristics because of timeliness information. Furthermore the reliability of information is reduced even with the benefits of FIT for financial information. Comparability of company's financial information (trend analysis of changes in financial condition and results of operations) are also increased while comparability of information between companies is reduced.

As was mentioned FIT affects quality characteristics of accounting information that this effect is applied through the reporting. In fact, FIT has led from financial reporting to timely reporting. This type of reporting provides information with different features. On the one hand, with using FIT the information becomes more relevance, and the comparability. On the other hand, it is determined that financial reporting finally has to lead to timely financial reporting because of changes in user's financial requirements and disadvantages of the traditional reporting model.

REFERENCES

Accounting Standards Board, 1991. The Objective of Financial Statements and the Qualitative Characteristics of Financial Information, USA.

Ashbaugh, H., Johnstone, M.K. & Warfield, D.T. 1999, "Corporate reporting on Internet", Accounting Horizons, vol. 13, no. 2, pp. 241-257.

Ashbaugh, H., Johnstone, M.K. & Warfild, D.T. 1999, "Corporate Reporting on the Internet", American Accounting Association, vol. 13, no. 3, pp. 241-257.

Banker, D.R., Chang, H. & Kao, Y. 2002, "impact of information technology on public accounting firm productivity", Journal of Information Systems, vol. 16, no. 2, pp. 209-222.

Bonson, E., Cortijo, V. & Escobar, T. 2009, A Delphi Investigation to Explain the Voluntary Adoption of XBRL", The International Journal of Digital Accounting Research, vol. 9, pp. 193-205.
Bossaerts, P. 2009, What Decision Neuroscience Teaches Us About Financial Decision Making", The Annual Review of Financial Economics, vol. 1, pp. 383-404.
Bovee, M., Kogan, A., Srivastava, P.R., Vasarhelyi, A.M. & Nelson, K. 2005, "Financial Reporting and Auditing Agent with Net Knowledge (FRAANK) and eXtensible Business Reporting Language (XBRL)", Journal of Information Systems, vol. 19, no. 1, pp. 19-41.
Buys, P.W. 2008, The impact of XBRL on the financial reporting supply chain: a South African case study", Meditari Accountancy Research, vol. 16, no. 1, pp. 43-58.
Callao, S., Jarne, J.I. & Laínez, J.A. 2007, "Adoption of IFRS in Spain: Effect on the comparability and relevance of financial reporting", Journal of International Accounting, Auditing and Taxation, vol. 16, no. 2, pp. 148-178.
Callao, S., Jarne, J.I. & Laínez, J.A. 2007, "Adoption of IFRS in Spain: Effect on the comparability and relevance of financial reporting", Journal of International Accounting, Auditing and Taxation, vol. 16, no. 2, pp. 148-178.
Callao, S., Jarne, J.I. & Laínez, J.A. 2007, "Adoption of IFRS in Spain: Effect on the comparability and relevance of financial reporting", Journal of International Accounting, Auditing and Taxation, vol. 16, no. 2, pp. 148-178.
CICA 1980, Corporate Reporting: Its Future Revolution, Canadian Institute of Chartered Accountants, Canada.
Domeika, P. 2005, "Secondary Economic Information of an Enterprise and its Computerized Arrangement", Economics of Engineering Decisions, vol. 5, no. 45.
Dull, R.B., Graham, A.W. & Baldwin, A.A. 2003, "Web-based financial statements: hypertext links to footnotes and their effect on decisions", International Journal of Accounting Information Systems, vol. 4, no. 3, pp. 185-203.
Dull, R.B., Graham, A.W. & Baldwin, A.A. 2003, "Web-based financial statements: hypertext links to footnotes and their effect on decisions", International Journal of Accounting Information Systems, vol. 4, no. 3, pp. 185-203.
Ezzamel, M. & Bourn, M. 1990, "The roles of accounting information systems in an organization experiencing financial crisis", Accounting OrganirntiotzsannSociety, vol. 15, no. 5, pp. 399-424.
Financial Accounting Standards Board 1996, Statements of Financial Accounting Concepts: Accounting Standards, John Wiley & Sons, Inc, New York.
Financial Accounting Standards Board 1980, Statements of financial accounting concepts No.2 "Qualitative characteristics of accounting information", Financial Accounting Foundation.
Francis, J. & Schipper, K. 1999, "Have Financial Statements Lost Their Relevance?", Journal of Accounting Research, vol. 37, no. 2, pp. 319-352.
Franco, D.G., Kothari, S.P. & Verdi, S.R. 2009, "The benefits of financial statement comparability", .
Franco, D.G., Kothari S.P & Verdi S.Rodrigo. 2009, "The Benefits of Financial Statement Comparability", available at http://www.hbs.edu/units/am/pdf/DKV%20Comp%20Oct%2025%2009%20final.pdf, .
Graham, J.R., Harvey, C.R. & Rajgopal, S. 2005, "The economic implications of corporate financial reporting", Journal of Accounting and Economics, vol. 40, no. 1-3, pp. 3-73.
Graham, J.R., Harvey, C.R. & Rajgopal, S. 2005, "The economic implications of corporate financial reporting", Journal of Accounting and Economics, vol. 40, no. 1-3, pp. 3-73.
Holthausen, W.R. & Watts, L.R. 2001, The relevance of the value-relevance literature for financial accounting standard setting", Journal of Accounting and Economics, vol. 31, pp. 3-75.
Huin, S.F. 2004, "Managing deployment of ERP systems in SMEs using multi-agents", International Journal of Project Management, vol. 22, no. 6, pp. 511-517.
Ismail, N.A. 2009, "Factors influencing AIS effectiveness among manufacturing SMEs: Evidence from Malasia", EJISDC, vol. 38, no. 10, pp. 1-19.
Kaplan, D., Krishnan, R., Padman, R. & Peters, J. 1998, "Assessing data quality in accounting information systems", Commun. ACM, vol. 41, no. 2, pp. 72-78.
Kermis, G. & Kermis, M. "Professional presence and soft skills: a role for accounting education", Journal of Instructional Pedagogies, , pp. 1-10.
Kerr, S.D. & Murthy, S.U. 2007, "The importance of the COBIT framework IT processes for effective internal control over the reliability of financial reporting: An international survey", Symposium on information system assurance, University of Waterloo, .
Khan, A.H., Muzhar, A.T. & Nazmul, A.K. 2008, "Corporate Financial Reporting on Internet: Global Developments and an Appraisal of Practices in Bangladesh", American International University-Bangladesh (AIUB) working paper, .
Krishhana, R., Peters, J., Padman, R. & Kaplan, D. 2005, On Data Reliability Assessment in Accounting Information Systems", Information Systems Research, vol. 16, no. 3, pp. 307-326.
Lawrence, A.G. & Miller, D. 1976, A CONTINGENCY FRAMEWORK FOR THE DESIGN OF ACCOUNTING INFORMATION SYSTEMS", Accounting, Organizations and Society, vol. 1, no. 1, pp. 59-69.

Leyshon, A., French, S., Thrift, N., Crewe, L. & Webb, P. 2005, Accounting for e-commerce: abstractions, virtualism and the cultural circuit of capital", Economy and Society, vol. 34, no. 3, pp. 428-450.

Markman, B.A. & Dietrich, E. 1998, "content and form are not the same reply to terrier on representation- mediation", Psycoloqugy, vol. 9, no. 63.

O'leary, D. & Markus, M.L. 2006, "Microsoft's Management Reporting: SAP, Data Warehousing & Reporting Tools", Journal of Emerging Technologies in Accounting, vol. 3, pp. 129-141.

Saeedi, A., Richards, J. & Smith, B. 2005, "An Introduction to XBRL", Irainan Accounting & Auditing Review, vol. 45, pp. 132-158.

Salehi, M., Rostami, V. & Mogadam, A. 2010, Usefulness of Accounting Information System in Emerging Economy: Empirical Evidence of Iran", International Journal of Economics and Finance, .

Sangster, A., Leech, A.S. & Grabski, S. 2009, "ERP implementations and their impact upon management accountants", Journal of Information Systems and Technology Management, vol. 6, no. 2, pp. 1807-1775.

Sutton, G.S. 2000, The Changing Face of Accounting in an Information Technology Dominated World", International Journal of Accounting Information Systems, vol. 1, pp. 1-8.

Sutton, S.G. 2000, "The changing face of accounting in an information technology dominated world", International Journal of Accounting Information Systems, vol. 1, no. 1, pp. 1-8.

Travica, B. & Cronin, B. 1995, "The ARgo: A strategic information system for group decision making", International Journal of Information Management, vol. 15, no. 3, pp. 223-236.

Tsamenyi, M., Cullen, J. & González, J.M.G. 2006, "Changes in accounting and financial information system in a Spanish electricity company: A new institutional theory analysis", Management Accounting Research, vol. 17, no. 4, pp. 409-432.

Xu, H., Nord, H.S., Nord, G.D. & Lin, B. 2003, "Key issues of accounting information quality management: Australian case studies", Industrial Management & Data Systems, vol. 103, no. 7, pp. 461-470.