

# Factor Affecting Investment Decision on Computerized Accounting System- Special Reference to Small and Medium Enterprises

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## Abstract

Small and medium enterprises face many challenges in the industry. In order to cope up with those challenges, companies need to align their business strategies with information systems. Information systems often provide competitive advantage to firms and a proper computerized accounting system could be one of the key factors for the success of business organizations. The objective of this research is to evaluate the factors affecting the decision making in IT investments, in particular Computerized Accounting Systems. In this regards, a survey was conducted among the registered SMEs in the Chamber of Commerce in 2012 from Polonnaruwa District of North Central Province in Sri Lanka. The collected data were analyzed using statistical software and found that the factors such as diversity of technology, user involvement, management support, software creditability and organizational factor are having positive relationship with investment decision on Computerized Accounting Systems and negative relationship with Management Knowledge.

**Keywords:** computerized accounting system, small and medium enterprises, investment decision

## Introduction

The rapid changes in information technology has resulted in depending of companies on performing business and brought to keep all transaction in an electronic form. Many small and medium firms in Sri Lanka started to use Computerized Accounting System (CAS). A number of researches highlights that business generally were disappointed with their new purchases of CAS. They did not get the benefits they expected, and the projects took substantially longer and cost more than anticipated. Tate (1999) and Ivancevich, et. al. (2010) stated that selecting the right accounting software is critical to any business. A wrong choice means incompatibility problems, functional limitations, and frustration, as well as workers and customers may become unhappy. The right choice means that a business can focus on the products or services that are relevant to its core business model rather than losing effort, time and money trying to overcome CAS problems.

The success of CAS usage depends not only on the investment, but also right choice of software, personal qualification, experience, management support and vendor supports. All these factors are commonly evaluated from economic, technical and social aspect (Asta Raupeliene and Linas Stabingis, 2003). And also the success of CAS depends on quality of information which system will produce. According to Xu (2009) the quality of information is one of the competitive advantage factors. Meal (2009) stated that the information produced by CAS is one of the basic resources of the organization. It has the influence on financial decision making such as operation, investment etc. Such decision will contribute to increase the performance of organization and create market value. Also Reman (1992) supported that incomplete or inaccurate data may adversely affect the competitive success of an organization. And also Nord, Jeretta Horn Nord and Xu (2005) state that poor quality information can have a significant social and business impact. Therefore, the investment on CAS could be at a risk due to the reasons of inadequate personal to use the system, technically inadequate to fulfill company's requirements, etc. Further inappropriate operation of the system could lead to losing the company performance. It should be assured that right personal and proper operations are taking place in operation.

Choosing a CAS system for any organization has never been easy, but again it has never been more difficult than it is right now (Meall 2009). Correctly choosing CAS can have positive influence on the efficiency of an organization's activity (Raupeliene and Stabingis, 2003).

SMEs are defined in a variety of ways by various countries using number of persons employed, amount of capital invested, amount of turnover or nature of the business, etc. not only different countries apply different definitions on the concepts of SMEs, even within counties, different regions and different institutions adopt varying definitions in this regard. In Sri Lanka, there is no clear definition for SMEs. Different government agencies use different criteria to identify SMEs. There are different terms used in different documents to identify this sector. Small and Medium Enterprises, Micro Enterprises, Rural Enterprises, Small and Medium activities, Cottage and Small Scale Industry, etc., are some of the terms frequently used. Using the size of capital and the number of employees as the criteria, the Industrial Development Board (IDB) defines a small industry as an establishment whose capital investment in plant and machinery does not exceeds Rs. 4 million (US\$ 42,000) and the total number of regular employees does not exceed 50 persons (Central Bank of Sri Lanka, 1998). The Department of Small Industries (DSI) classifies enterprises with capital investment less than Rs. 5 million (US\$ 52,500) and fewer than 50 employees as SMEs (Ponnamperuma, 2000)

### **Problem Statement**

As the business environment keeps on changing, managers need to thoroughly scan the environment before investing in an Information technology system. The reason is to identify the major factors that can be detrimental to the organization from reaping the potential rewards from their IT investments. As organizations continue investing huge sums of money towards IT, there has been a shift towards the process of IT investment decision making. Adopting a new technology into an organization is a complex and extensive procedure where ranging factors need to be taken into consideration such as economical, technical,

operational, legal and political feasibility. Fuller, et al., (2008). Inevitably, this has led to a risen concern for organizations to carefully study this particular factor when deciding on investing in new Computerized Accounting System. The question here is how to evaluate these factors in order to make justified decision? Many theories recommend different methodologies on how to evaluate these determinants.

### **Research Question**

Based on the above discussions, the question raised for investigation was “what are the factors affecting investment decision making on CAS of SMEs?”

### **Objective**

The aim of this research is to establish and evaluate the factors affecting the decision making in IT investments, in particular CAS. It also seeks to contribute to literature on the impact of the current financial crisis on making IT investment decisions.

This study aimed to:

1. Identify the factors which affect the investment decision on CAS in SMEs
2. To determine the extent to which the factors influence investment decision.
3. To find out the relationship between the influence factors and Investment decision process.

### **The Significance of the Study**

This study gets its importance for being the first study that discussed the investment decision on the computerized accounting systems for SMEs and the importance of the topic that it discussed; the computerized systems are exposed to many industries.

The significance of the study came from theoretical and practical contribution through revealing the importance of investment decision on CAS in the SME, so the decision-makers keep pace with technological developments in many industries in the world (Naimi, 2007). The contribution of this study is to encourage the decision-makers in investing on CAS will lead to a transition from scarcity of information to the state of abundance of information, as well as to the quality of appropriate information that give objectivity and integrity.

### **Literature Review**

Yau and Auyeun (1995) studied the risks of implementing a CAS, and they found that they were related to some problems such as; users are opposing the adoption of new techniques; the availability of “off-the-shelf” software (as a cheaper alternative to the tailored made software) implied that users have to try to fit their requirement to the software’s capabilities; very few CAS actually perform sophisticated management and cost accounting systems; Ivancevich et al., (2010) studied the factors that influence the CAS selection and those that lead to satisfaction. They surveyed a large number of professionals, and questioned several suggested factors that could affect the software’s selection and satisfaction.

IT investments: “It is the acquisition of computer hardware, network facilities, or pre-developed software or any “in house “systems development project that is expected to add to or enhance organization’s information systems capabilities and produce benefits” (Bacon, 1992).

The decision making process on information system is quite limited in various studies. According to wang (2006), the decision making process on investment is composed in different stages such as analysis and planning, evaluation of costs and benefits, selection and implementation and post implementation evaluation.

Decision making: “it is a process that involves a sequence of actions with the identification of an Information system related problem issue or opportunity and ends in the approval of an IT project” (Boonstra 2003).

It is important to use available data since an organization use the data which can be either from internal or external environment while in the process of decision making. While embarking in making decisions, it is important to use any available source of data since an organization can analyze this data and use it for future decisions, the data could be either from the external/ internal environment. According to Saunders& Jones (1990) decision makers use various Medias to collect the data around the organizational environment.

#### **Factors Affecting IT Investment Decision**

There are numerous factors that affect the decision making of adopting CAS. Some of the organizational factors that influence the decision making on CAS investments are; size of company: top management support: organizational culture: business factors, human resources, external pressure or support: technological factors, political factors, economical factors and technological factors etc.

Organizations are characterized by business complexity in regardless size which is a need for coordination and control of business activities which in turn, is related to the complexity of the information system (Howard and Hine, 1997; Yasai- Ardekani and Haug, 1997).

Organizations are generally characterized by high business complexity in regardless of the size, either big or small, which is a critical need for coordination and control of the business activities which in turn, is related to the complexity of the information system (Howard and Hine, 1997; Yasai- Ardekani and Haug 1997). Further Kimberly (1976) argues that different approach should be applied on the organization and further a direct relationship with the size of the organization and the percentage of the organization where the system has been implemented.

Mangers make decisions about information technology investments based on factors, including capabilities required now and in the future, the role of technology in the industry, the level of investment, and the clarity with which technology investments are viewed, and the role and history of information technology in the firm (Bacon (1992).

Top management support is another important in the decision making on CAS system. According to Wang (2007), the function of top management involves developing an

understanding of the capabilities and limitation of the proposed system, setting goals, and then communicating the organization Strategy to all employees which can increase the benefits of the system.

Technological factors deals with the rate of technological advancement. With the rapid changes in technology, it is mandatory for organizations to look into the emerging technology in the market so as to adapt to the technological change. The use of technology in organizations helps in numerous ways such as reduction of costs, increased productivity and Political Factors enhanced business processes so it is crucial for an organization to be continuously updated with future changes with technology (Campell and Craig, 2005).

## Research Methodology

### Overview of the Theoretical Framework

The model (Figure1) is the guiding model on which the theoretical framework is built. It helps the reader to understand the thinking process of the authors and provides a clear relationship between the different factors and the process of CAS investment decision making.

The figure 1 depicts factors which the researchers identified as the most significant and relevant to take into considerations when identifying the variables that influence the decision making process of making on CAS investments.

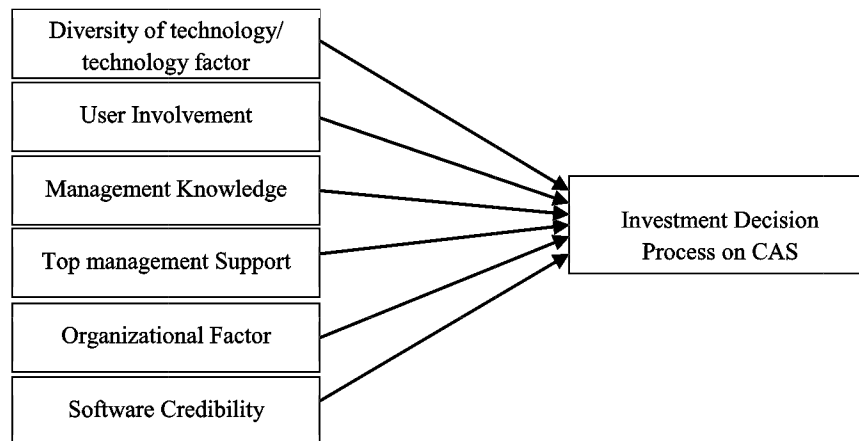


Figure 1. Theoretical Framework

### Hypothesis

H<sub>1</sub>: There is a positive relationship between diversity of technology and Investment Decision process on CAS

H<sub>2</sub>: There is a positive relationship between user involvement and Investment Decision process on CAS

H<sub>3</sub>: There is a positive relationship between management knowledge and Investment Decision process on CAS

H<sub>4</sub>: There is a positive relationship between top management support and Investment Decision process on CAS

H<sub>5</sub>: There is a positive relationship between organization factor and Investment Decision process on CAS

H<sub>6</sub>: There is a positive relationship between software creditability and Investment Decision process on CAS

Operationalization Table 01, describes the variables that described in the previous researchers. In this study decision making process measured by constructing a relationship with diversity of technology, user involvements, management Knowledge, Management Support, Software Creditability and Organizational Factor

**Table 1.** Operationalization

Variable	Concept	Measures	Source
Decision Making Process	Methodology and steps	<ul style="list-style-type: none"> <li>■ Need Identification</li> <li>■ Problem Analysis</li> <li>■ Analysis of alternatives</li> <li>■ Selection</li> </ul>	Applegate (1996) Williamson (1997) Grover et.al.(1997),(1998)
	Participation	<ul style="list-style-type: none"> <li>■ Source of inputs</li> <li>■ Source of decision making</li> <li>■ Decision authority</li> </ul>	
Factor Influencing Investment Decision	Diversity of Technology used	<ul style="list-style-type: none"> <li>■ IT portfolio application and Hardware</li> </ul>	Weill and Olson (1989), Clemons and weber (1990), Farbey et al.(1992),
	User Involvement	<ul style="list-style-type: none"> <li>■ User Participation and input</li> <li>■ Amount of functional overlap between multiple department</li> </ul>	Boynton et al (1994), Applegate et al ,(1996), Williamson(1997),
	IT Steering Committee	<ul style="list-style-type: none"> <li>■ Existence of a steering committee</li> </ul>	Grover et al (1997, 1998), Thorp et al (1998)
	Software creditability	<ul style="list-style-type: none"> <li>■ Past success/failure</li> <li>■ Regulation and Credentials</li> <li>■ Ability to deliver</li> </ul>	
	Management Knowledge	<ul style="list-style-type: none"> <li>■ Perceived CAS competency and proficiency of management knowledge</li> <li>■ CAS comfort level</li> <li>■ Experience and training</li> <li>■ CAS reporting relationship within the organization</li> </ul>	
	Management Support	<ul style="list-style-type: none"> <li>■ Endorsement and support from top management</li> <li>■ Project sponsor</li> <li>■ Project visibility</li> <li>■ Management participation</li> <li>■ Centralization and decentralization</li> <li>■ Timing</li> </ul>	
	Organizational factor	<ul style="list-style-type: none"> <li>■ Organizational structure</li> <li>■ Organizational culture</li> <li>■ Internal politics</li> <li>■ Organizational politics and procedure</li> </ul>	

### Research Methods and Sampling

This study is based on quantitative approach which uses numerical methods. Data were collected using structured questionnaire from 100 SMEs in Polanaruwa District. The construction of the questionnaire is basically based on the literature survey related this study. The questionnaire consists of two major parts. First part is the about demographics information of the respondents and the second part is about data related to research variables.

### Sampling

There are 249 registered SMAs as at 2012, in Polanaruwa district. A simple random sample technique was used to collect data from SMEs in the Polanaruwa district. Accordingly, 100 questionnaires were distributed among the owners/Manager in the selected SMEs. These individuals are targeted because they are the people who implement the accounting system in the SMEs. However, we were able to collect only 60 filled questionnaires.

## Data Analysis and Results

### Questionnaire Development

The questionnaire consists of two parts. The first part deals with the dependent variables which describe the factors influencing CAS investment decision. The second part deals with the dependent variable which is a Decision Making Process. This section analyses how the factors influencing CAS investment decision impact on the decision making process in the SMEs and satisfaction level of investment decision on CAS were obtained through 31 questions. Data were described by using the factor analysis. Frequency, regression, ANOVA and correlation are used to describe the data.

**Table 2.** Demographic variables

	Mean	SD
Age of the Business	2.07	1.006
System area using	4.20	1.338
Cost of the system	2.02	.792

The mean value of age of the business is 2.07. The standard deviation is 1.006. The length of the mean is between 1.064 to 3.076. The values are not closer to the mean value. The standard deviation of the using of System area also has a high value, 1.338. It gives the high variation value to the mean value of 4.20. The SD value of the Cost of the System is less than the one .792, but nearest to one. It shows the less amount of variance than the others is between 1.228 to 2.812. Its little bit closer to the mean value.

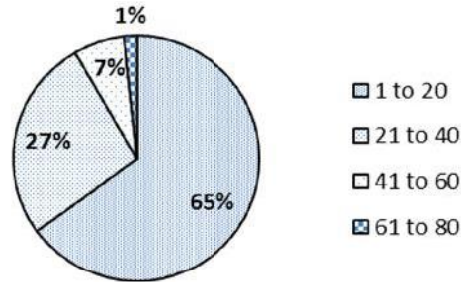


Figure 2. No of Employees

According to the Figure 2, 65% percentages of number of employees are under the category of 1 - 20. Only 1% of employees are in above the number of 60. 27% percentage of them is under the category of 21 – 40 employees. It described that most of the SMEs are having few number of employees in their organizations

According to the capital structure of the organization, figure 3 explains that 68% percentages of them are having the capital of more than one million. 32% of them are having the capital between Rs.500,000 to Rs.1,000,000.

When we compared the age of the business 8% of them are running their business for more than fifteen years. And also 23% percentages of them are running their business the between the age of years 5 to 10, as well as 34% of them are running their business since the year 10 to 15. When the organization having the high age limit it seems that they have well established in the business as well as having the high amount of capital.

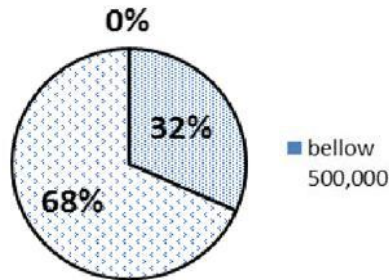


Figure 3. Capital of the Organization

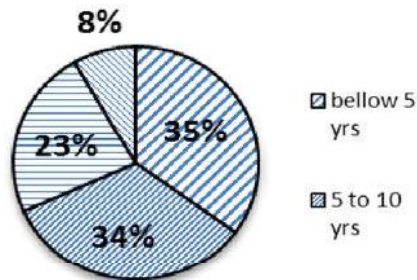


Figure 4. Age of Business



According to the frequency data it seems most of the SMEs who has engaged with the Computerized Accounting are satisfied their decision on investing in CAS. There are some barriers with the employee knowledge and the experience in using system. According to the above data nearest to 5 percentage of them are in disagree mood with their employment knowledge and the experience with system.

**Relationship between Factor Influencing CAS Investment Decision and Decision Making Process**

The main objective of this study is to explore the relationship between the factor influencing CAS investment decision and decision making process. The data were subjected to a factor analysis using the SPSS version 16.0.

**Regression Analysis Results**

**Table 3.** ANOVA analysis

	Model	Sum of Squares	Df	Mean Squares	F	Sig.
1	Regression	13.840	7	1.977	2.277	.042
	Residual	45.160	52	.868		
	Total	59.000	59			

According to the Table 3, the significant value is .042 that is less than the 0.05. It explains the variables are significant.

Factors such as diversity of technology, diversity of technology, User Involvement, Management Knowledge, Management Support, Software creditability, Organizational factor were found to be significantly influencing Investment decision making process of CAS.

$$Y = 0.355 + 0.155X_1 + 0.05X_2 + 0.017X_3 + 0.181X_4 + 0.065X_5 + 0.352X_6 - 0.122$$

Where

Y = Investment decision making process

X<sub>1</sub> = diversity of technology

X<sub>2</sub> = User Involvement

X<sub>3</sub> = Management Knowledge

X<sub>4</sub> = Management Support

X<sub>5</sub> = Software creditability

X<sub>6</sub> = Organizational factor

All six dependent variables have positive relationship with the deepened variable and company type (which has -0.122 beta values) has negative relationship with the investment decision process. It describe that company type one is best than company type two. When we move to the company type two it has negative impact on investment decision.

The independent variable (X<sub>1</sub>) are positively impact on investment decision, if X<sub>1</sub> variable increase in one Y will be increased by 0.155. if X<sub>2</sub> variable increase in one Y will be increased by 0.05, if X<sub>3</sub> variable increase in one Y will be increased by 0.017, if X<sub>4</sub> variable increase in one Y will be increased by 0.181, if X<sub>5</sub> variable increase in one Y will be increased by 0.065, if X<sub>6</sub> variable increase in one Y will be increased by 0.352.

(Company type 1= Mechanical, company type 2=Service center, company type 3=Retail Business, company type 4=Garment Business, company type 5=Small Entrepreneurs)

**Table 4.** Correlation Table

	X 1	X 2	X 3	X 4	X 5	X 6	Y
X 1	1.000	.253	.437	.241	.364	-.193	.166
X 2		1.000	.094	.052	.144	-.021	.085
X 3			1.000	-.166	.239	-.350	-.048
X 4				1.000	.119	.152	.265
X 5					1.000	.149	.212
X 6						1.000	.354
Y							1.000

According to the correlation factors such as diversity of technology, diversity of technology, user involvement, management support, software creditability, and organizational factor were found to be positively influencing investment decision making process of CAS and management knowledge has negative relationship with the investment decision making process of CAS.

## Findings and Conclusions

The main objective of this research is to identify factors of investment decision of computerized accounting systems in SMAs. Small and medium enterprises face with many challenges in the industry, in order to keeping up those, companies need aligning their business strategies with information systems. Information systems often provide competitive advantage to firms and also properly implemented computerized accounting system is one of the key success factors in their business area. This research focused on the factors affecting the decision making in IT investments, in particular Computerized Accounting Systems. In this regards, a survey was conducted among the registered SMEs in Chamber of Commerce in 2012 from Polonnaruwa District of North Central Province in Sri Lanka. The collected data were analyzed using statistical software. According to the frequency data, it seems most of the SMEs have engaged with the Computerized Accounting system and further shows that the decision makers of SMAs are satisfied with their decision on investing in CAS. There are some barriers with the employee knowledge and the experience in using system. According to the above data nearest to 5% percentage of them are in disagree mood with their employment knowledge and the experience with system.

The ANOVA table highlights the significant value as 0.042 that is less than the 0.05. So, the variables are significant. The model can be accepted. So, finally we conclude that the dependent (Diversity of technology, Diversity of technology, User Involvement, Management Knowledge, Management Support, Software creditability, Organizational factor) variables are successfully impact on the independent variable (Investment decision making process of CAS). Hence, finally we conclude that the factors such as diversity of technology, diversity of technology, user involvement, management support, software creditability and organizational factor are having positive relationship with investment decision on computerized accounting systems and negative relationship with management knowledge.

## Recommendations

The formality of the evaluation and decision-making processes for CAS investments is directly correlated with the formality of a firm's organizational structure. Therefore, organizational factors are the main concern in investing on CAS.

Higher levels of management involvement, coupled with demonstrated and visible commitment and support from the executive ranks, will positively influence a firm's use of CAS and the benefits derived from CAS.

It is better to provide some professional training to the employee regarding the system before implementing the right system. Once they are aware of the technical know-how of the system they will be able to understand it fully and be able to work in an efficient manner.

There is a need to pay attention to the working human resource in the SME in terms of ongoing training to use the computerized accounting system and the work of field visits to the industries that have applied this system in order to benefit and gain knowledge.

It was observed that some of them are facing difficulties due to the lack of knowledge. So, it's better to give a sufficient training before installing the system.

## Reference

- Alkary, A. (2005). Cost of investment in information systems and its relation with organizational performance - an applied study on the commercial banks in Jordan.
- Applegate, Lynda M., McFarlan, F. Warren, and McKenney, James L. (1996). Corporate information systems management: The issues facing senior executives (4th ed.). Chicago: Irwin.
- Asta Raupeliene, & Linas Stabingis. (2003). Development of a model for evaluating the effectiveness of accounting information systems. *EFITA 2003 Conference*, Debrecen, Hungary.
- Bacon, C.J. (1992). The use of decision criteria in selecting information systems/ Technology investments. *MIS Quarterly* ( 16:3).
- Boonstra, A. (2003). Structure and Analysis of IS Decision-Making Process. *European Journal of Information Systems* (12).
- Boynton, Andrew C., Zmud, Robert W., and Jacobs, Gerry C. (1994). The influence of IT management practice on IT use in large organizations. *MIS Quarterly*, 18 (3), 299-318.
- Campbell, D. & Craig, T. (2005). *Organizations and the Business Environment* (2nd edition). Oxford: Butterworth-Heinemann
- Clemons, Eric K. and Weber, Bruce W. (1990). Strategic information technology investments: Guidelines for decision making. *Journal of Management Information Systems*, 7 (2), 9-28.
- Farbey, Barbara, Land, Frank, and Targett, David. (1992). Evaluating investments in IT. *Journal of Information Technology*, 7, 109-122.
- Fuller, M., Valacich, J. S. & George, J. F. (2008). *Information Systems Project Management – A Process and Team Approach*. Prentice Hall, New Jersey.
- Grover, Varun, Fiedler, Kirk D., and Teng, James T. C. (1997). Corporate strategy and IT investments. *Business and Economic Review*, 43 (3), 17-22.
- Grover, Varun, Teng, James T. C., and Fiedler, Kirk D. (1998). IS investment priorities in contemporary organizations. *Communications of the ACM*, 41 (2), 40-48.

Third Annual Research Conference, ARC 2014

- Ivancevich, S. H., Ivancevich, D. M., & Elikai, F. (2010). Accounting software selection and satisfaction. *The CPA Journal*, 80(1)
- Meall, L. (2009). How to choose large enterprise software. *The Accountancy Age Guide Series*, (21st May).
- Nord, G. D., Jeretta Horn Nord, & Xu, H. (2005). An investigation of the impact of organization size on data quality issues. *Journal of Database Management*, 16(3),.
- Naimi, Jalal Mohammed, 2007, Information Technology for Management: transformation of organizations toward digital economy, *Journal of Public Administration*, Riyadh, section 27, volume 3.
- Ponnamperuma, EN (2000), SMEs in Competitive Markets, Country Paper, Asian Productivity Organization, Tokiyō (295-313)
- Redman, T. C. (1992). *Data quality: Management and technology*. New York: Bantam Books.
- Saunders, C., & Jones, J.W. (1990). Temporal Sequences in Information Acquisition for Decision Making: A Focus on Source and Medium. *Academy of Management Review*.
- Sutton, J. (1998). *Technology and Market Structure*. Cambridge, MA: MIT press.
- Tate, J. (1999). How to select new business software. *Financial Management*, 77(4), 52-54.
- Thorp, John and DMR's Center for Strategic Leadership. (1998). *The information paradox: Realizing the business benefits of information technology*. Toronto: McGraw-Hill.
- Wang, Y. (2006). *Information Technology Investment Decisions and Evaluation in Large Australian Companies: Theory and Practice Compared*. Doctor of Philosophy, Griffith Business School.
- Weill, Peter and Olson, Margrethe H. (1989). Managing investment in information technology: Mini case examples and implications. *MIS Quarterly*, 13 (1), 3-18.
- Williamson, Miryam (1997). Weighing the nos and cons. CIO [On-line]. Available:
- Xu, H. (2009). Data quality issues for accounting information systems' implementation: Systems, stakeholders, and organizational factors. *Journal of Technology Research*, 1, 1-11.
- Yau, C., & Auyeung, P. K. (June 29 - July 2, 1995). Issues of accounting information system for the year 2000. *The Second Pacific Asia Conference on Information Systems, PACIS*, Singapore.