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The Effect of Information Technology on Accounting System's Conformity with Business Environment: A Case Study In Banking Sector Company

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The purpose is to present a case study demonstrating the role of information technology (IT) in conformity between accounting system and business environment. The design of the study is based on literature review and case study. Using a case study approach this paper provides empirical evidence offering a more effective accounting system and its continual improvements for organizations operating in different business environment. The study found that a more effective use of accounting system could be ensured by identifying an external environment of an organization and its reaction as internal environment. This paper highlights the differences between the use of accounting system in static/dynamic external environment and simplistic/absorption internal reaction of an organization. The study adds to the existing literature by undertaking a relatively holistic view of the IT that influence an effective use of accounting system, which may form a starting point for effective decision making process.

Keywords: accounting system, information technology, business environment, conformity

Introduction

Changing requirements of information for modern managers have stimulated a development of measures and methods which promote progress and inform the perspectives and opportunities for current and future performance. Rapid change in present business environment conditions requires agility, flexibility and innovation. Processes of adaptation and reaction to the business environment could be ensured by a fast decision making process, timely information and suitable data flow. According to this, business environment became progressively more turbulent, through more rapid and unpredictable changes, greater diversity, increased complexity, and intensified competitive pressures. Today, organizations are confronting unprecedented radical changes to which they must adapt to survive and prosper. Given the increasing challenges in the competitive environment successful organizations have to constantly adapt to changing conditions. Adaptation and reaction process could be ensured by fast decision making process, useful information and suitable data flow. According to this aspect organizations try to find new methods, alternatives and systems in order to get more useful, actual and timely information in very fast changing environment (Kloviene and Gimzauskiene, 2014). Changing and exclusive requirements of information have stimulated development of accounting methods, functions and applications (Khazanchi, 2005; Khatri, 2006). However, current accounting system has been challenged by major changes in the environment (Sulaiman, Ramli and Mitchell, 2008) and by the rapid development of an information technology (Andersen, 2005). On the other hand, it is important to notice that the purposeful and reasonable usage of accounting system and its information influence the opportunity to choose an appropriate structure and features of an accounting system. Notwithstanding the fact that different aspects of accounting system are widely analyzed in scientific literature, the conformity between accounting system and the environment of an organization is not as broadly analyzed. It is difficult to use the accounting system effectively if organizations are not able to identify the IT instruments which allow to estimate and support decision making process. Gradually, the accounting system could become software and instruction for its usage only and organizations will be forced to look for new opportunities and resources thereby ensuring their fast reaction, decision making, and adequate performance. To fill this gap, this paper seeks to answer the following research question: what is the role of information technology on the conformity between accounting system and business environment?

In order to investigate the above research question, we should better understand the gap between the theory and practice in accounting system, and the characteristics of the business environment which may influence this gap.

To summarize, the main aim of the research is to present a case study demonstrating the IT role in conformity between accounting system and business environment. The paper reveals the conformity of the accounting system with the business environment which is based on the analysis of different theories. New insights for conformity identification are presented as well.

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Theoretical background. According to the open systems theory, an organization interacts with, adapts to and seeks to control its environment in order to survive (Fowler, 2009). In our day and age, we can see that environment pressures have an impact on the behavior of all organizations looking from the decision making, process points of views. All these pressures have created a much more competitive environment for the business world. Making high-quality and timely decisions depends in part on the quality of the data and the existence of on-line and real-time information. In very fast changing times organizations are actively looking for methods to improve the efficiency and profitability of their performance (Kloviene and Gimzauskiene, 2014). Information technologies are used to facilitate their business transactions (Rezaee et al., 2000), the process of decision making for organizations (Gatautis and Vitkauskaite, 2009; Melnikas, 2008; Zavadskas, et al, 2010). The information technology function is responsible for designing, implementing and maintaining many of controls over an organization's business processes (Cannon and Crowe, 2004; Abu-Musa, 2008; Consoli, 2010 a, b). It could be stated that IT has impact on all business processes and accounting is not an exception (Saban and Efeoglu, 2012). Accounting system is very important with its purpose and functions in organization - collection and recording of data and information regarding events that have an economic impact upon organizations and the maintenance, processing and communication of information to internal and external stakeholders (Christauskas and Martinkus, 2004; Jovarauskiene and Pilinkiene, 2009; Girdzijauskas, et al, 2008; Kundeliene, 2011), providing the financial information for decision making within the organization (Salehi, Rostami and Mogadam, 2010). Hence, accounting procedures have changed when most information exists only in electronic form and different methods were developed. Hyvönen (2003) determined that ERP systems increase the use of advanced managerial accounting techniques, such as ABC and Balanced Scorecard. Saban and Efeoglu (2012) stated that the ERP system causes a change in managerial accounting practices, in terms of providing global information flow and standardization, and that conventional managerial accounting procedures are eliminated after ERP (Caglio, 2003; Jack and Kholeif, 2008; Yeh, Lee and Pai, 2012; Saban and Efeoglu, 2012). Information technology systems cause a change in issues of budgeting and reporting, which are among the managerial accounting applications, and enable the increasing use of advanced managerial accounting techniques (Yeh, Lee and Pai, 2012; Saban and Efeoglu, 2012).

According to this aspects could be stated that information technology have changed the roles of accountants in business from information collection, preparation, analysis to the part in the functions of control, interpretation, assessment and decision-making (Yeh, Lee and Pai, 2012; Saban and Efeoglu, 2012; Kloviene and Gimzauskiene, 2014). On the other hand, as information technologies are quickly developing, the accounting systems often do not support the business properly (Christauskas and Miseviciene, 2012) influencing the need to analyze accounting system compatibility with business environment.

Theoretical framework. It is difficult to use accounting system effectively, if organizations could not identify the instrumentation which allows estimate an aspect of conformity between all its performance measurement system including accounting system and business environment of organization. Gradually performance measurement system could become a software and instruction for its usage only and organizations constrained to search for a new opportunities and resource for a fast reaction, decision making and adequate performance. According to this aspect the conformity between accounting system and environment of organization was selected for further research, striving to summarize research results of other this field scholars and develop theoretical assumption for further IT usage then unconformity between accounting system and environment of organization is identified. As contingency theory postulates (Gul and Chia, 1994; Chong and Chong, 1997; Garengo and Bititci, 2007; Wickramasinghe and Alawattage, 2007) that different organizations perform in different ways in the same environmental circumstances and provides a methodology for recognition of an external environment of organization and its influence on accounting system. According to this aspect, uncertainty level of external environment could be used for a state identification of external environment. According to limitations of contingency theory, an integration of two theories could be proposed choosing complexity theory, which could help to disclose reaction of organization to environment and its influence on accounting system (Rayburn G. and Rayburn M., 1991; Miller, 1993; Anderson, 1999; Boisot and Child, 1999; Church, 1999; Ashmos, Duchon and McDaniel, 2000; Goulielmos, 2005). Such a reaction could be used to recognize the state of an internal environment of organization.

Analyses made let to state, that external environment of organization assumes static or dynamic state to which reaction of organization assumes simplicity or absorption. According to this, external environment of organization could be as x axis in system of axes and reaction to it – internal environment of organization – y axis. According to these two axes the peculiarities of accounting system in different business environment could be disclosed. Accounting system could be analyzed as a set of instrumentations – measures and processes, which information is used for a decision making process. According to this aspect, an accounting system is disclosed as having three variables – process, measures and decision level in different business environment. Information technology with its methods and systems (enterprise resource planning (ERP), information and communication technologies (ICT), electronic commerce, and business intelligence system) could be the tool for needed developments and improvements in organizations (Kloviene and Gimzauskiene, 2014). The conformity in every variable of accounting system could ensure the general conformity of accounting system with business environment – accurate, useful and timely information for decision making process in different levels (Fig. 1).

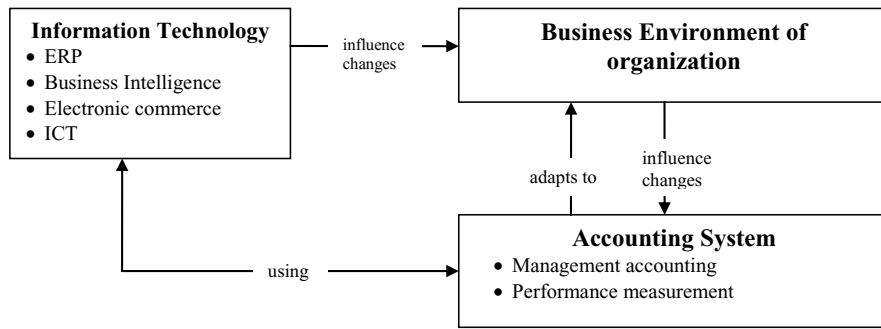


Fig. 1. Impact of information technology on conformity of accounting system with business environment
(Source: Kloviene and Gimzauskiene, 2014)

The developments in information technologies have significantly changed work environments and the management of businesses. The business environment of today has become more dynamic and competitive, due to the rapid developments of recent years. In such a competitive environment, it has become very important for managers to make consistent, logical and strategic decisions and develop instruments and models that provide financial information. According to this aspect the importance of accounting information has increased. The main objective of an accounting is to provide information for decision making. Provided information need to be useful, fast and suitable for organization. It means provided information need to conform to business environment. On the other hand it could be stated that accounting system is useful system in organization when it fits and conforms to environment of exact organization.

Research methodology. The research presented in this paper is based on a case study approach. Case studies support the theory and are suitable for examining the questions of “how” and “why” (Yin 2003). This is because the objective is to build a theory in the preliminary phases of a research study and to add new perspectives to previous research. The objective of a case study is not to create a statistical generalisation, but rather an analytical one. This methodology tries to generalise from case to theory; it does not attempt to extrapolate facts from the sample of the population (Martinez, C. Martinez, L. 2004).

Case study was performed in Lithuanian organization disclosing relations between business environment and accounting system of organization. The choice of organization for a case study was determined by such kind of criteria: (1) an expediency of analyses because selected organization implements and uses different performance measurement and accounting methods; (2) changes in strategy implementation process shows importance of conformity analyses; (3) limited studies in the case of conformity between performance measurement and business environment in service-sector companies. Assessment of business environment and accounting system was performed using interview method. Respondents were chosen from different management levels. This choice was determined presuming that objective situation could be disclosed summarizing information and opinion from different management levels. This ensures objective view of functional systems’ integration and availability in different management levels. Respondents of lower management level also top manager were interviewed using structured questionnaire.

External environment of organization was analyzed according to the frequency of changes in external environment, which means an environment is static or dynamic and in this case respondents need to mark frequency of listed changes using Likert scale (*changes in customer needs, in product/service, in pricing policy, in technology, in competition, in legislation*).

Reaction to environment was analyzed according to complexity – an organization tries to absorb or simplify external environment. Complexity was analyzed in four aspects using Likert scale – *strategy complexity, goal complexity, structural complexity and interaction complexity*. Strategic complexity was measured using two (cost leadership and differentiation) strategies by asking to indicate the importance 12 items. Goal complexity was assessed by asking to indicate the importance of 10 goals. Structural complexity was measured according to the level of formalization which was measured using 6 items that addressed the degree to which rules were observed in the organization. Interaction complexity was assessed by asking to indicate a number of different groups highly involved in resolving 7 strategic issues.

Accounting system was analyzed according to underlying *processes* for strategy implementation, *measures* and range of *decision making* in an organization. The processes, using Likert scale, were measured according to value chain by asking to indicate the importance of 6 activities. Measures and information usage for decision making were measured using 3 (operational, tactical, strategic) decision making levels by asking to indicate the usage of 28 measures from 6 main measures groups (financial, market, customer, internal process, employees, innovation and growth) for different decision making levels.

Conclusions and interpretation were made analyzing accounting system according to indicated environment of selected organization.

Data analysis. After the data were collected, a Cronbach's alpha coefficient confirmed the reliability of the questionnaire. Cronbach's alpha analysis was performed using the SPSS (Statistical Package for Social Sciences) tool to determine the measurement's reliability and validity. Each part's reliability corresponded and exceeded the recommended level of 0.6 (Cortina, 1993), indicating the existence of internal consistency. Also, Spearman's correlation coefficient was used to confirm the validity of the proposed framework by using SPSS software.

Results and interpretation. A case study was performed in a Lithuanian organization, disclosing the relationship between the business environment and the performance measurement system of an organization. The case study organization is a member of an international banking group which operates in retail and corporate banking in Lithuania. Research of accounting system was performed interviewing six respondents from different management levels (manager of customer service center; manager of private banking; manager of personnel department; executive director; CEO of middle region of Lithuania and member of Directors board).

Questions about business environment were involved into the first part of the questioner, where respondents ought to list indications of different environmental aspects. The dimension of external and internal environment was indicated according to the highest averages. Objective opinion was checked with quantitative interview and also according to mission, values and artifacts of an organization. Resuming results it could be stated that dominating external environment of organization is dynamic and dominating reaction of organization (internal environment) is absorption (Fig. 2). The correlation (0.411) between these two types of environment was indicated.

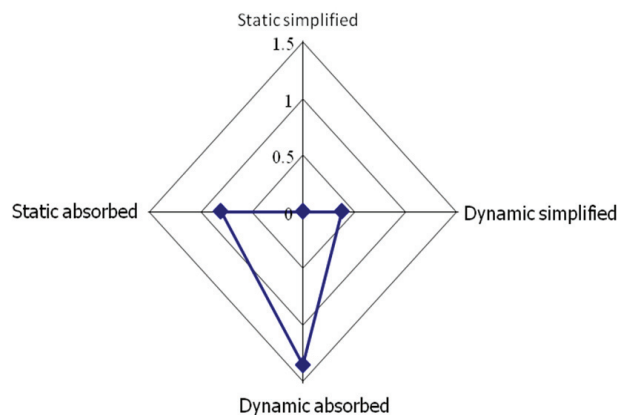


Fig 2. Dominating type of case study organization (Source: created by the authors)

Questions about accounting system were involved into the second and third parts of the questioner. Resuming research results in processes point of view, it could be stated that managers from different management levels understand the underlying processes of organization in different ways (*two respondents indicated underlying processes typical to differentiation strategy, two respondents indicated underlying processes typical to cost leadership strategy and two respondents indicated processes typical to both strategies*) and authorize to indicate the low level of process conformity. Also respondents declared that organization react to external changes through performance processes. Research results in the case of measures let to state that organization has a high demand for information (*all respondents indicated near all in questioner mentioned measures*) and authorize to indicate the high level of measures conformity. Resuming research results in decision making level point of view, it could be stated that organization has wide and flexible process of decision making (*top level respondents indicated that measures are counted in different decision making levels*). Respondents on an interview confirmed that exceptionally decisions are made without strict regulation, according to each other confidence and let to indicate the high level of decision making conformity. According to analyses made a **problem** district which could be indicated is detachment of underlying processes. This could be explained by the communication problem through different management levels of organization. Indicated problems could be deeper analyzed and tackled by improvements in accounting system.

IT was also researched during the interviews. The main IT systems are used for service and management purposes - ERP (Enterprise Resource Planing), CRM (Client Relationship Management) and different accounting systems to support the planning, control, evaluation, analysis and other purposes. Also respondents confirmed that bank investments to IT issues in organization is very important, especially in last year's. IT improvements helps case study organization to ensure competitive advantages by two main aspects – (1) investment and innovation in IT are saving costs in service area, (2) also it helps to ensure high quality and speed of services, what is the most important aspects for such kind of organizations as banks. Also analyzing IT in case study organization could be stated that according to dominating external environment and

internal reaction – reacts to frequent external changes, main features and functions of IT systems should be integration between different IT systems, availability for all employers and support an update of data bases.

According to case study could be stated that IT in analyzed organization can help to adapt and react to business environment. Reaction process could be ensured by changes in internal systems of organization supported by implementation of new information technologies in organizations. Accounting system is one of them and could be improved by deeper application of accounting information. Hence, information technologies used and implemented in accounting system of organization could help to adapt to changes in business environment. In this aspect it could be stated that information technology could help to improve functions of accounting system in organization when it is not compatible to business environment.

Conclusions

According to literature analyses, could be stated that information technology affects the accounting process in several ways. First, the accounting methods and knowledge of the business and industry has increased to ensure reliability and relevance of documents, reports, and data. Second, the accountant has to better understand the flow of transactions and related control activities to ensure validity and reliability of information.

According to research results the requirement for identification, analyses and verification of possible alternatives for solving unconformity problems of accounting system with business environment is found. According to results managers of organization could easier recognize possible direction of correction, estimate possibilities of their application. Aspect of mentioned development could be implemented by integration with informational technologies.

The level of influence of business environment on accounting system should be compatible to the level of adaptation to business environment and information technology could help to ensure this process. Information technology helps to ensure conformity between accounting system and business environment. When accounting system is not providing useful information for decision making process, information technology could be the tool for conformity process.

Scientific implications. The presented theoretical framework contributes to the literature of accounting by undertaking an analysis of an information technology that forms and ensures conformity process between accounting system and business environment in which organization operates and also by introducing the problems encountered in conformity identification process.

Practical implications. For practitioners, this study offers insights into accounting system opportunities in a different business environment in less extensively researched field of business – service-sector (banking) companies.

Limitations. The conclusions of this research are based on one bank, utilizing relevant document analysis and interview data collected from 6 respondents. Also accounting system and business environment sustaining objective instrumentality is evaluated by experience and subjective knowledge of the managers. Future researches may further investigate the issues addressed in this research by using a broader range of data.

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