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Malviya Nagar, New Delhi - 110017.
E- Mail: info@enrichedpublication.com
Phone :- +91-8877340707

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Aims and Scope

The Journal of Accounting Research & Audit Practice is a peer reviewed academic journal. The main focus of our journal is to encourage research from areas of social and environmental critique, exploration and innovation as well as from more traditional areas of accounting, finance, financial planning and banking research. The Journal of Accounting covers a wide variety of topics including:

- Auditing
- Accounting Information Systems
- Accounting Education
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- Management Accounting
- Public Sector Accounting
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Contents

Public Accounting in the New Millenium: On the Edge of Chaos

John R. Kuhn
College of Business, University of South Florida, Tampa, FL, United States of America

A B S T R A C T

Change is a constant feature of organizational existence. Successfully managing change requires an understanding of the environment in which an organization operates. The complex and interconnected world in which public accounting operates presents many challenges to the traditional neo-classical view of research and management. Awareness of the constantly-changing, networked environment and the dynamics of agent interactions offers distinct competitive advantages to the astute. The current paper strives to convey the appropriateness and necessity for recognizing the public accounting profession as a complex adaptive system (CAS) that operates in an ever-changing, unpredictable environment impacted by local and global politico-economic entities, professional organizations, clientele, internal organizational members, higher education institutions, technological advances, and others. Drawing on complexity theory, the paper develops and presents testable propositions to examine the public accounting profession as a CAS with the express purpose of stimulating more holistic research efforts in accounting.

Keywords: Complex adaptive system; Complexity theory; Public accounting profession; Networks.

Introduction

The old adage "nothing is certain but death and taxes" could reasonably be modified to include change. Change is a constant feature of organizational existence; those that can adapt survive, those that cannot wither away. Successfully managing change first requires an understanding of the environment or system in which an organization operates. This paper argues the necessity for and appropriateness of recognizing the public accounting profession as a complex adaptive system (CAS) that operates in an everchanging, unpredictable environment impacted by local and global politicoeconomic entities, professional organizations, clientele, internal organizational members, higher education institutions, technological advances, and others. Viewing public accounting in such light will hopefully provide insight into possible methods to successfully research the profession in an ever-flattening, continuously evolving world full of competing interests and players with unpredictable events lurking around every corner.

Mainstream accounting research and literature operates under neo-classical economic assumptions utilizing theories of rational, utility-maximizing behavior such as that ingrained in the efficient markets prices fully reflect all publicly available information (Fama 1970).

The general reductionist approach of this research attempts to reduce the complex down to the simple by creating regression models of phenomena to analyze individual components. These theories fail to incorporate or acknowledge differences in individual behavior and the impact of that behavior on capital markets, judgment and decision-making, as well as other areas of accounting and, more broadly, fail to account for the interconnectedness of the system the phenomenon functions in.

Practitioners, regulators, and certain pockets of academics appear disenchanted with EMH due to observed irrational market behavior evidenced by under-reaction of prices to large earnings changes, odd ratios of prices to fundamentals, and other statistics derived from fundamental accounting analyses (Bloomfield 2002). Tim Bell, a managing partner with KPMG, questions the reductionist research approach:

"In our time, the confidence, maturity and promise of a science should be measured not by its power to reduce the complex to the simple … but instead by its willingness to study complexity with advanced methods under descriptions that respect the reality of what is being studied." (Bell et al., 1997, p. 1).

Malkiel (2003) concludes stock markets are more efficient than some recent academic studies indicate but are far less predictable as well while Chambers (1993) challenges the neo-classical assumption, in general, that earnings releases dominate stock price changes:

"There are scores of events, or bits of information about events, that may influence the price of a stock at any point of time … <investor> response is the outcome of a complex evaluative process, of states and stimuli and needs and preferences, at a stated time."

To date, however, no alternative theory offered to explain market inefficiency has been widely embraced and therefore, studies showing mispricing are viewed as statistical flukes resulting from fishing expeditions (Fama, 1998; Kothari, 2001; Bloomfield, 2002). Reality may be more complex than the neo-classical approach permits. Perhaps this narrowness accounts for the inability to fully explain long-standing phenomena such as the post-announcement earnings drift and the scarcity of alternate theories facilitates continued acceptance of imperfect theories.

Historically, many non-believers of the neoclassical approach have been intimidated by the "scientific" bluff and bluster of academic research, especially when the research includes highly abstract mathematical notations (Mouck 2000). The Santa Fe Institute (SFI), a private research organization founded in 1984, developed an alternative view of reality (including economic and social contexts) grounded in the natural sciences that focuses on an evolutionary model of continual change, instability, and adaptation appropriately termed CAS. The group of scientists that comprise SFI hail from many disciplines and backgrounds including physics, biology, mathematics, economics, psychology, decision sciences, etc.

Organizational theorists have embraced the concepts of CAS for nearly 20 years as a viable lens to view organizational change, leadership, strategic management, and other organizational behavior from a holistic/contextual perspective; early examples include Tushman et al. (1986),

Cartwright (1991), Stacey (1992), Wheatley (1992), Zimmerman (1993), Levy (1994), & Mintzberg (1994). CAS theory views organizations as open, non-linear dynamical systems that adapt and evolve in the process of interacting with their environments where outcomes of their actions are unpredictable, but not random. The key to successfully managing a CAS is to keep the organization operating 'on the edge of chaos': too much stability results in stagnation and ultimate organizational death while too much chaos can cause an organization to flounder under the weight of excessive change.

Recently, other business disciplines started to espouse the virtues of complexity science and undertake research activities from a CAS perspective. For instance, Jacucci et al. (2006) establishes the need for the use of complexity theory in a special issue of Information Technology & People dedicated to complexity theory and information systems research. An exhaustive literature review leading to this study revealed scant CASrelated research in accounting, regardless of field specialty. A few management accounting articles (O'Brien et al., 1996; Ahrens et al., 2004) and a study of changes in accounting (Burns, 2000) touch on aspects of complexity but only in passing. Mouck (1998; 2000) truly introduces CAS to the accounting literature by exploring SFI studies and their implications for capital investment and budgeting theories and overall capital investment strategy that directly challenges neo-classical assumptions for capital markets. Sutton et al. (2006) presents complexity theory as an explanation for the impact of enterprise resource planning (ERP) systems on organizations contending that ERP systems represent the antithesis of the model for a best performing organization by stifling innovation through a highly ordered structure that struggles to respond to competitive pressures.

Continuing the groundwork laid by Mouck (1998; 2000) and Sutton et al. (2006) this paper proposes CAS as a necessary and viable theoretical approach to study accounting in the new millennium. The paper examines the public accounting profession in the context of the CAS framework constructed by

Choi et al. (2001) and continues as follows: first, an overview of the CAS theoretical foundation and the Choi et al. (2001) framework; second, application of CAS concepts and principles to the public accounting profession and development of testable propositions; and lastly, discussion of implications theory building and research.

An Overview of Complex Adaptive Systems

The theory of CAS arose from the complexity theories spawned in the natural sciences to develop mathematical models of systems in nature. Many variations of the definition and key premises of CAS exist. A quote from John H. Holland, one of the original researchers in the area, best depicts the general principles underlying CAS:

"A Complex Adaptive System (CAS) is a dynamic network of many agents (which may represent cells, species, individuals, firms, nations) acting in parallel, constantly acting and reacting to what the other agents are doing. The control of a CAS tends to be highly dispersed and decentralized. If there is to be any coherent behavior in the system, it has to arise from competition and cooperation among the agents themselves. The overall behavior of the system is the result of a huge number of decisions made every moment by many individual agents" (Waldrop, 1992).

Although seemingly random, the chaotic nature of the dynamic interactions among CAS agents actually contains a hidden order in which patterns of behavior occur in irregular but similar forms and can be modeled to simplify the complex; CAS examples include economies, social systems, ecologies, cultures, politics, technologies, traffic, weather, etc. (Dooley, 1997). To examine a CAS, Choi et al. (2001) develop a comprehensive framework comprised of three interacting and intertwined foci: 1) internal mechanisms, 2) an environment, and 3) co-evolution. The remainder of this section reviews these foundational concepts and principles in more depth.

Internal Mechanisms

Agents and Schema

Agents represent the building blocks of a CAS and are semi-autonomous units which seek to maximize some measure of goodness, or fitness, by evolving over time where fitness corresponds to the general well-being of the system (Dooley, 1997). Giddens (1984) defines agency as the ability to intervene meaningfully in the course of events. Therefore, by definition, a system must include agents that can impact the state of the system by their actions in order to be considered a CAS. Examples of agents in a social CAS include individuals inside firms,firms comprising a profession, or even a profession operating in a global marketplace. The latter two illustrate a network of multiple CASs functioning in concert. Defining agents and CASs thus depends entirely upon the perspective of the onlooker.

CAS agents interact with other agents, both within their own CAS as well as with the environment which may include other CASs and their respective agents, commonly referred to as meta-agents (Benbya & McKelvey, 2006). The exchange of information and resources between agents facilitate the generation of schema that Schein (1997) defines as the norms, values, beliefs, and assumptions shared among the collective that dictate the manner in which agents interpret information and perform actions. Organizational leaders often declare formalized mission statements, create codes of conduct, ethic statements, etc. that represent core values and guide the behavior of agents, in particular, the interaction between agents and other stakeholders (e.g. employees, customers, vendors, and other related parties).

Within the bounds of these “rules of behavior” and shared values, agents strive to increase the fitness of their system, both locally and globally (Choi et al., 2001). The actions of agents can result in non-linear impacts to the local system and network of systems depending upon the interconnectedness of the system(s); a more connected system will generally experience larger ripple effects throughout as agents interact in a dynamic fashion. Complex system behavior, therefore, can occur when multiple non-linear processes interact (Choi et al., 2001).

Self-Organization and Emergence

Self-organization refers to the emergence of a pattern of order from a simple set of rules in an interconnected network without the intervention of a central controller (Anderson, 1999; Luoma, 2006; Mason,2007). The self-organization process occurs from the bottom up through the interactions and inter-relationships of agents creating new structures or behaviors unintentionally. These emergent phenomena seem to have a life of their own with their own rules, laws, and possibilities (Goldstein, 1994; Zimmerman et al., 1998; Choi et al., 2001).

Choi et al. (2001) present the phenomenon of flocking birds as an illustration from nature of the self-organization process. The flocking pattern (i.e. the new structure) neither occurs because of a predetermined plan or unilateral control by the lead bird. The pattern emerges from the actions of individual birds acting upon simple rules based on local information. Each bird determines the speed and direction by flying toward the center of the flock, mimicking the velocity of the neighboring birds, and staying a safe distance away.

From an organizational perspective, individual managers cannot predict or plan long-term outcomes

(Wilkinson & Young, 1998; Frederick, 1998; Kelly, 1999; Mason, 2007), but can adapt the simple rules to manage movement of the aggregate (i.e. the CAS) between stability and chaos (Lewin, 1993; Mason, 2007). The aforementioned examples of mission statements, codes of conduct, and ethic statements embody the underlying principles of simple rules that guide agent behavior, rather than directly controlling the eventual outcome of dynamic agent interaction. Examples of selforganization and emergence in the business setting include development of new strategies (Conner, 1998), development of marketing tactics (Forrest & Mizerski, 1996), self-directed teams (Gault & Jaccaci, 1996), and growth of strategic alliances (Wilkinson & Young, 1998).

Connectivity

A key premise of CAS revolves around the concept of connectivity: the linkages of agents inside the system with each other and to neighboring systems. Different elements (agents, meta-agents, other CASs) continuously interact producing intertwined reactions nearly impossible to anticipate or trace afterwards (Luoma, 2006). As the number of agents increase, the volume and layers of relationships, both direct and indirect, grow exponentially to such a complex state that differentiating between cause and effect becomes too onerous.

The theory of reductionism asserts that complex data and phenomena can be explained by a process of reducing to simpler terms and analyzing the components independently to gain insight into the whole. Bettis & Prahalad (1995) and Dent (1999) argue the reductionist approach fails to effectively provide knowledge of the whole when studying organizations due to their complex nature. Viewing organizations as a CAS requires a holistic focus on the system in aggregate, not individual agents or pockets of agents. The performance of the whole cannot be enhanced by optimizing the performance of each individual agent nor should the problem with one agent be examined in isolation from the system (Luoma, 2006). A wider context must always be at the forefront promoting examination of the unit in the broader perspective of agent relationships, dependencies, and downstream effects. Analysis of these interconnected relationships in a CAS offers a distinct opportunity to make the most of the agent diversity inherent in the system facilitating richer interpretations of the environment and fostering creative solutions.

Dimensionality

Dooley & Van de Ven (1999) define the dimensionality of a CAS as the degrees of freedom that individual agents within the system have to enact behavior in a somewhat autonomous fashion. Controls such as rules and regulations, budgets, limits of authority, etc. constrain agent behavior and thus reduce dimensionality and change the complexity of the system's aggregate behavior (Stacey, 1995; Thietart & Forgues, 1995; Glass, 1996; Choi et al., 2001). The CAS becomes predictable, stable, and less flexible. CAS researchers refer to these constraints as negative feedback in the sense the system works to maintain some stable condition where deviations lead to corrective action. When agents are allowed more autonomy to make decisions locally, outcomes then have the ability to emerge and cascade throughout the system possibly leading to the generation of more creative solutions and competitive advantage. This emergence reflects the concept of positive feedback where the system works to reinforce the phenomena increasing the overall effect. As an example, two scientists working together potentially can advance more rapidly than if in isolation due to the opportunity to leverage the unique perspectives, background, and knowledge each individual offers. Increased dimensionality thrives on positive feedback.

Environment

The environment in relation to a CAS depends entirely upon the scale of analysis chosen. For a CAS defined as the supply chain function of a manufacturing company, internal agents may consist of the employees in the production planning, inventory management, and warehouse departments that interact with other potential internal CASs such as the purchasing and accounting departments and even executive management. Externally, meta-agents may include customers, suppliers, and transportation vendors. An expanded scale might consider the manufacturing company, in aggregate, as the CAS which interacts with numerous other meta-agents in addition to the ones that interface with the supply function such as regulatory agencies, corporate shareholders, taxing authorities, etc. Regardless of scale chosen, Choi et al. (2001) characterize environments as dynamic and rugged.

Dynamism

The Merriam-Webster Online Dictionary defines dynamism as “a theory that all phenomena can be explained as manifestations of force” (Merriam-Webster, 2007). CASs experience many sources of force, internally and externally. While a CAS attempts to emerge through agent interaction and proactively influence other neighboring CASs, the external environment simultaneously exerts pressure on the CAS causing a reaction that, in turn, affects the environment. Complexity theory posits that a CAS both reacts to and creates its environment through experiences of positive and negative feedback (Choi et al., 2001).

The constantly changing relationships among agents, between CASs, and with the environment result in changes to the schema organizations incorporate into their day-today interpretations of reality and behavior. The emergence of the Internet offers an excellent example of a dynamic change in the environment. The Internet delivered broadbased changes to the organization of economic activity so profound to warrant the title of a revolution; the declining cost of information led to increased business traffic, greater information access, personal autonomy in local decisions, and ultimately, greater dispersion of economic activity (Feldman, 2002). A number of simultaneous developments resulted in positive feedback that reinforced and strengthened the Internet movement: expanding personal computer use, technological advances in hardware and software, increased awareness by users, improvements in telecommunications, falling technology prices, etc. (Luoma, 2006).

As the Internet fever began to take hold, new competitors emerged for traditional brick and mortar companies. Barnes and Noble operates the largest chain of bookstores in the U.S. In 1997, the company surpassed the $2 billion revenue mark yet encountered a new competitive threat in Amazon.com, a two-year old online bookseller with 1997 revenues of $148 million, an increase of 840% over the previous year, and which subsequently reported 1998 revenues of $610 million. Barnes and Noble saw the writing on the wall: the Internet would upend the traditional bookselling business model. In response to the changing environment, Barnes and Noble launched an online platform to sell books and eventually developed an in-stock inventory of over 750,000 titles ready for immediate delivery and eight million new, out-of-print, and rare books– both of which the company claimed were the largest in the industry (Answers.com, 2007). The experiences of Barnes and Noble and many others during the early years of the Internet demonstrate the interaction of numerous CASs and the broader effects of agent actions in a dynamic environment.

Rugged Landscape

By nature, the eventual outcomes of agent interaction in CASs are unknown and unpredictable. CAS researchers represent the potential states that a CAS can attain in a dynamic environment as a rugged landscape with many hills and valleys (Kauffman, 1995; Choi et al., 2001). The highest point in the landscape symbolizes the optimal state of the system. However, many system components (agents) operate in a tightly, coupled manner each contributing to the overall direction of the system. The optimal state becomes difficult to locate as many local optima exist for the individual components. Further exasperating the complexity of a CAS, environmental pressures force the landscape to change eliciting system members to exploit existing knowledge and explore new knowledge (March, 1994) necessary to overcome the uncertainty imposed by the environment and ensure survivability (Choi et al., 2001).

Choi et al. (2001) discuss the interdependencies of agents and the overall state of a CAS in the context of a supply chain network. The authors explain that incorporating modular design in the automotive supply chain process reduced the number of peaks in the rugged landscape creating a condition more conducive to overall system optimization. As opposed to the manufacture of individual parts, the automotive industry reorganized the entire supply chain process to a point where firsttier suppliers produce entire modules or subsystems (e.g. complete engines, steering systems, etc.) minimizing the cost of coordination across the entire supply network.

Co-Evolution

Co-evolution directly relates to the concept of connectivity in that multiple systems and/or sub-systems emerge together because "there is feedback among the systems in terms of competition or co-operation and utilization of the same limited resources" (Goldstein, in Zimmerman et al., 1998, p. 263). Symbiotic relationships exist as different parties (agents and neighboring CASs) depend upon and interact with each other. The environment imposes changes on its members who react thus changing themselves and consequently changing the environment. Therefore, co-evolution occurs when system members are forced to adapt continually to the changing context wrought by others' strategies in order to remain relatively fit (van Valen, 1973; Kim & Kaplan, 2006).

In a business context, the increasing prevalence of partnerships and alliances in a traditionally competitive environment indicates a general shift of practice and strategy towards co-evolution (Luoma, 2006). Many organizations seek to expand operations into foreign markets not through acquisitions and mergers but through mutual agreements in order to leverage the knowledge and resources of each party. Grant & Baden-Fuller (2004) present a theory of strategic alliances that focuses on alliances as a strategic tool to access knowledge resources of other firms rather than acquire. Alliances contribute to the efficiency in the application of knowledge by improving the integration of knowledge into the production of complex goods and services and increasing the efficiency of knowledge utilization. The efficiency advantages of alliances are enhanced when uncertainty exists in the environment.

Quasi-Equilibrium and State Change

Unlike chaos theory that focuses on the discovery of unpredictable behavior, complexity science strives to explain how order emerges from self-organizing agent interaction (Kauffman, 1993; Holland, 1995). Within the apparent randomness of a CAS, order can be unmasked to predict broad behavior, not at the individual agent level but in the aggregate. Mainzer (1994) & McKelvey (2004) refer to complexity as an ordercreation science.

Systems under complexity science can exist or vacillate between any of three states– stable, chaotic, and one in between (Lewin, 1992). Many complexity researchers label the middle state as the "edge of chaos" (Lewin, 1992; Kauffman, 1995). A CAS maintains this quasi-equilibrium state, balancing between complete order and incomplete disorder (Goldstein, 1994). Highly ordered systems exhibit too much rigidity to effectively respond to environmental changes while highly chaotic systems cannot maintain any semblance of consistency and eventually collapse from excessive disruption. The "poised" systems that lie in the middle "may have special relevance to evolution because they seem to have the optimal capacity for evolving" (Kauffman, 1991, p. 82). These systems adhere to the principle of maximum entropy production where the system moves towards the brink of complete disorder (entropy) but never quite falls over the edge as new energy flows into the system forcing redirection back to a quasi-equilibrium state; the order lies not at the individual level, but in the aggregate (Luoma, 2006).

The Luoma (2006) discussion of complexity and management development asserts disequilibrium and disorder should not be seen as negative organizational attributes. Attempts to entirely eliminate disorder suppress the system's ability to self-organize (Stumpf, 1995). Luoma (2006) recommends that management exert some control but supports the approach of allowing an organization to exploit the innate ability to spontaneously develop behavior that most effectively moves the whole in a given direction. Weick (1979) notes managers tend to get in the way of activities that have their own self-regulation, form, and self-correcting tendencies.

Non-Linear Changes

The level of sensitive dependence on initial conditions delineates a CAS from a stable system (Briggs & Peat, 1999; Phillips & Kim, 1996). Generally, small changes in a stable system result in small effects while large changes produce large effects. Changes in a CAS generate unpredictable effects; small changes can grow exponentially with each interaction through the system and large changes may languish or disintegrate altogether through agent inattention. Gibson (1996) & Wheatley (1996) advocate management application of small "nudges" to guide an event or process rather than dramatic actions intended to control. As in many instances in business, timing is everything. The right kind of nudge at the correct time can lead, through positive feedback, to major change (Nilson, 1995). Mason (2007) presents the first-mover advantage as an illustration of non-linear change in a business context. Sensitive dependence on initial conditions and positive feedback create a "flywheel affect" that reinforces early success, providing a significant advantage over the long term. A number of studies discount first-mover advantage as a myth (Suarez & Lanzolla, 2005; Pfeffer & Sutton, 2006) yet others contend the opposite:

"To gain advantage, first movers must capitalize on the opportunities that come with being a pioneer while at the same time manage the threats that arise. The bottom line: Being first in a market is only an advantage when you do something with it" (Finkelstein, 2007, p. 3).

The differing opinions on the validity of firstmover advantage epitomize core concepts of CAS theory. First-mover advantage occurs as a result of non-linear relationships and positive feedback yet the interaction between agents (pioneers, competitors, and the environment) results in unpredictable outcomes, i.e. whether or not a pioneer can maintain the advantage through proactive and reactive action. Traditional forecasting and prediction models inexorably fail to adequately account for the dynamic nature of CASs due to the exponential growth of specification errors as the future unfolds (Peitgen et al., 1992).

Non-Random Future

Although the nature of CASs prevents exact prediction of future actions and outcomes, distinct patterns of behavior exist underneath apparent randomness allowing examination and general predictive ability. Small changes may lead to drastically different future paths; however, the same characteristic pattern of behavior emerges despite the change (Choi et al., 2001).

Recent work in financial economics highlights patterns of non-random behavior that result in varied outcomes. Baker et al. (2002) attempt to solve the "dividend puzzle" by examining how managers determine dividend policy. Calling upon earlier work on habitual behavior (Waller, 1989; Frankfurter & Lane, 1984), the authors conclude that various market imperfections and frictions affect firms differently; therefore, dividend policy differs firm to firm and models should consider competing frictions on a firm-specific basis. Underlying this work, Waller (1989) suggests the concept of habit (nonreflective behavior) may be a useful tool for institutional policy analysis and can "be a fatal blow to work that is based on rational behavior" (Baker et al., 2002). Habits reflect cultural and societal norms and standards that may contradict rational economic behavior. Further, Frankfurter & Lane (1984) assert habitual behavior causes problems for models attempting to explain dividend policy assuming rational behavior and claim socioeconomic consequences of modern corporate evolution best explain dividend behavior. This stream of research, although not explicitly stated, exhibits core CAS principles.

This section presented the elements of the CAS theoretical foundation developed by Choi et al. (2001) and provided examples from academic research, the business environment, and natural systems in order to explain the fundamentals underlying complexity science and to demonstrate application outside the realm of accounting. The subsequent section examines the public accounting profession as a CAS and develops testable propositions for future consideration.

Viewing Public Accounting as a Complex Adaptive System

For the purpose of this discussion, the term 'public accounting profession' relates to firms that provide accounting and auditing, tax, and consulting services to publicly-held entities with an emphasis on auditing. The remainder of this section explores several aspects of the profession under the Choi et al. (2001) CAS framework to establish an alternative way of viewing and researching the profession that offers a more holistic, richer perspective than the traditional neoclassical approach allows.

Internal Mechanisms

Agents and Schema

Agents, by definition, represent the core of a CAS and must possess the ability to influence the direction of the system in order for the system to be classified as a CAS. At the lowest level of the public accounting CAS, auditors constitute the agents. Auditors employed by a public accounting firm perform financial statement attestation, working in localized audit teams with a defined hierarchical structure. Staff auditors work under the direct supervision of managers that report to an engagement partner who simultaneously reports to the local office managing partner (OMP) and a quality assurance audit partner, typically located in a different office for increased objectivity. The OMP leads and coordinates all activity of a particular office and is accountable to a regional partner that functions under the overall direction of a national office. The various national offices located around the world each represent a member firm of a global group of firms. For example, Ernst and Young Global Limited (EYG), a UK private company limited by guarantee, is the principal governance entity of the global EY organization comprised of legally separate member firms that have no liability for the actions of each other (Ernst & Young, 2007a). As such, the individual EY auditors executing fieldwork embody a corporeal organization comprised of agents, meta-agents, and interconnected CASs that collectively form the EYG public accounting firm.

Arguably, accounting can be traced back to the dawn of intelligence among human beings where primitive man began the process of numbering (Brown, 1905). Over time, numeration evolved from ancient forms of accounting for transactions to the doubleentry bookkeeping format of today. Widely referred to as "the language of business" (Davidson et al., 1987) accounting consists of specialized phrases and terminology that collectively create a common body of socially-constructed schema to interpret the practice of accounting.

Within the profession, individual firms extend the general accounting schema by developing firm-specific policies and procedures that guide the behavior of internal agents. Each of the Big Four public accounting firms created and published information about the core values of the firm and related codes of conduct on their global website. Deloitte and Touche established the following set of firm-wide core values:

"The shared values of DTT and its member firms bind the people of DTT's member firms together and promote trust among partners and professionals … These values join together all employees across different cultures, customs and languages and are the foundation for collective successes. Carefully identified through a global consultation process, these values are all-encompassing and embrace the cultures in which DTT's member firms operate. This thorough process resulted in universal shared values that form a basis for a consistent approach to service delivery worldwide. The shared values are: Integrity, Outstanding value to markets and clients, Commitment to each other, Strength from cultural diversity" (Deloitte & Touche, 2007a).

The Ernst and Young website includes the following statement about their firm's code of conduct:

"The Ernst and Young Global Code of Conduct sets out a comprehensive ethical and behavioral framework that guides the decisions we make every day. The Global Code reflects our commitment to delivering Quality in Everything We Do, underscored by the strength of our Values Statement. The Global Code of Conduct provides a series of guiding principles grouped into five categories that cover the breadth of our activities. They are: 1) Working with One Another 2) Working with Clients and Others 3) Acting with Professional Integrity 4) Maintaining our Objectivity and Independence 5) Respecting Intellectual Capital" (Ernst & Young, 2007b).

The guidance developed by these two firms illustrates schema created to generate consistent agent behavior across the firm that lays the foundation for overall firm culture and image thus increasing the "fitness" of the firm. The AuditAnalytics database lists 647 public accounting firms that issued an audit opinion in 2005 for a Securities and Exchange Commission (SEC) registrant. The number of firms invariably leads to a variety of business approaches, organizational infrastructures, management styles, values, cultures, and agent behavior operating in the profession simultaneously.

Proposition 1. *The greater the level of shared schema within a public accounting firm, the higher the level of fitness achieved (e.g. performance, survivability).*

Self-Organization and Emergence

The activities of the public accounting profession prior to the passage of the Sarbanes-Oxley Act of

2002 (SOX) demonstrate examples of self-organization and emergent behavior. With the advent of technological advances and the Internet Boom in the latter part of the 20th century, the accounting profession felt compelled to alter the structure and perception of the profession to keep pace with changes in business. The American Institute of Certified Public Accountants (AICPA) Vision Project, Canadian Institute of Chartered Accountants (CICA) Vision Statement, and Institute of Chartered Accountants in England and Wales 20/20 Vision Project initiatives represent attempts by the accounting professional bodies to redefine themselves and their practices under the rubric of "vision" (Fogarty et al., 2006). The AICPA sought to broaden the services of the traditional accounting and audit-oriented focus to a point where accountants could be viewed as trusted business advisors. The AICPA heralded the vision statement as "the basis for expanding the value of the CPA to tomorrow's marketplace" (AICPA, 2000) and stated the profession's core purpose as "making sense of a changing and complex world". Text from the vision statement offers evidence of the desired shift:

"CPAs are the trusted professionals who enable people and organizations to shape their future. Combining insight with integrity, CPAs deliver value by: Communicating the total picture, Translating complex information into critical knowledge, Anticipating and creating opportunities, and Designing pathways that transform vision into reality" (AICPA, 2000).

The firms quickly latched on to this movement to expand the array of services delivered. When the AICPA championed a global consulting credential, many in the accounting profession vociferously objected. Kliegman (2001, p. 49) complained that "hundreds of thousands of people who lack the rules, regulations and ethics of CPAs [will] be admitted to compete with the professional CPA as consultants." BDO Seidman joined the debate asking:

"Why would the profession want to dilute its invaluable "trusted advisor" reputation by sharing it with others who are not similarly grounded in ethics and objectivity?" (Klein, 2001, p. 4).

The professional accounting bodies led the charge to adapt to the changing business environment and public accountants, particularly the larger firms, self-organized and embraced the emergence from the role as merely a provider of accounting and audit services to one of a valued business consultant.

Proposition 2. *Public accounting firms that adjust vision, strategy, and infrastructure quickly in response to environmental changes (e.g. legal, marketplace) will perform better and survive longer.*

Connectivity

Savage (1994) asserts that professions are neither occupations nor firms, but instead represent an example of the network form of organization that has evolved and continues to survive because they represent comparatively efficient and adaptable solutions to certain kinds of dynamic production problems. Collectively, the public accounting profession consists of many entities ranging from sole practitioners to the Big Four international firms and various national and international professional bodies. The profession interacts externally with regulatory agencies, governments, higher education institutions, financial markets, existing and potential clients, and future employees. The communication between these parties creates a myriad of intertwining, dynamic relationships– each party with their own goals and agendas.

The structure and international focus of the larger public accounting firms reflect the global connectivity of the profession. PriceWaterhouseCoopers (PWC) and its international member firms, for instance, conduct business in 149 countries with more than 140,000 employees and state on the corporate website:

"People … across our network share their thinking, experience and solutions to develop fresh perspectives and practical advice. In this Global Annual Review we describe our performance … in helping clients address the challenges of the global marketplace" (PriceWaterhouseCoopers, 2007).

The interplay of the international public accounting firms with international regulatory bodies offers another example of the global connectivity of the profession. The World Trade Organization (WTO) develops the ground-rules for international commerce and mediates trade disputes. Arnold (2005) examines how transnational accounting firms in Europe and the U.S. use international trade agreements such as the General Agreement on Trade in Services and Disciplines on Domestic Regulation in the Accountancy Sector developed and enforced by the WTO to create a global market for accounting and auditing services by eliminating domestic regulation viewed as barriers to trade and investment. Caramanis (2002) explores the interconnectedness of national politics with global forces and the ramification of this interaction for accounting regulation and the relationship between the state and the profession. After analyzing historical documents of the liberalization of the Greek auditing profession in the 1990's and the pressure exerted on the Greek government by intergovernmental politico economic organizations at the behest of the public accounting profession, Caramanis (2002) asserts:

"The politics of international accounting professionalism in the 'globalization' era are becoming more polycentric with (lesser) nation-states as merely one level (of diminishing importance) in a complex system of superimposed, overlapping and often competing national and international agencies of governance."

The author concludes by stating, "The paper has shown how intertwined accountancy and the broader socio-economic and political domain are, not only at the local, but also at the international level." The accounting profession clearly functions in an interconnected, ever-evolving world comprised of many distinct agents and CASs whose actions affect others in the system.

Proposition 3. *Public accounting firms aware of the interconnectedness of the agents, metaagents, and CASs they interact with directly and indirectly will be more effective at expanding operations, achieving objectives, and managing resources.*

Dimensionality

Although the bread and butter line level work of auditing public companies occurs in a small team-based environment, these individual silos need certain controls to uphold a high level of professional quality across the firm and reduce liability. As evidenced by the Enron scandal, actual or perceived failure in only a single audit can devastate a firm. In order to maintain a consistent level of performance and minimize risk, public accounting firms implement a wide variety of institutional controls that reduce the dimensionality of agents and sub-CASs. Examples include structured training for each professional level, client acceptance procedures, internal quality reviews, firm guidance (i.e. auditing standards– e.g. materiality judgments), quality assurance partners, national technical partners, mentoring, formalized compensation and evaluation structure, etc.

Several academic studies examined various aspects of public accounting institutional control mechanisms. Dirsmith et al. (2005) deconstructed the structure of international public accounting firms identifying two general modes of governance rhetoric, the objective bureaucracy managed by administrative partners and the subjective expertise of practice partners that exercise professional judgment in the field. The authors conclude the distinction between objectivity and subjectivity compete yet supplement the shortcomings of the other creating an intertwined relationship. The administrative controls reduce the dimensionality of the practitioners preventing the collective firm from entering a state of complete chaos. Covaleski et al. (1998) examine the mentoring structure in public accounting firms and determine that the mentoring process shapes the identities of organizational participants but the discourse of professional autonomy, in contrast, generates resistance to total conformity. Mentoring accomplishes the goals of both creating and ingraining shared schema throughout the organization while simultaneously reducing the dimensionality of agents.

Proposition 4. *Implementation of institutional control mechanisms in public accounting firms leads to consistent performance quality but may, in turn, reduce the professional autonomy of practitioners leading to less organizational commitment, job satisfaction, innovativeness, and ultimately performance.*

Environment

Dynamism

As a direct result of SOX legislation requirements in the U.S., particularly Section 404 that requires assessment of internal controls over financial reporting, public accounting firms are hiring more accountants than ever before in an environment already short of supply. According to the managing partner of the Deloitte and Touche Pittsburgh office, "All our young people wanted to be dot.commers, investment bankers and consultants," (Boselovic, 2004). In 2004 alone, the Ernst and Young Pittsburgh office increased staffing by over 25% (Boselovic, 2004). In discussing the hiring outlook for 2007 Monster.com, one of the largest online employment websites, expects continued effects of SOX on the accounting profession:

"Sarbanes-Oxley will have a profound effect for years to come. There wasn't the talent to backfill slots emptied by accounts pulled onto SOX compliance projects. There's a huge demand for auditors, CPAs and people in internal controls. The Big Four accounting and consulting firms continue to hire aggressively as they face competition from smaller competitors and corporate employers. "We've seen a fairly robust increase in business across all three of our practices: audit, tax and advisory," says Manny Fernandez, national managing partner for campus recruiting at KPMG. "Now that we've stabilized the turnover in the wake of Sarbanes-Oxley, we're trying to come back to a sense of balance in terms of people's workloads" (Rossheim, 2007).

In the face of a staffing strain propagated by the existing shortage of accountants and the most significant legislation since the SEC Acts of 1933 and 1934 driving ever more demand, public accounting firms reacted aggressively by implementing creative approaches to hiring and retention practices. In 2004, EY established an internal network called bEYond for gay and lesbians employees to interact and feel connected to the firm. The company website provides the following information about bEYond:

"Ernst and Young is committed to providing a work environment that is, and feels, inclusive for all our people. Through People Resource Networks (PRNs), various affinity groups within our firm can network and exchange information as well as advise senior leadership about inclusiveness issues.

bEYond, a network for lesbian, gay, bisexual, and transgender people and their allies (LGBTA), was the first PRN established by the firm, and it worked to add the inclusion of "gender identity/expression" as a covered category within the firm's antidiscrimination policy" (Ernst & Young, 2007c).
EY reportedly needs more than 5,500 college recruits for internships and entry-level jobs in North America in 2007 (White, 2007). In an attempt to reach this demographic in their natural habitat (the Internet), EY became the very first employer to create a webpage on Facebook, a social networking website that caters to college and university students, dedicated solely to recruiting (Rothberg, 2007). The EY Facebook page contains information and discussion boards targeted specifically at the internet-savvy audience. The bEYond PRN and Facebook recruiting efforts exemplify the concept of dynamism; the dynamic external environment exerted pressure on the firm resulting in a staffing crisis and the firm quickly and ingeniously adapted to address the threat.

Proposition 5. *Public accounting firms that respond quickly to threats from a dynamic external environment will gain competitive advantage over those that either fail to respond or react slower.*

Rugged landscape

Each public accounting firm may consist of many groups internally that collectively comprise the firm. These groups can be delineated by function (e.g. audit, tax,consulting, etc.) or nationality, each striving towards an optimal level of fitness locally yet experiencing inter-dependencies that may overwhelm the local contribution to the direction of the collective. Similar to the modular design of the automobile industry in Choi et al. (2001), the architecture of public accounting firms can be optimized independently to allow the emergence of high dimensionality reducing coordination costs across the entire firm.

Arthur Andersen was the last true globallyorganized public accounting firm. The U.S.-led audit team on the Enron engagement essentially brought down the entire firm. Today, the larger firms operate autonomous groups as separate legal entities, both nationally and functionally. Deloitte and Touche Tohmatsu (DTT), similar to EYG, acts as an alliance of legally-separate member firms. Within the U.S., the national member firm of DTT further decomposes into legal subsidiaries on a functional basis with subsidiaries for audit and assurance, consulting, financial advisory, and tax services (Deloitte & Touche, 2007b) providing some level of legal protection in the event an incident occurs reminiscent of the tax shelter fraud exposed in 2003 which nearly ruined the KPMG U.S. member firm.

***Proposition 6**. Modularization of structure (nationally and functionally) will decrease overall inter-dependencies within a public accounting firm allowing greater efficiency of operations while simultaneously mitigating risk.*

Co-Evolution

Quasi-Equilibrium and State Change

Changes and actions by the public accounting profession during the mid-1990's to today embody the quasi-equilibrium and state change elements of the CAS framework. In the period prior to the passage of SOX the profession attempted to broaden the services provided by CPAs (evidenced by the actions of the AICPA during the Vision Project) to expand the jurisdictional domain of the profession. Most firms bolstered and grew their consulting service lines to "grab a bigger piece of the pie" until the rash of financial reporting scandals (Enron, WorldCom, and HealthSouth, etc.) rocked the financial markets resulting in a loss of confidence in the auditing firms and compelling U.S. legislators to intervene. EY, PWC, and KPMG each either sold or spun-off their larger consulting groups in order to refocus on the core competency and tradition of objective, independent financial statement attestation. During this era, the profession crept eerily close to the 'edge of chaos'. Concern for the lack of independence in the profession led to structural changes (e.g. peer review discontinued in lieu of PCAOB oversight) bringing the profession back into a quasi-equilibrium state.

***Proposition 7.** Structural changes in line with traditional values of objectivity and independence will survive longer and be more successful than those in conflict.*

Non-Linear Changes

As Mason (2007) and Finkelstein (2007) note, positive feedback reinforces early success creating a long-term advantage for first-movers as long as the organization does something with the advantage. The Big Four public accounting firms can arguably be viewed as having secured a first-mover advantage in the audits of U.S. public companies. The roots of each firm can be traced back well over a 100 years and some of the auditor-client relationships span many years; Davis et al. (2000) find that 585 (69%) of their sample companies retained the same auditor over the entire 18 year period of 1981-1998.

Canada et al. (2007) refer to the formulation of SOX as the "perfect storm" where the set of events leading to the legislation individually would have far less impact than the synergistic effect from combination (i.e. nonlinear impact). The Act continues to change the landscape of the public accounting profession five years after passage. The cost of compliance for SOX Section 404 resulted in and continues to offer opportunities for smaller firms to obtain an increasing number of public company audits. The Big Four resigned from many audits due to the inability to staff all the existing engagements and opted to keep only the most profitable and least risky clients and on the reverse side, clients dismissed Big Four firms due to increased audit fees (Boselovic, 2004). The AuditAnalytics database shows that the Big Four issued 67% of the 2003 opinions on financial statements of SEC registrants, dropping to 62% in 2004 and 59% in 2005. Data thus suggests collective changes in a dynamic, interconnected environment may have resulted in an unpredictable outcome– the Big Four losing their stranglehold on the audits of public companies. The slippage possibly could have been quicker and even more severe if smaller accounting firms had placed themselves in proper position to leverage the structural change in the landscape.

Proposition 8. *Public accounting firms cognizant of non-linear effects and positive reinforcement are more likely to be prepared for, less likely to be affected by, and more prepared to take advantage of unforeseen changes in the environment.*

Non-Random Future

The audit failures early in this century, subsequent legislation, and impact on the public accounting profession reasonably could not have been predicted with any precision due to the many participants involved and the 'building up' effect of their actions that culminated in a drastic structural change to the manner in which U.S. companies conduct business and are audited. However, general agent and CAS behavior can be recognized to reduce the surprise and facilitate proactive behavior. For instance, client management that exhibits habitual earnings management behavior, even to a small degree, may be inclined to commit fraudulent behavior when conditions or events occur jeopardizing their position of power. Even though Scott Sullivan, the exCFO of WorldCom, probably realized treating operating expenses as capital expenditures was not a 'healthy business' that could be sustained indefinitely (eventually a writedown would need to occur) he exhibited irrational behavior by continuing to authorize reclassification entries period after period for over three years (Wharton School, 2002).

Proposition 9. *Auditors aware of past agent and CAS behavior have a higher likelihood of predicting the general direction a CAS may proceed (given similar circumstances) than those anticipating consistent rational behavior.*

Discussion and Conclusion

Practitioners, regulators, and academics increasingly view the traditional neoclassical view as too myopic and simplistic for the increasing complexity and interconnectedness of today's business world.

Academic disciplines outside and within the business area have recently embraced complexity theory and CASs as a manner to conduct research. This paper extends the work of Mouck (1998, 2000) and Sutton et al. (2006) in the accounting literature by introducing the CAS framework developed by Choi et al. (2007) as an alternative lens to examine the public accounting profession. The paper presents a set of research propositions associated with each concept and principle contained in the framework based upon extant literature and knowledge of practice. The ultimate goal of this paper is to broaden the perspective of accounting academicians to consider the complex nature of the world we live in and conduct research reflective of that reality.

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Management Accounting Change: ABC Adoption and Implementation

Faudziah Hanim Bt Fadzil1 and Abedalqader Rababah2
1Othman Yeop Abdullah Graduate School of Business, Universti Utara Malaysia, Malaysia
2College of Business, Universti Utara Malaysia, Malaysia

A B S T R A C T

The current research tries to contribute to the successful design and implementation of ABC in the context of Jordanian Manufacturing Companies. In order to satisfy the research objectives, both quantitative and qualitative data are gathered. For the quantitative data, a questionnaire survey was developed for the determination of the present scenario involving ABC adoption and implementation. For the qualitative one, semi-structured interviews were utilized to find out the factors impacting the adoption and implementation of ABC. Data analysis included within company and cross-company analysis. ABC's adoption and implementation rate were determined through the use of three criteria; namely, adopters, implementers and users or implementers. The primary findings revealed that ABC implementation in the context of Jordanian Manufacturing Companies is approximately 19.5% measured according to the third criteria which is implementers or users. Findings from the semi-structured interviews reveal that factors including fashion, forced decision, fad and efficiency are directly related to ABC implementation decision in the target companies. In addition, factors that both facilitate and motivate ABC implementation are: top management support, non-accounting ownership, higher information technology, education, globalization of consumer, increased competition,growing costs, allocation problems, inability of the traditional cost systems to provide relevant information in the new environment and financial crisis. The findings from the interviews also revealed that the barriers to ABC implementation are associated to behavioral and technical problems.

Keywords: Activity-based costing (ABC), Adopters, Implementers, Users, Manufacturing companies, Jordan

Introduction

In recent years, most organizations have faced rapid changes in their business environment. Management challenges have been intensified by the deregulation, in conjunction with the increasing global competition and reduction in product life cycles resulting from technological innovations (Abdel-Kader & Luther, 2008; Narong, 2009; Fei and Isa, 2010b). Emergence of advanced manufacturing technologies has resulted in greater automation and changes in the cost structure. The cost structure changes involved direct labor costs being replaced by indirect costs (Cooper, 1988). As a consequence, new management practices such as just-in-time management philosophy, total quality management practices and activity- based costing system have emerged.

Researchers, such as Abdel-Kader and Luther (2008) and Rasiah (2011), asserted that management accounting practices such as ABC is in crisis, because its implementation rate is still low. They also mentioned the significant innovation and the greatest interest in the area of activitybased costing (ABC). ABC emerged in the late 1980s as a mechanism for providing more accurate product/service cost information to support strategic decisions. During the 1990's, it has been extended as a tool to control and manage costs more effectively.

However, the researchers have developed various interpretative perspectives to know and highlight the factors affecting ABC adoption and implementation (Shield, 1995; Swenson, 1995; Malami, 1999; Maelah & Ibrahim, 2006) and the stages of its implementation processes (Anderson, 1995; Krumwiede, 1998; Brown, Booth & Giacobbe, 2004). However, most of these studies arrived to ambiguous, different and divergent results. Different studies defined ABC implementation in different ways. Some defined it as actual ABC implementation; others defined it either as an actual implementation or a desire of implementing it (Sartorius, Eitzen & Kemala, 2007; Baird, Harrison, & Reeve, 2007). Furthermore, the basis for comparisons of factors influencing the implementation of ABC has differed in some studies. They compared companies implementing ABC with those not. Moreover, the adoption rate of ABC in a range of different countries varies widely: some countries were found increasing in the adoption rate of ABC, and other countries were found decreasing in the adoption rate. Researchers have even reported wide variations in the same country (Baird et al., 2004, 2007; Brown et al., 2004). So, it is difficult to evaluate the results from the different studies, particularly those relating to usage rates. It is also difficult for the ability of factors to discriminate between implementers and non-implementers, particularly when the term implementation had been subject to different definitions (Al-Omiri & Drury, 2007a).

Numerous studies stated that there is a need to segment ABC adoption to stages. This segmentation is necessary at the time of researching the success by examining ABC at sites maturity. The result of ABC implementation often is achieved after the using stage, especially in financial performance improvement (Krumweide, 1998; Baird et al., 2004; Liu & Pan, 2007; Fei and Isa, 2010a). Numbers of previous literature such as Baird et al. (2004) and Krumwiede (1998) have segmented the ABC implementation to stages. The number of stages was done differently by different researchers to suite the requirement of the study. More generally, this should be a consideration for any study examining a new system implementation (Fei and Isa, 2010). Therefore, in the current study, the researchers have segmented the adoption and implementation of ABC to several stages. These stages are: non-adoption, adoption, abandonment, implementation and usage stage.

Many researchers, such as Clarke, Hill and Stevens (1999) and Drury and Tayles (2005) and Al-Omiri and Drury (2007b), said that although there are many differences between sectors, previous studies tested factors affecting the adoption and implementation of ABC without separating the industrial and financial sectors. They also did not separate manufacturing industries from nonmanufacturing in which ABC system has been adopted. This lack of separation may lead to ambiguous and vague results.

In this research, mixed methods were used. Firstly, a questionnaire survey was designed to include suitable control questions that allow the researcher to check respondents' claims that their firms which are implementing ABC systems are really ABC adopters or operators. Secondly, face-to-face interviews were carried out with adopter firms for additional clarification and explanations about ABC system.

This study focuses on Jordan after the new changes in Jordanian business environment. Jordanian companies encountered globalization and strong competition because Jordan's accession to the WTO resulted in more multinational companies establishing joint ventures or regional offices in Jordan, and this resulted in changes regarding management of accounting practices in Jordan. This modification is piloted by the need of Jordanian companies to implement cost accounting innovations for the purpose of having a competitive edge in the market (Hutaibat, 2005).

So far, little is known about the Jordanian manufacturing sector concerning the degree of ABC adoption and implementation, as well as the factors motivating, facilitating and creating barriers to implementation (Al-Khadash & Feridun, 2006). Thus, it is necessary to examine whether ABC could be successfully implemented and factors influencing ABC success in Jordan, Shields (1995) argues that a one successfully adopted technique in one country does not mean it also can be a success in another country, because ABC system success is determined by organizational and behavioral factors in developed countries.

Research Objectives

The aim of the present research is to contribute to and enhance the design of ABC implementation in Jordan. The objectives of this research are outlined below:

To examine the extent of ABC implementation system within the Jordanian manufacturing shareholding sector.

1. To identify the reasons for nonadopting ABC system.

2. To determine factors that prevents ABC implementation.

3. To determine the factors facilitating the process to implement ABC system.

4. To determine the main factors motivating the implementation of ABC system.

5. To identify the reason for implementing ABC.

6. To identify the problems faced in ABC implementation.

7. To ascertain the views of the user companies on the degree of success of ABC system and to encourage non-users for using this system.

Literature Review

The Underlying Theories

Diffusion of Innovations

Diffusion of Innovations can be defined as a theory of how, why and at what rate new ideas and technology spread through cultures (Rogers, 1962).

Management Accounting Change and Factors Influencing the Process of Change

The literature review shows the difference in the concept between innovation and change. Bradford and Kent (1977) argue that an innovation means the adoption of a new or a previous idea in a new circumstance or in a new setting. But change is not necessarily a new innovation or idea.

Despite the difference between these two concepts, the factors affecting the process of change in management accounting also are affecting the innovation adoption process. In their study of seven companies in the electronic sector, Innes and Mitchell (1990) found three types of factors influencing management accounting change process. These factors are facilitators, motivators and catalysts.

Empirical Literatures

The Reasons for Adoption of ABC

According to Cooper (1991), the growing costs and diversity of products is a major cause to adopt and implement the ABC. Chongruksut (2002) studied the adoption of ABC systems in different sectors in Thailand by survey method and found that the financial crisis of Thailand in 1995 and the economic recession played a major role in the ABC adoption.

Brown et al. (2004) found that technological factors, such as product customization and cost structure are not related to whether or not operating units considered ABC. Furthermore, they found insignificant effect of environmental factors, such as competition. Van Nuyen and Brooke (1997) argue that there is a positive association between the motivator's factors such as change in cost structure, competition and ABC adoption.

In this respect, Cooper (1988) and Booth and Giacobbe (1997) in their studies also found a positive association between the overhead level and ABC adoption. Innes and Mitchell (1991), in their case study, found that the change in external environment, such as globalization and lower operating costs for competitors are the motivators for management accounting change. Brierley (2009) recommends future research in longitudinal approach to see when and how their consideration or ABCimplementation has been complete. He also recommended future research to include the effect of organizational factor on ABC consideration.

In Iran, Ahmadzadeh et al. (2011) conducted a questionnaire survey in Iranian companies to examine whether the organizational factors such as organization size, industry type, cost structure, the importance of cost information and products and services diversity have a role in motivating the implementation of ABC. The results of this study found a positive association between cost structure, the importance of cost information, products and services and ABC implementation. It also found a negative association between the type of industry, organization size, product and services diversity and ABC

The review of literature above indicates that the researchers differentiated between two types of factors: catalysts which are associated directly with change such as competitors using ABC, pressure from government or other regulatory authorities and advice from parent or headquarters. However, Abrahamson (1991) classifies these factors to four perspectives: efficient choice, forced selection, fad and fashion. Another type is motivator's factors which influence the change in general manner such as changes in cost structure, shortcomings of the existing cost system and change in business environment.

The Reasons for Non-Adoption of ABC

Despite the advantages of ABC over Traditional Accounting Systems, the adoption rate of ABC in different countries is still not very satisfactory (Askarany & Yazdifar, 2007). Many studies (such as Clarke et al., 1999; Pierce & Brown, 2004; Cohen, Venieris & Kaimenaki, 2005; Baird et al., 2007) describe the reasons for nonconsidering or non-adoption of ABC.

Pierce and Brown (2004) conducted a survey in different sectors in Ireland (manufacturing, service and financial sector organizations) to investigate the state of implementation of activity- based costing systems. The results of Pierce and Brown (2004) are divided into three parts. The first part is related to the factors that inhibit the implementation of the system. These include the lack of support, experience, training and resources, software support, human resource availability and perceived complexity. The second category is related to reasons for rejecting the system. These include the lack of significant difference in the product costs compared to the traditional systems, the current system will be deemed consequently as a better management tool, and the lack of relevance to the business. The findings also indicate that there is difficulty in establishing the key cost drivers and indeterminate benefits. The last category is related to reasons for never considering the system. These include satisfaction with the current system, lack of knowledge and experience, simplicity of the manufacturing process, small size of organization and the irrelevance of ABC to the nature of the business.

A study by Cobb, Innes, and Mitchell (1992) identifies the following issues: difficulty of collecting quantitative data on cost drivers, difficulty of linking cost drivers to individual product lines and other higher priorities. Furthermore, they indicate that those companies adopting ABC have faced some difficulties during the initial ABC implementation stage, including: the choice of activities, the selection of cost drivers as well as the uncertainty over using ABC for stock valuation for external financial reporting.

In Ireland, Clarke et al. (1999) also found that the major barriers to the adoption and implementation of ABC were a lack of adequate resources and lack of experiences. Numerous studies (such as, Krumwiede, 1998; Innes et al., 2000; Chongruksut, 2002; Cohen et al., 2005) suggested that ABC is very complex, and there are many barriers such as internal resistance, lack of top management support, human resource availability, lack of knowledge, expressed satisfaction with current systems and a claimed lack of resources such as a qualified work force, time and effort.

ABC Success

Many studies suggested that worldwide ABC adoption rate is very low (Kennedy & Bull, 2000). Researchers gave many possible reasons to this rate. One reason could be ABC adopters not successful in delivering predictable net benefits. If ABC implementers find it unsuccessful, the low adoption rate could be justified (Byrne, Stower & Torry, 2009).

Shields (1995) and Baird et al. (2007) said that the definition of success is problematic as the literature is not clear about what success means, and discussions with ABC experts during construction of the survey did not result in agreement about a tangible definition. The approach that Shields (1995) adopted was to allow the user to rate the degree of success with whatever definition they deemed applicable. He adopted a limited number of success measures. McGowan and Klammer (1997) criticized Shield's study because he only adopted both management evaluation to overall success in addition to dollar improvement as a success measure, and he did not separate between ABC implementation stages.

Some studies such as Anderson (1995) and Krumwiede (1998) measured success as the attainment of a particular stage of implementation. However, this approach of measuring success received many criticisms by researchers such as Baird et al. (2004) since it measures success as the series of an organization from one stage of activity management implementation to the next.

In their study, Foster and Swenson (1997) used different attributes to measure the level of success in 166 sites of 132 companies. However, they did not segment adoption and implementation to stages. This means that they did not focus on the ABC maturity stage. The measures used were ABC information, decision actions, dollar improvement and management evaluation to the overall success of ABC. However, Foster and Swenson's measure did not differentiate between different stages of ABC implementation. Several studies stated that there is a need to segment ABC adoption when researching success by examining ABC maturity.

Critical Success Factors (Factors Facilitates ABC Implementation)

A number of studies have been conducted to attempt to identify critical success factors (such as Shield, 1995; Krumwied, 1998; Maelah & Ibrahim, 2006; Brown et al., 2004). Shields (1995) found success to be strongly connected to behavioral and organizational variables such as top management support, adequate internal resources and training, but not to technical variables such as the type of software or the nature of the system. According to Anderson (1995), the factors influencing implementation are context- specific. His conclusion was the varying influence across the stage of implementation, of specific organization and technical factors, individual and task characteristics, and environmental factors on the implementation success.

Krumwied (1998) conducted a study on the U.S manufacturing firms investigating how various contextual and organizational factors influence the stages of the ABC implementation. The contextual factors include: the potential for cost distortion and size of firms. The organizational factors include: top management support, training or non – accounting ownership and education. He found different factors to influence various stages of ABC adoption and implementation. He also found that the degree of influence varies in different stages of implementation. Therefore, this study recommends taking organizational and contextual factors into account while considering or implementing ABC system.

In France, Rahmouni and Charaf (2010) conducted a study using mixed methods; data were collected through mail questionnaires and interviews with French financial controllers. The aims of Rahmouni and Charaf's (2010) study was to know which organizational and technical factors are associated with the success of ABC implementation, to provide some answers to the ABC paradox and to improve a new measuring scale for the perceived complexity of the ABC project.

The results of the study show that the success of ABC implementation depends on two factors in French companies: training and perceived complexity of the information technology. Rahmouni & Charaf (2010) recommend for future research to take into account other important variables that have been ignored in their article but are likely to impact the success of ABC projects. However, Velmurugan and Nahar (2010) said there is no identification of common factors contributing to the successful implementation of ABC by those companies which have been using ABC for an extensive period of time.

Research Design and Methodology

Mixed method methodology was used in the current study, 92 surveys were distributed and the initial survey was adopted to evaluate the current state of ABC adoption and implementation as well as the level of ABC success. All of this is followed by semi-structured interviews conducted with financial managers / assistant financial managers and heads of accounting departments / heads of costing departments of companies within the Jordanian manufacturing companies. This study analyzes the data collected from interviews with representatives of four companies that have not yet adopted ABC in order to know the reasons for nonadoption of ABC. This is followed by interviews with three companies that have currently adopted ABC to know the reasons for not starting the implementation process. These interviews are followed by other interviews with six companies that have currently implemented ABC and currently using ABC information to identify reasons for implementation problems and factors relating to the implementation process. The analysis of the data was set by using both within company and crosscompany analysis.

Data Analysis

Quantitative Data Analysis

The aim of the questionnaire is to know the implementation rate and the level of ABC success in the Jordanian manufacturing companies, and to overcome the problem of implementation definition. This process took place from 22th October to 9thDecember 2010. Ninety–two questionnaires were distributed and eighty-two questionnaires returned, thereby giving a response rate of 89%. A phone call and personal interviews were made afterwards to improve the response rate.

Adoption and Implementation Rate

Based on the results of the questionnaire survey, companies are classified as follows:

Table 1: Number of Companies in each Category of ABC Implementation

Name of the Stage	Number of the Companies
Non-adopters	48
Adopters	14
Implementers	9
Users	7
Abandoners	4
Total	**82**

The first category includes 48 companies classified as non-adopters of ABC; companies in this group still use traditional costing system method to allocate overhead cost. The second category includes 14 companies classified as adopter companies. Here, the companies perceive the distortion of the existing cost system. They got approval from top management to implement and invest resources which are necessary to implement ABC system and the pilot project prepared in this stage.

The questionnaire results also show that 9 companies are classified as implementers. These companies are described as companies that have begun implementing ABC systems, and those that are in the process of forming a team of ABC implementation; determining project scope and objectives; designing training and workshops; collecting data and/or analyzing activities; cost drivers and organizational members' commitment to use ABC.

The fourth stage includes 7 companies that were using ABC; in this stage the companies have started using ABC information as a part of daily practices or integrating them with other systems. Finally, 4 companies were classified as the abandoners. In this category, ABC was abandoned after the decision to implement or use it in the company as a solution to the traditional costing system problems.

The previous studies used three criteria to determine the rate of ABC adoption and implementation; the first criterion was used by Maelah and Ibrahim (2006) to be acquainted with the adoption rate in Malaysian manufacturing companies. However, in their study, Maelah and Ibrahim (2006) do not segment ABC to stages. Based on these criteria, 30 companies out of 82 companies adopted ABC, which means that the adoption rate was around 36.5% in the Jordanian manufacturing companies.
The second and third criteria refer to Bjornenak's (1997) study that used two methods to determine the implementation rate. The second criterion is based on usage and refers to full implementation and using ABC information for various purposes in the company (Bjornenak, 1997). Currently, 7 companies out of 82 are using ABCinformation as a part of daily practice or integrated with other systems. Accordingly, the rate of ABC implementation within the Jordanian manufacturing companies based on this criterion is about 8.5%. The rate of ABC implementation (8.5%) is less than the rates found in the previous studies.
However, the usage rate was 10.7% in AlKhadash and Feridun's (2006) study. The definition of using was unclear as neither study segments ABC into stages. The third criterion is based on implementation as a process rather than using ABC information as a part of daily practices or integrating ABC with other systems. Accordingly, the rate of ABC implementation within the Jordanian manufacturing companies based on this criterion is about 19.5% (7 companies used ABC; 9 companies were in the process of implementing).

Level of ABC Success

This section examines the research question: For companies that are currently using ABC, what is the degree of ABC success?
The current study used three success measurements of ABC implementation within manufacturing sector in Jordan. Considering observed ABC maturity and using stage, this measure comprises the overall success of ABC implementation, ABC information characteristic rating and satisfaction with ABC implementation. Most of the previous studies measured success at different stages and not based on ABC maturity.

1. The Overall Success of ABC Implementation

The first finding of the current study is about the level of ABC success. Users were asked to rate their perception of the success of ABC implementation in their companies. The level of ABC success was ranked on a five-point scale where 1= Poor and 5 = Very good. Table 2 below shows the perceptions of the success of implementing ABC by users. The majority of ABC users perceived the success level of

ABC success was ranked on a five-point scale where 1= Poor and 5 = Very good. Table 2 below shows the perceptions of the success of implementing ABC by users. The majority of ABC users perceived the success level of implementing ABC as good (71.4%).

Table 2: Level of ABC Success among User Companies

	Frequency	Percent	Cumulative Percent
Good	5	71.4	71.4
Very good	2	28.6	100
Total	7	100	

2. ABC Information Characteristic Rating

The second measurement of ABC success is based on the technical characteristics of ABC information. This ABC information characteristic rating comprises of accuracy, accessibility, reliability, timeliness and understandability. This measure was used by McGowan (1998) and Byrne et al. (2009) to compare between ABC information characteristic rating and TCS information characteristic rating. The current study assumes that the higher the ABC information characteristic rating, the more successful will be the implementation (Innes and Mitchell, 1995; Krumwiede, 1998). The respondents were asked to indicate on a five-point scale, from 1 = very low to 5 = extremely high, the frequency of ABC information characteristic rating for each of the five ABC information characteristics listed in the question. The findings are reported in Table 3 below.

Table 3: Frequency of ABC Information Characteristic

		N	Min	Max	Mean	Std. Deviation
1	Accuracy	7	4	5	4.29	.488
3	Reliability	7	4	5	4.29	.488
4	Timeliness	7	3	5	4.00	.577
5	Understandability	7	3	5	4.00	.816
2	Accessibility	7	3	4	3.57	.535

Table 3 shows that accuracy (mean score = 4.29) and reliability (mean score = 4.29) are the highest ABC information characteristic rating. This is followed by the timeliness (mean score = 4.00), understandability (mean score = 4.00) and accessibility (mean score = 3.57). Table4 below shows that the majority of users answered about ABC information characteristic rating in the following levels: average, high and extremely high.

Table 4: ABC Information Characteristic Rating Among User Companies

	Average		High		Extremely high	
	Count	%	Count	%	Count	%
Accuracy			5	71.4	2	28.6
Accessibility	3	42.9	4	57.1		
Reliability			5	71.4	2	28.6
Timeliness	1	14.3	5	71.4	1	14.3
Understandability	2	28.6	3	42.9	2	28.6

3. The Satisfaction with ABC Implementation

The third measurement of ABC success requested the respondents to give their opinion about their satisfaction in three areas they gained after implementing ABC. These areas are: calculating method, cost reduction and gained benefits. The respondents were asked to indicate on a scale where 1 = very unsatisfied and 5 = very satisfied. Table 5 shows that the majority of ABC users had a quite high level of satisfaction with the cost reduction efforts (mean scores = 4.57), calculating method (mean scores = 4.43) and satisfaction with the benefits of ABC that user companies have gained (mean scores = 4.14).

Table 5: Level of ABC Satisfaction among User Companies

		N	Min	Max	Mean	Std.
3	You are satisfied with your business unit's ability to provide information to aid in cost reduction efforts	7	4	5	4.57	.535
2	You are satisfied with your method for calculating product and service costs	7	4	5	4.43	.535
1	You are satisfied with the benefits of ABC that your company has gained	7	4	5	4.14	.378

Table 6 shows that most companies were satisfied and very satisfied with cost reduction effort, calculating method and satisfaction with the benefits of ABC that user companies has gained during the use of ABC in their companies. This finding is consistent with the previous finding of Swenson (1995), for example, who found that the degree of satisfaction with costing will be high after implementing ABC.

Table 6: The Degree of Satisfaction with ABC among User Companies

	Satisfied		Very satisfied	
	Count	%	Count	%
You are satisfied with the benefits of ABC that your company has gained	6	85.7	1	14.3
You are satisfied with your method for calculating product and service costs	4	57.1	3	42.9
You are satisfied with your business unit's ability to provide information to aid in cost reduction efforts	3	42.9	4	57.1

Qualitative Data Analysis

Data Analysis for Non-Adopter Companies

1. Within-Company Analysis for NonAdopter Companies

This section describes within-company analysis. It gives an overall picture of each company and the reasons for non-adoption of ABC.

2. Cross-company Analysis

This section provides an outline of a crosscompany analysis. It includes all barriers and problems identified by companies and their overall assessments in each individual company. To help arrive at an overall assessment of the important factors that impact the implementation of ABC within the Jordanian manufacturing companies, the analysis of the four companies has been summarized in Table 7 Qualitative analyses together with quantitative ratings were done to generate the summary.

Table 7: Summary of Cross-Company Analysis

Factors	**Company**	**1**	**2**	**3**	**4**
Reasons for non- adoption of ABC					
High cost of ABC implementation		⍰	**X**	**X**	⍰
High cost consultants		**X**	**X**	**X**	⍰
Lack of accounting bodies		**X**	**X**	⍰	**X**
Satisfied with current system		⍰	**X**	⍰	⍰
Lack of top management support		**X**	⍰	⍰	**X**
small percentage of overhead costs		**X**	⍰	**X**	**X**

Legend: ✔ = factors supported by interviewee **X** = factors not supported by interviewee

The four companies interviewed do not adopt ABC system because there are barriers to this adoption, but the most important reason is the fact that they are satisfied with the current system. The cross-company analysis shows that three companies out of four are satisfied with their traditional costing system. Two companies out of four said that the lack of top management support is an important reason for not adopting ABC system. In addition, two companies out of four said that the high cost of ABC implementation is a reason for not adopting ABC in their companies. These results are followed by the last two barriers which are high cost consulting services and small percentage of overhead costs.

Data Analysis for Non-Implementer Companies/Adopters

1. Within-Company Analysis for NonImplementer Companies/Adopters

This section describes within-company analysis. Firstly, it provides a summary of background information which gives an overall picture of each company. It includes the universal background information, such as the type of sector and the number of employees of the company and its capital.

2. Cross-company Analysis for NonImplementing Companies

This section provides an outline of a crosscompany analysis. It includes all barriers and problems identified by companies and their overall assessments in each individual company. To attain an overall assessment of the important factors that impact the implementation of ABC within the Jordanian manufacturing companies, the analysis of the three companies has been summarized in Table 4.8. Qualitative analyses together with quantitative ratings were done to generate the summary.

Table 8: Summary of Cross-Company Analysis

Factors	**Company**	**1**	**2**	**3**
Reasons for non- implementation of ABC				
Lack of expertise to implement ABC		⍰	⍰	**X**
Too complex and Too time-consuming		⍰	**X**	⍰
High cost of ABC implementation		⍰	**X**	⍰
High cost consultants		**X**	⍰	⍰
Lack of internal resources		**X**	**X**	⍰
Lack of top management support		**X**	⍰	**X**

Legend: ✓ = factors supported by interviewee **X** = factors not supported by interviewee

The three companies interviewed have adopted the ABC system but have not implemented it yet because there are barriers to the implementation process. The cross-company analysis shows that two companies out of three faced four problems, most of them are related to ABC itself and not to behavior or organizational factors, These barriers are: too complex and too time-consuming, high cost of ABC implementation, high cost of consultants and lack of expertise to implement ABC. One company out of three said that lack of internal resources and Lack of top management support are the barriers they face, thereby resulting in delayed implementation process.

Data Analysis for Implementer and User Companies

1. Within-Company Analysis for Implementer and User Companies

This part describes within-company analysis. Firstly, it provides a summary of background information which gives an overall picture of each company.

2. Cross-company Analysis for Implementers and Users

The current section provides an outline of a cross-company analysis. It includes all factors and problems identified by companies and their overall assessments in each individual company. To help in arriving at an overall assessment of the important factors that impact the implementation of ABC within the Jordanian manufacturing companies, the analysis of the six implementers and user companies has been summarized in Table 9 Qualitative analyses together with quantitative ratings were used to generate the summary.

Table 9: Summary of Cross-Company Analysis

Factors / **Company**	**1**	**2**	**3**	**4**	**5**	**6**
Reason for ABC implementation						
5. Efficiency choice	X	X	X	X	✓	X
6. Fashion	✓	X	✓	X	X	✓
7. Fad	X	X	X	✓	X	X
8. Forced selection	X	✓	X	X	X	X
Factors that facilitate ABC implementation						
The role of top management support	✓	✓	✓	X	✓	✓
Training	X	✓	X	X	✓	X
Education	X	X	X	✓	X	X
Sufficient of internal recourses	X	X	X	✓	X	X
Non- accounting ownership	X	✓	X	X	X	✓
Higher information technology	✓	X	✓	X	X	X
Factors that motivate ABC implementation						
Shortcoming of existing system	✓	X	✓	✓	✓	X
change in business environment reasons						
- Globalization of consumer	✓	✓	✓	✓	X	✓
- increase Competition	X	✓	✓	✓	✓	✓
Change in costs structure (Growing costs)	X	✓	✓	X	✓	X
Global financial crisis	X	X	X	X	X	✓
Problems of ABC implementation						
Lack of software packages	✓	X	✓	X	X	✓
Takes up a lot of computer staff time	X	X	X	X	✓	X
High cost of ABC implementation	X	X	X	✓	X	X
High cost consultants	X	✓	✓	✓	X	X
Lack of local consultants	X	✓	✓	X	X	X
Difficulty in identifying activities	X	X	X	✓	✓	X
Difficulty in gathering data on cost-drivers	X	✓	X	X	X	✓

Difficulties of selection of cost drivers	✔	✔	X	X	✔	✔
Changes required for company structure to fit activities Selected	X	✔	X	✔	X	X

Legend: ✔ = factors supported by interviewee X = factors not supported by interviewee

The six companies interviewed gradually moved to implementing or using ABC system. The length of time required to implement the ABC system varied across the companies. In all companies, there is strong evidence that the fashion and the fad perspectives are the most important reasons for ABC implementation within the Jordanian manufacturing sector. One out of six companies said that efficiency choice is the reason for ABC implementation, and at the same time one out of six companies said that force decision is the reason for their implementation. The finding from the interviews shows the reasons for implementing ABC system in Jordanian manufacturing companies, including all Abrahamson four perspectives which are Fashion, Fad, Efficiency choice and Forced decision.

Top management support is the most important factor to influence ABC implementation. According to the findings from the qualitative data, five out of six companies agreed that top management completely support, are committed to and concerned with the process of ABC implementation. This result is consistent with the more general result that states that almost all successful innovations need the support of top management. Top management should focus on resources, goals and strategies in the implementation of ABC. They must show a promise to ABC by using it as a basis for decision-making. To support the use of ABC information, top management must use ABC information in communications and agreement with other workers.

Two out of six companies agreed that training was the most important factor to facilitate their decision to implement ABC. Training in designing, implementing and using the ABC system leads workers to appreciate, accept and take into heart the use of ABC.

Moreover, two out of six companies agreed that non-accounting ownership was the most important factor to facilitate their decision to implement ABC. Maelah and Ibrahim (2006) argue that if non accounting employees could take part in the early stage of ABC implementation, ABC can be implemented more effectively. Nonaccountants will support and promote ABC and be committed to its use and success. When ABC is owned by accountants, there is danger that it might be used only to satisfy their needs, which are often related to status within the accounting profession and external reporting.

Two out of six companies agreed that higher information technology was the most important factor to facilitate their decision to implement ABC. Anderson (1995) said that the level of information technology has important effects on the costing system design. For instance, the measurement cost associated with using additional cost drivers depends on whether the data required by that driver is already available, or has to be specifically determined. IT can also give detailed data related to cost driver information which is needed to implement ABC.

One company agreed that education is the most important factor to facilitate its decision to implement ABC, and another company agreed that sufficiency of internal recourses is the most important factor to facilitate its decision to implement ABC.

The shortcoming of the existing system, such as allocation problems and inability of the traditional cost systems to provide relevant information in the new business environment, are the major factors that motivate ABC implementation. Four companies out of six indicated that the shortcoming of the existing system motivated their decision to implement ABC. They also indicated that ABC system generates more detailed and accurate accounting information. The information is useful in assisting management in making various decisions.

Most of the respondents from the participating companies (five companies out of six) said that globalization and increase of competition motivated their decision to implement ABC. Companies operating in a more competitive environment have a greater need for advanced costing systems, such as ABC that more accurately assign costs to cost products. This is because competitors are more likely to take advantage of any errors from managers having relied on inaccurate cost information to make decisions.

During ABC implementation process, the company could be faced with problems related to changing implementation in practice. Thus, barriers to change could make the change process slower, hinder it and even prevent change. The difficulties in the selection of cost drivers have also been noted as a barrier followed by lack of software packages. Three companies mentioned that lack of software packages is a problem faced by them during the implementation process (see Table 5.3 for more details).

Conclusions

This paper collected the data from questionnaires and interviews with representatives of four companies that have not yet adopted ABC, in order to know the reasons for non-adoption of ABC. This is followed by interviews with three companies that have currently adopted ABC to know the reasons for non-adoption of ABC. This is followed by interviews with three companies that have currently adopted ABC to know the reasons for not starting the implementation process. These interviews are followed by others with six companies that have currently implemented ABC and currently using ABC information for different purposes. The analysis of the data was set by using both within company and cross-company analysis. The questionnaire data analysis shows three types of adoption rates based on the previous studies and this hopefully will help to overcome the problem of ABC implementation definition used by previous studies. Three measures are used in the current study to know the level of ABC success. Firstly, the Jordanian Manufacturing Sector assesses the degree of ABC success as good and very good. Secondly, the data analysis shows that the users perceived that ABC information characteristic rating is average, high and extremely high. Finally, the greater part of ABC users had quite a high level of satisfaction with their unit's ability to provide information to aid in cost reduction efforts, calculating method and gain benefits. The interviews finding shows that behavioral and organizational factors rather than technical factors influence ABC adoption and implementation, and this does not agree with some of the previous studies which said that only behavioral and organizational factors influence ABC adoption and implementation. However, future studies should segment ABC adoption and implementation to stages, and they must measure the level of ABC success at site of ABC maturity stage. Furthermore, it is recommended that future study should adopt case study with users companies to know the relation between using ABC system and the improvement in their financial performance.

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Do They Think Alike? Perception Analysis on Quality Environment (QE) Audit Effectiveness: A Malaysian Case

M. A. Norazlisham1, Mariati Norhashim2 and Noor Aishah Hassan3
1University of Malaya (UM), Kuala Lumpur, Malaysia
2Multimedia University (MMU), Selangor, Malaysia
3Graduate Business School (GBS), University of Malaya (UM), Kuala Lumpur, Malaysia

ABSTRACT

Prior studies have shown that Quality Environment (QE) auditing is an effective management tools, i.e. in improving housekeeping and environmental performance. There are limited studies aimed at identifying factors contributing to the effectiveness of QE auditing. Based on the framework studying factors contributing to internal audit effectiveness, this paper attempts to examine such factors in QE context. By identifying the potential differences of priority factors that lead to effectiveness, result of this study contributes to the improvement of quality audit process and management of QE certification auditing. This paper explores the differences of perception between management and executive levels on the prioritization factors that contribute to the audit effectiveness of Quality Environment (QE) audit. The study was conducted at an organization that is responsible for promoting QE certification both in private and government sectors in the Malaysian environment. Although the results show mixed response between the levels, the researchers found there is some similarity of prioritization on the top three factors that contribute to the QE audit effectiveness between management and executive level. Since this study only focuses on perception of the factor that contributes to the effectiveness, another focus such as measuring the effectivenesswill be an interesting area to explore for future research. Furthermore, a larger scale of study would contribute to the generalization of quality auditing series.

Keywords: Quality Audit, Quality Environment Audit, Audit Effectiveness, Malaysia.

Introduction

This paper presents the results of a study carried out in identifying perception of audit effectiveness amongst Quality Environment (QE) auditors. Quality environment audit in Malaysia was first introduced in 1998 and formally refered to as 5S certification audit. 5S is an acronym for five Japanese words that are Seiri, Seiton, Seiso, Seiketsu and Shitsuke. In this programme, the driving force for Quality Environment (5S) program comes from people. In this respect, Shitsuke is critical to its success. Shitsuke refers to instilling good habits through training. This component is expected to create a more conducive, clean and tidy workplace. The heart of the concept is the belief that positive change occurs through investing in people as "with every pair of hands comes a free brain". A successful Quality Environment (5S) Practice programme should contribute to a change in culture as well as a change in processes and work practice. This was demonstrated in a study conducted locally by Khamis, et al. (2009). In the study, 5S practices is seen as an effective technique that can improve housekeeping, environmental performance and health and safety standards in an integrated holistic way (Khamis, et al., 2009). The dynamic of 5S practices were further elaborated by Samuel (2010) with his 5S+ concept (a combination of 5S and Lean 5S). However, concerns have been raised in recent years about the usefulness of conventional compliance audits for continuous improvement due to inconsistency of audit processes and results, and the questionable value of compliance audits towards understanding complexities of business systems (Karapetrovic & Willborn, 2001). Karapetrovic & Willborn (2001) further suggested and advocated the implementation of a systems approach in auditing in order to add ‘‘value’’ to the audited organization. It is argued that in a well-planned and managed audit system, ‘‘competent auditors’’ must strive to identify improvements. Dereli, Baykasoglu, & Das (2007) asserted that the ‘‘quality world’’ has focused on the auditing process and tried to find effective ways to improve the quality of ‘‘quality auditing’’ and conclude that only ‘‘value-added audits’’ can be employed as a continuous improvement tool.

In communicating the outcomes of the study, this paper is presented in three main parts: the first part discusses the literature review on the QE audit, followed by a description of the methodology adopted in the study. The third part discusses the findings and its implication. Finally, the conclusion and recommendations for future research are then presented.

Quality audit is defined as the process of systematic examination of a quality system as defined in the ISO 9000 (2000). It further describes an ‘‘audit’’ as ‘‘a systematic, independent, and documented process for obtaining evidence and evaluating its objectively to determine the extent to which environmental performance and health and safety standards in an integrated holistic way (Khamis, et al., 2009). The dynamic of 5S practices were further elaborated by Samuel (2010) with his 5S+ concept (a combination of 5S and Lean 5S). However, concerns have been raised in recent years about the usefulness of conventional compliance audits for continuous improvement due to inconsistency of audit processes and results, and the questionable value of compliance audits towards understanding complexities of business systems (Karapetrovic & Willborn, 2001). Karapetrovic & Willborn (2001) further suggested and advocated the implementation of a systems approach in auditing in order to add ‘‘value’’ to the audited organization. It is argued that in a well-planned and managed audit system, ‘‘competent auditors’’ must strive to identify improvements. Dereli, Baykasoglu, & Das (2007) asserted that the ‘‘quality world’’ has focused on the auditing process and tried to find effective ways to improve the quality of ‘‘quality auditing’’ and conclude that only ‘‘value-added audits’’ can be employed as a continuous improvement tool.

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recommendations for future research are then presented.

Quality audit is defined as the process of systematic examination of a quality system as defined in the ISO 9000 (2000). It further describes an ''audit'' as ''a systematic, independent, and documented process for obtaining evidence and evaluating its objectively to determine the extent to which audit criteria fulfilled'' (Pivka & Mulej, 2004). The extent to which the audit criteria have been fulfilled can be considered as audit effectiveness. An audit is effective when it has met its objectives. Beckmerhagen, Berg, Karapetrovic, & Willborn (2004) mentioned that by virtue of being a goal oriented activity, the audit process and its achieved outcomes (audit performance) are always compared with the planned objectives. A typical evaluation of audit performance includes the measurement of the achieved effectiveness and efficiency, and a subsequent comparison of the actual performance with the expected goals. This is consistent with ISO 9000 (2000), where effectiveness is defined as the extent to which planned activities are realized, planned results are achieved and resources effectively utilised.

Today's organisations are compelled to obtain QS certification in response to the demands of customers and business conditions (Tsim, Yeung, & Edgar, 2002). Rajendran & Devadasan (2005) quote a study by Karapetrovic & Willborn (2000)w hich posits that in order to meet this requirement at a faster rate, quality-auditing exercise is being carried out hurriedly as a part of the QS certification process. Purely compliance audits have become a routine for both auditors and the auditee; therefore, the quality audit scope has been enlarged to areas where the organization or managers master their business (Pivka & Mulej, 2004). The question is then raised as to whether auditors distinguish the different objectives of compliance verses quality audits. Unlike compliance audit where the objective is to merely indicate that the auditee has met the quality standards, a suitably timed and properly organized quality-auditing programme will lead to continuous quality improvement (Beecroft, 1996). However, Pomeranz (1992) opines that there were two spectres that loomed over auditing: ineffectiveness and inadequate productivity.

Beckmerhagen, et al. (2004) stated that improvement in audit effectiveness may mean doing less auditing, while greater audit productivity may suggest doing more. They argue that in order to adequately measure audit effectiveness, one should evaluate not only the results (outcomes) of the audit against planned objectives, but also the audit process (extending from the planning and execution to the reporting and follow-up) and resources (including the auditor independence and competence). This conflict means that measuring audit effectiveness is indeed a more complex task than it might appear first hand. It involves the evaluation of the whole audit system, including objectives, processes and resources (Karapetrovic & Willborn, 2000).

This study attempts to adapt an approach used in a model developed by Mihret & Yismaw (2007) which outlined four grouping of factors that influence the internal audit effectiveness, namely: organisational setting, management support, internal audit quality and auditor attributes (Mihret & Yismaw, 2007, p. 472). Two of the groups i.e. internal audit quality and auditor attributes are now applied to QE audit effectiveness in this paper. This paper seeks to assess the perceptions of the factors that contribute to the Quality Environment audit effectiveness based on attributed internal audit quality.

Research Methodology

Data were gathered via a survey using selfadministered questionnaires. In order to ascertain that the responses were from the practitioner's perspective, the survey target respondents were from the QE certification auditors possessing knowledge about QE audit and who have participated in the certification audit process. The study was conducted at the audit certification unit of an organization that is responsible for promoting QE certification in Malaysia, both for public and private sectors. The survey questionnaire consisted of two main sections. The first section captured respondents' demographic profile, followed by the second section which listed 14 statements designed to obtain the respondents' perception towards the factors that affects QE audit effectiveness. Likert Scale (1 as strongly disagree, 3 as neither agree nor disagree and 5 as strongly agree) was used in capturing the respondents' perception. The survey questionnaires were later distributed via email and collected from the respondents in person.

Result and analysis

Demographic Background

The survey response rate is 63.89%; 23 out of 36 responses returned were usable for analysis. Analysis of the age group shows that only 26.1% of the total respondents were below 35 years old, and only 3 respondents did not have post-graduate qualification. The result shows that the respondents composition on position between managerial and executive position are almost balanced with 56.5% at executive level (both consultants and senior consultant level), and remaining at the management level (manager and above).

Summary of the years of working experience shows that although 21.7% (5 respondents) only had 1 to 3 years of experience in QE auditing, all of the respondents have been working for more than 5 years. This data show that all respondents have involved in QE certification auditing process. This is one of the important elements of this study in ensuring that the result is a reflection of QE audit practitioners' perception.

Top Three Prioritizations between Management and Executive levels

The overall mean scores for each of the 14 statements were calculated and listed from highest to lowest as displayed in Table 1. As shown in the table, the mean score ranged from 3.609 to 4.913 (on a five point scale with 1 being strongly disagree, 3 being neither agree nor disagree and 5 being strongly agree). Analysis on the mean differences between management and executive are within 0.19 points, from which can be safely concluded that there is no major gaps of perception between the two levels. Analysis by position groups, on the other hand, shows that differences between highest and lowest mean value for each groups are 1.1 points for management and 1.5385 for executive level. The lower disparity in mean values reflects consistence of responses from management as compared to the executive responses.

Table 1: Mean Score Comparison between Management and Executive Levels

#	Contributing Factors	Mgmt		Executive	
		Mean	Std. Deviation	Mean	Std. Deviation
1	No. of years of service determines the effectiveness of QE Audit	3.9000	.87560	3.7692	1.16575
2	No. of auditors determines the effectiveness of QE Audit	3.9000	.73786	3.3846	1.04391
3	The auditor selection affects the effectiveness of QE Audit	4.3000	.48305	4.3846	.50637
4	The knowledge, skills and abilities affect the effectiveness of QE Audit	[1]4.9000	.31623	[1]4.9231	.27735
5	The ability of auditor in applying QE standard criteria affects the effectiveness of QE Audit	[2]4.8000	.42164	[2]4.6154	.50637
6	The ability of auditor in determining the scope of audit affect the effectiveness of QE Audit	4.2000	.42164	4.3846	.76795
7	The ability of auditors to identify non- conformance of QE practices affects the effectiveness of QE Audit	[3]4.7000	.48305	4.3077	.48038
8	The ability of auditors to give recommendation for improvement determines the effectiveness of QE Audit	4.6000	.51640	[2]4.6154	.50637
9	The ability of auditors in applying knowledge on QE and other related subject matters affects the effectiveness of QE Audit	4.4000	.51640	[3]4.4615	.51887
10	The audit report produced by auditor determines the effectiveness of QE Audit	4.4000	.96609	4.3846	.50637
11	The duration of producing report determines the effectiveness of QE Audit	3.9000	1.10050	3.8462	.68874
12	The fair presentation of audit findings affects the effectiveness of QE Audit	3.8000	.91894	4.2308	.43853

1 3	The clarity of audit findings affects the effectiveness of QE Audit	4.1000	.31623	4.0769	.64051
1 4	Audit findings make best improvement on QE practices determine the effectiveness of QE Audit	4.6000	.51640	[3]4.4615	.51887

(Note: [1, 2 & 3] represents the top three values of means for each group)

Tables 1 shows that both levels rating knowledge, skills and abilities have the highest mean score with management mean score of 4.9 (value of standard deviation is 0.3162), and executive level mean score of 4.9231 (standard deviation value at 0.2774). Bsed on this, it can be safely mentioned that both levels perceive knowledge, skills and abilities as the most important factors that contribute to the QE audit effectiveness. There was a slightly more variation in the responses of the management compared to the executives'. It seems that both management and executives agree that the most important factors for QE audit effectiveness are the knowledge, skills and abilities of the auditor. Similar trends were also applied to the second prioritization based on mean score. This refers to the ability of QE auditor to apply QE standards criteria with management level mean score of 4.8 (standard deviation value at 0.4216), and executive level mean score of 4.6154 (standard deviation value at 0.50637). Additionally, for executive level, the ability of auditors to give recommendation for improvement also falls in the second ranking of prioritisation together with the ability to apply QE standards criteria. Both of these factors have the same mean score and standard deviation value (mean score of 4.6154, standard deviation value at 0.50637). Contrary to the first prioritization, there is a greater variation in the responses of the executive level compared to the management level. The results also imply that management rates the ability of the auditor to apply the QE standard criteria higher than the ability to recommend. Such view appears to be biased to compliance thinking rather than improvement thinking.

As for the third highest prioritization, mean score shows that management level rates auditors' abilities to identify nonconformance of QE practices with mean score of 4.7 (standard deviation of 0.48205), whilst executive rates ability to apply knowledge on QE and other related subject matter impacting the effectiveness of QE audit (with mean score of 4.4615, standard deviation value at 0.51887). Again, the executives responses were much more varied compared to the management. The executives also do not appear to differentiate between the criteria as can be seen from similar weightage given to item 14. Management on the other hand clearly weighs item 14 (audit findings makes best improvement on QE practices contributes more to the effectiveness of QE audit) than item 9 (auditors' ability in applying QE knowledge and other related subject matters). This balances out the earlier finding (second prioritization) of management preference for the compliance aspect of QE criteria application.

Responses Comparison of Factors Affecting QE Audit Effectiveness

Seven statements in the survey were unanimously recognized as the factors that contribute to the effectiveness of the QE audit. The seven factors are: (1) selection of auditors, (2) knowledge, skills and abilities, (3) ability of auditors in applying QE standard criteria, (4) ability to identify nonconformance of QE practices, (5) ability to give recommendation for improvement, (6) ability to apply knowledge to QE and other related subject matters, and (7) finding of auditing that will best improve QE practices. All the items were rated as agree (Likert scale value at 4) or strongly agree (Likert scale value at 5) by all the respondents.

In contrast with the seven items mentioned above, mixture responses were noted from the remaining 7 items between the two groups to the factors that affected the quality audit effectiveness. The seven items are (1) number of years in service, (2) number of auditors, (3) determination scope of audit, (4) number of audit report produces, (5) duration of producing audit report, (6) fair presentation of the audit finding, and (7) clarity of the audit finding. Mixture responses refer to the selection of response ranging from strongly disagree (Likert scale value at 1) to strongly agree (Likert scale value at 5).

Having said that, the percentages of respondents who have chosen to disagree or neither to agree or disagree is minimal as shown in Table 2.

Table 2: Analysis in Differences of Perception between Levels

Items	Disagree		Neither		Agree	
	N	%	N	%	N	%
1. No. of services determining the effectiveness of QE Audit						
Management	*1*	*0.100*	*1*	*0.100*	*8*	*0.800*
Executive	*2*	*0.154*	*1*	*0.077*	*10*	*0.769*
2. No. of auditors determining the effectiveness of QE Audit						
Management	*1*	*0.100*	*-*	*0.077*	*9*	*0.900*
Executive	*4*	*0.308*	*1*	*-*	*8*	*0.615*
3. The ability of auditors to determine the scope of audit affecting the effectiveness of QE Audit						
Management	*-*	*-*	*-*	*-*	*10*	*1.000*
Executive	*-*	*-*	*2*	*0.154*	*11*	*0.546*
4. The audit report produced by the auditor determines the effectiveness of QE Audit						
Management	*1*	*0.100*	*-*	*-*	*9*	*0.900*
Executive	*-*	*-*	*-*	*-*	*13*	*1.000*
5. The duration of producing report determines the effectiveness of QE Audit						
Management	*2*	*0.200*	*-*	*-*	*8*	*0.800*
Executive	*1*	*0.077*	*1*	*0.077*	*11*	*0.846*

Management	*1*	*0.100*	*2*	*0.200*	*7*	*0.700*
Executive	-	-	-	-	*13*	*1.000*
7. The clarity of audit findings affects the effectiveness of QE Audit						
Management	-	-	-	-	*10*	*1.000*
Executive	-	-	*2*	*0.154*	*11*	*0.846*

Conclusion

The result of prioritization, based on mean score values, indicates that the top three prioritizations of the factors perceived to contribute to the QE audit effectiveness are almost similar in both management and executive levels. However, clearly management have stronger preferences of certain aspects of QE audit over other aspects. This could be due to their experience as well as the level of responsibilities they hold. This could have implications for knowledge transfer from senior to junior auditors. Nevertheless, the results should be interpreted with caution as the sample is small and concentrated in one department. Half of the items were unanimously recognized as the factors that contribute to the effectiveness of the QE audit, whilst the other half provided mixed responses. The current study represents the perspective of QE audit effectiveness from the practitioners' point of view, targeted towards QE certification auditors. The outcome of the study contributes to the QE audit practices which enable the practitioner to make more informed decisions in designing continuous improvement process. The study also contributes to the existing literature on QE audit and perceives factors that contribute to its effectiveness, specifically focusing on Malaysian environment. Hence, recommendations for further research should include more robust research on the perception on effectiveness, not only for QE but also for other Quality certification series audit. The researchers also suggest future attempts to focus on outlining valid and reliable criteria for measuring auditor effectiveness in conducting QE audit. Empirical study at a larger scale is needed as business environment is facing constant changes and the expectation of Quality improvement program is on the rise. Studies at a larger scale need to be conducted for appropriate generalisation of the findings.

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Accounting Reporting in Banks: The Case in Egypt and the UAE Before and after the Financial Crisis

Afaf Mubarak
Faculty of Business Administration, Al Hosn University- Abu Dhabi-United Arab Emirates

A B S T R A C T

Banks in many countries including those in Egypt and the United Arab Emirates (UAE) suffered losses –at various degrees- as a result of the world financial crisis (started in 2006 by the US credit crisis). This stimulated the researcher to raise a question: Could accounting reporting by banks lessen the losses if more and better transparent information had been issued before the crisis? Corporate governance was considered a relevant framework based on an implicit assumption that: if stakeholders were better informed about the main policies and decisions undertaken in an adequate and timely manner, they may have to react to protect their interests and hence reduce losses. This study tests three hypotheses about disclosure of accounting information of banks and effects on quality of those information in Egypt and the UAE after the crisis. By analyzing data for years (2003-2005) as representative of pre-crisis and (2009-2011) as post-crisis findings show support for the research hypotheses. There is more disclosure about financial items, operations abroad, directors and their remuneration in both countries after the crisis than before and in the UAE more than in Egypt. It was also found a positive association between disclosure and quality of information in terms of the timeliness and credibility it covers. The differences between the two countries could be explained by bigger exposure to international market (financial and trade) and bank having more resources in the UAE compared to Egypt but not because of ownership concentration which had a weak influence on change in transparency and governance between the two countries.

Keywords: Reporting, corporate governance, Egypt, the UAE

Introduction

The recent financial credit crisis started in the USA has affected almost the whole world at different degrees. As Kilmister (2008) states, firstly, it directly and immensely affected the banks in the USA where bad debt threatened the solvency of the banks. Secondly, the apparent change in Federal Reserve policy from the earlier rescue of Bear Sterns created a panic in the inter-bank lending market there. Thirdly, stock market investors also panicked sending bank shares into freefall. Since bank.

regulation is based on the idea that loans can only be a certain multiple of bank capital and since the decline in shares reduced capital significantly, this looked likely to lead to a massive decline in bank lending, which would have further threatened the stability of the system. While these problems first appeared in the US and UK, where housing booms and bank deregulation had been especially strong, it quickly became clear that banks from many countries particularly Continental Europe and other countries. The crisis also affected the price of currency (particularly the US dollar) when exchanged with other currencies. The author argue that the crisis which started in US banks, exposed investments in those banks by banks from the rest of the world into risk (e.g. investments by Emirate companies in US banks). In addition, it reduced to the minimal investments by US companies into other countries including the so-called developing countries (such as Egypt which was also badly affected by a drop in numbers of tourists visiting it due to the crisis). Furthermore, the shrinking ability of US and continental banks to give credit to companies due to the crisis may affect the demand for oil; the major source of national income in a country like UAE. These are some reasons for studying the case in Egypt and the UAE. Besides, the two countries belong to the developing nations which are rarely examined in the accounting literature and the UAE has an additional strong reason to be included; that is the massive effect of debts and financial problems of Dubai World company -belongs to Emirates of Dubai- that impacts many other businesses involved with it around the world.

Banks specifically in UAE were largely affected by the credit crisis in USA due to high exposure to US financial market. Woertz (2008) reports that only a limited number of Gulf banks have publicly admitted and quantified their exposure to the subprime crisis. Abu Dhabi Commercial Bank –is only an example- has announced an exposure of $272 million and has sued Morgan Stanley and other banks for wrong advice in the case of an ill-fated SIV deal. The UAE Central Bank has asked UAE banks to declare their exposure to Lehman in the wake of US bank bankruptcy, but no public announcement by banks about further exposure has resulted from this measure. Exposure could be in the form of bank bonds, derivative trades where Lehman has acted as counter party (e.g. credit default swaps) or structured investment products that were guaranteed by failed US bank investment. In mid September 2008, UAE's Central Bank Governor Nasser Al-Suwaidi ruled out a systematic risk exposure of the UAE in the context of the financial crisis in the US. Three of the UAE's largest banks state no or limited exposure to the Lehman bankruptcy, according to Reuters.

The real problem for the GCC banks lies in the indirect exposure to increased costs of funding amidst maturity mismatches and credit exposure to local consumer, project and real estate financing. A major reason for this distressed scenario is the deterioration of Dubai-related credit that constitutes a large part of the GCC bond market universe, as the emirate borrowed extensively to finance its development projects and Dubai Inc. companies were among the most prominent issuers in the GCC. The effects on stock markets were severely witnessed by the end of 2009, the Saudi stock exchange fell by 49%, Dubai's by 72% and Egypt's by 61%.

The losses of billions of dollars to individuals, companies and governments were surprisingly not anticipated or expected through academics or policy makers a fact which Dirk J Bezemer (2009) widely described as "No one saw this coming". These financial scandals and collapses with dramatic influences triggered this research. The objective of this research is to investigate if accounting can contribute in corporate governance for better monitoring of management and other actions in order to provide better control on financial investments. The World Bank report about corporate governance in Egypt in 2004 states another reason particular to Egypt that increased the awareness of corporate governance that is, a number of banking scandals and the role of press in uncovering them.

There has been few academic papers that examined corporate governance in the countries of concern. One study by Baydoun et,al., (2005) investigate corporate governance practices in five Arabian Gulf countries (Kuwait, Bahrain, the United Arab Emirates, Qatar and Oman). They compared between these countries based on OECD's 2005 data and concluded that Oman is a leader in adopting corporate governance followed by Kuwait then the UAE while Bahrain and Qatar are the least. They suggest that a robust consistent regime of corporate governance in the region is still being developed and needs amendments in laws as well. Another exploratory study by Dahawy (2008) focused on presenting and analyzing disclosure of corporate governance practices among leading Egyptian companies especially under economic reform and consequences on capital market. The study depends on a checklist of 53 items developed by the United Nations to assess the level of disclosure of corporate governance practices. The research findings highlight a low level of corporate governance disclosure among the leading 30 companies, this might has been because of the novelty of the concept. Then Samaha and Dahawy (2011) published an empirical study about corporate governance structure and voluntary disclosure in volatile capital markets- the Egyptian experience. The results indicate that overall voluntary disclosure was low compared to other emerging capital markets. Multivariate results show audit committee presence as the most significant variable influencing voluntary disclosure followed by less significance of high ratio of independent non-executive directors. Factors that were not significant are government ownership aspects, number of shareholders, type of auditor, size, liquidity, leverage and industry type. The author might refer here to an excellent paper by Richardo Bebczuk (2005) on corporate governance and ownership applied on Argentina. It used quantitative measures on the quality of corporate governance and ownership structure in 65 companies' information for 2003-2004. The results showed that Argentinean companies examined are poorly governed vis-à-vis international practices. In turn, ownership appears to be quite concentrated but separation of control and cash flow rights as an indicator to expropriate minority shareholders prevails in less than half of the companies. Results refer to a sizable and robust effect of corporate governance on performance.

This presentation of studies on Egypt and the UAE with regard to corporate governance shows a possible justification for doing this research on the ground that: a) it holds a comparison between the two countries which did not happen in a previous study. b) it examines variables and use measurements that have not been applied before on those countries. c) it focuses the discussion on banking sector which was affected most by the world financial crisis.

The rest of the paper is organized as follows: first, a discussion of corporate governance practices in the two countries and a statement of the reasons for choosing banks to investigate. Second, developing research hypotheses, variable measurements and data. Third, analyses, primary findings and conclusions.

Corporate Governance in Banks in Egypt and the UAE

Egypt was a pioneer in the region in developing domestic governance code, launched in 2005 while the UAE issued its code in 2007, both based on the OECD Principles of Corporate Governance. The launch of the Egyptian Institute of Directors and of the Hawkamah Institute of Corporate Governance (in the UAE) was as much a response to the existing demand for governance know-how, as it was to encourage a stronger application of corporate governance. Koldertsova (2010) recognizes two waves of corporate governance in the Middle East and North Africa region; the first was in 2005 and the second is as recent as 2010. Such codes were introduced as voluntary guidelines in the two countries, providing best-practice recommendations based on international standards, notably the OECD Principles of Corporate Governance and only recently, regulators attempted to introduce stricter requirements. In Egypt, board independence requirements first stipulated in the governance code were subsequently incorporated into the listing standards of the Egyptian Stock Exchange.

A survey in 2006 by the Egyptian Banking Institute about corporate governance in Egyptian banks reported the following findings:

• Banks have in place a good general framework for good corporate governance need to be better communicated.

• Banks have in place written policies regarding corporate governance and codes of ethics.

• Banks ensure to a large extent equitable treatment of shareholders.

• Banks enjoy a high level of disclosure of material information and financial transparency in line with international standards.

• More effort needs to be geared towards designing and implementing special training programs on corporate governance and internal control practice for employees.

• Banks have specialized committees for supervising and monitoring major business functions. Limited responses indicated the presence of specialized committees concerned with good governance and risk management.

• Banks have internal and independent persons in their Board; however independent directors do not have a majority presence in these Boards.

• Banks, in general, do not take into consideration the evaluation of clients' corporate governance practices in their credit risk assessment systems.

Koldertsova (2010) report that the end of this decade marks the end of the first wave of corporate governance or "Hawkamah" in Arabic. The UAE introduced the code of practice to be compulsory for bank in 2007.

The resistance to corporate governance as a concept –mainly by family-owned companieshas shifted from the centre to the periphery which is an evidence of successful awarenessraising campaigns. Moreover, during the past two years, regional regulators have been abolishing the voluntary nature of governance standards. These developments mark the beginning of a new wave of corporate governance in the region, focusing on implementation as opposed to awarenessraising. This second wave is being manifested through the revision of governance codes in order to clarify and tighten provisions. Hawkamah, the Institute for Corporate Governance in Abu Dhabi the capital of the UAE, is an independent international association established to efficiently coordinate and sequence the design, planning and implementation of corporate governance reforms and monitoring the outcome of corporate governance on the private sector level. Both Abu Dhabi and Dubai securities exchanges promote the adoption of best practices of corporate governance in the listed and to be listed companies. The author managed to get some corporate governance reports issued by Orascom Telecom company in Egypt and Mashreq bank, Dubai Holding and Abu Dhabi Ship Building Emirati companies. While comparing the content of these reports could be the subject of another research, the reports generally agree on providing information about the board of directors, remuneration, Committees along with risk management and internal audit. Some reports included information on shareholders communication, insider share dealing, corporate social responsibility, share movement and professional conduct.

Characteristics of Banks in the Two Countries

There are features shared by banks in both countries:

1.Banks include huge investments for governments and individuals and hence transaction there affect huge investments.

2. Major banks in both countries are stateowned. In UAE, fifteen state-owned banks account for more than half of the sector's total assets according to Index of Economic Freedom 2011 and the four biggest banks in Egypt are state-owned as well. Banks are generally moderate to high level of ownership concentration, due to the presence of family-controlled ownership in UAE especially.

3.Banks are the major source of finance to other businesses in both countries as the Hawkama and OECD 2005 report state and their stability and success would affect the overall economy (as mentioned above the volume of losses from the financial crisis in the US).

4. Commercial banks hold "significant" shares in listed and non-listed companies in both countries.

Banks in both countries differ in:

1.Assets and resources

2. Years providing services

3. Exposure to international markets

4. Country's economic, political and cultural features including degree of corruption

Both the local bank scandals in Egypt before the world financial crisis and the latter's effects on Egypt and the UAE feed the debate about the role of corporate governance in providing better informed about current and future earnings. Huge literature examined many aspects of corporate governance (including shareholder's protection) from different levels (company's level vs. country's level) and via different perspectives. It is believed that the ownership of banks in Egypt and the UAE is dominated by the state –as mentioned above. Therefore, examining how to protect shareholders in that sector seems irrelevant. Rather, addressing the quality of accounting information and current and future earnings measurements that represents management choices would be more appropriate. Another research could address mechanisms and impacts of better shareholders' protection that could improve performance in this sector.

Developing Research Hypotheses

In the earlier section about research background, some academic papers applied on the two countries of concern were reviewed, e.g. Baydoun et,al., (2005), Dahawy (2008), Samaha and Dahawy (2011), Bebczuk (2005). In this section, the researcher will develop the research hypotheses that make it different from other papers in the area.

The situation in the US was triggered by the high-profile downfalls of large corporations like Enron and WorldCom where investors lost millions of dollars. According to He et.al., (2008), the Public Company Accounting Reform and Investor Protection Act was signed in July 2002 to restore investors' confidence. This act provides major changes to corporate governance and disclosure obligations. among these changes are: 1) firm executives must certify the accuracy of financial reports 2) firm executives and auditors must certify the effectiveness of internal controls 3) firm executives and auditors are faced by tightened accountability and increased criminal penalties 4) corporate governance is more independent. All these changes indicate that firms are faced with a tightened business environment which seeks to provide greater protection to investors.

In the UAE, The Emirates Securities and Commodities Authority issued Decision No. (R/32 OF 2007) directed at listed companies to comply with specific regulations regarding board of directors, internal controls, remuneration, auditing and corporate governance. In 2009, The Central Bank of the UAE released a revised draft of its corporate governance guidelines regarding banks as mentioned by Walton et.al. (2009). The guidelines acknowledge the important role played by banks in the UAE economy and the basis for the second hypothesis in this study as the features of transparency examined could enhance quality of information which in turn could improve shareholders' monitoring and assessing of management decisions and performance in terms of growth, efficient use of resources and better control over cash flow. However, in order to maintain this study in focus, the last part of the debate –that is quality of accounting information and monitoring management's performance or efficient investment or other managerial decision- will be assumed but not examined.

Calderón et. al (2005) from the World Bank identify exposure to be the integration of world goods and capital markets. A central dimension of globalization is the world trend toward larger financial and trade openness, observed in most industrial and developing economies. Financial openness has increased from a world median of 5% of GDP in 1970 to 45% of GDP in 2000 and trade openness has grown from a world median of 44% of GDP in 1970 to 70% of GDP in 2000.

The Central Bank of the UAE announced on its website in March 2011 that "Total banks' loans and advances, net of provisions and interest in suspense, increased by 0.6 per cent, reaching Dh1.049 trillion, and the total banks' assets increased by 1.8 per cent, reaching Dh1.66 trillion at the end of February this year," The Central bank also discloses that the number of local commercial banks operating in the UAE are 23 in addition to branches of foreign banks. Also the Central bank reveals that in 2009, the majority of local commercial banks are owned by state (and Emirate) or a governmental authority of it, for example National Bank of Abu Dhabi is 70% owned by Abu Dhabi Investment Council, Emirates NBD is 56% owned by Investment Corporation of Dubai and 5% by Jumaa Al Majid (a major individual investor), Sharjah Islamic Bank is 31% owned by the government of Sharjaa, Commercial Bank of Dubai is 20% owned by Investment Corporation of Dubai, 10% by A. Al Futaim Private investor and 7% Ghobash Trading and 6% A. Al Rostmani investor. The researcher develops a hypothesis based on these data that ownership is highly concentrated in UAE banks which could affect the production and disclosure of accounting information and corporate governance.

According to the Encyclopedia of the Nations, in 1999 there were 69 banks operating in Egypt: 4 state-owned commercial banks, 29 commercial banks, 33 investment banks, and 7 specialized banks; including 20 foreign bank branches. The 4 state-owned commercial banks-the National Bank of Egypt, the Bank of Alexandria, the Banque du Caire, and the Banque Misr-dominate the sector due to their size in terms of assets, deposit base and branches (an average of 200 branches each), accounting for 55% of the banking system's total assets. The Central Bank of Egypt supervises all banks in Egypt except for Misr African International Bank, the Arab International Bank and the Egypt Export Development Bank. The national stronghold on the system becomes apparent when the public-sector banks' shares in joint-venture banks are taken into account, which reveals the big four to be holders of over 90% of the total assets of commercial banks. The dominance of the public sector is heightened if the National Investment Bank (NIB) is included. Holding the long-term resources mobilized by the social security system, the NIB possesses roughly 25% of total bank deposits. Private sector ownership accounted for less than 30% of the banking sector in 2002, while the total assets of Egypt's banks in the same year amounted to $72 billion. The official web site of the Central Bank of Egypt reveals in December 2010 that the Egyptian banking system consists of 5 public sector banks, 27 private and joint venture and 7 off-shore banks with total assets of banks in Egypt is USD .221 trillion (less than quarter a trillion).

The researcher draws up the following hypotheses based on these factual data about banks in the two countries. It is obvious that the size of banks' assets in the UAE is bigger than those of Egypt, with more foreign operation and more concentration of ownership. There are two independent variables: transparency of accounting information and disclosure of corporate governance while the dependent variable is quality of accounting information. The proposed explanatory variables are foreign transactions or exposure, bank size and ownership concentration. The hypotheses will be formed to test three aspects. The independent variables group is examined: first, before and after the financial crisis in thetwo countries, second, it will be tested if there is a relationship between the independent variables group and the dependent variable, third, the independent variable will be compared in the two countries and whether the explanatory variables are valid to interpret differences or not.

Therefore the research hypotheses are:

H1: Disclosure of corporate governance and Transparency of accounting information in banks in both Egypt and the UAE is more after the financial crisis

H2: More Disclosure of corporate governance and Transparency in banks, increase quality of accounting information

H3: Disclosure of corporate governance and Transparency in banks in the UAE is more than in Egypt due to higher exposure to international markets, bigger size and more ownership concentration.

Measurements of Variables

Bushman and Smith (2003) introduced the following measurements that will be adopted in this study:

Quality of Accounting Information Is Measured by Two Attributes:

Timeliness of disclosure: measured by:

• Frequency of reporting

• Number of specific accounting items disclosed in interim reports

• Consolidation in interim reports

• Reporting of subsequent events and Credibility of disclosure: measured by:

• Share of big 6-accounting firms in total value audited

• Financial statements available in English

• Degree of disclosure of important accounting policies

Corporate Transparency: Measured by Reporting the Following Items:

• Long-term investment

• Capital expenditure

• Segment disclosure (product and geographic)

• Subsidiary disclosure

• Footnotes

Governance Disclosure

• Identity of major shareholders

• Range of shareholdings

• Identity of managers

• Identity of board members and affiliations

• Remuneration of officers and directors

• Shares owned by directors and employees

Exposure to International Market

In this research exposure to international market will be measured by the value of operations in international market as expressed in the annual report of a company.

Ownership Concentration

It is measured as the percentage of shares owned by the largest shareholders (owners)

Bank Size

This is measured by total assets

Regarding the independent and dependent variables, following Bebczuk (2005), for each feature, the company is given a value 1 if the item is there (there is partial or total public information) and 0 otherwise.

Data and Analyses

While more analyses have to be undertaken on the data, this section will report only primary results that are obtained at date of submission, given that the total number of banks operating in Egypt is close to that operating in the UAE. Data are collected from a total of 26 banks in each country from the annual reports and web sites including all state-owned banks in both countries in addition to some private and joint venture ones. While banks in the UAE fully adopt the IFRS, banks in Egypt use the Egyptian Accounting Standards according to regulations of the Central Bank of Egypt which are based on the old IAS (International Accounting Standards) and the current IFRS. However, the World Bank within the economic reform taking place since 2003 in Egypt- requires that all companies there should comply with the IFRS and a draft of the Company's Act is being prepared to include that. Thus, this point should not create a factor for differentiation at this stage. In order to maintain the research objective and compare between disclosure practices before and after the world financial crisis, the annual reports of the selected banks were examined over a period of four years: since the financial crisis began in the US in 2006, That year was avoided because annual reports of that year will reflect incredible shock and no sign of rather normal practice of business and of accounting practices will appear, therefore, the period of 2003, 2004 and 2005.

Given that the financial crisis itself ended sometime between late-2008 and mid-2009. Therefore, the annual reports of 2009 and 2010 are used to represent the after crisis situation (with interim data for 2011). SPSS program was used to prepare descriptive and analytical tools for data. This means the study includes 26x6 data observations for every individual variable or measurement.

Findings

Firstly: analysis shows support for the first hypothesis in both countries with a higher score for the UAE as in table (1) below. The first part reveals the aggregate measure of accounting disclosure and transparency was higher in the after-crisis era (2009-2011) than the before-crisis (2003-2005)

Table (1) Frequencies of Companies with Public Information about Timeliness, Credibility, Transparency and Disclosure

Item	Egypt % of companies with public information on the item		UAE % of companies with public information on the item	
	Before The Crisis	After The crisis	Before The Crisis	After The crisis
First: Dependent variable: **Quality of accounting information i**s measured by two attributes:				
A. Timeliness of disclosure: measured by:				
• Frequency of reporting	82	86	87	92
• Number of specific accounting items disclosed in interim reports	73	75	83	87
• Consolidation in interim reports	79	82	86	90
• Reporting of subsequent events	61	64	72	87
B. Credibility of disclosure: measured by:				
• Share of big 6-accounting firms in total value audited	11	9	56	64
• Financial statements available in English	42	38	91	93
• Degree of disclosure of important accounting policies	63	72	83	90
Second: Independent variables:				
1- Transparency: measured by reporting the following items:				
• Long-term investment	32	36	65	64
• Capital expenditure	45	49	78	82
• Segment disclosure (product and geographic)	21	32	83	86
• Subsidiary disclosure	19	34	86	93
• Footnotes	31	28	45	48
2- Corporate Governance disclosure				
• Identity of major shareholders	8	12	45	57
• Range of shareholdings	8	20	48	59
• Identity of managers	20	25	82	92
• Identity of board members and affiliations	32	22	83	90
• Remuneration of officers and directors	18	23	56	73
• Shares owned by directors and employees	24	20	58	71

Details show that banks reveal more details about their long term investments, geographic segments and subsidiaries. These included financial investments by banks in each country and abroad. As the world financial crisis hit banks in the UAE more than Egypt, the UAE regulatory bodies encouraged more adoption of reporting practices especially with relation to deposits abroad, operations overseas and disclosing events subsequent to closure of the fiscal year. Whereas banks in Egypt before and after the crisis are tightly controlled from the Central Bank of Egypt by limited deposits in a foreign bank abroad (no more than 10% of deposits) and the vast majority of that amount is in form of secured bonds of the US government, to avoid bankruptcy and not more than 5% are used in mortgagee activities. Some local issues are could be noted. For example, it is a common practice by Emirati companies in transparency to prepare their annual reports in both English and Arabic while this is very limited in Egypt. Also, in Egypt, all companies owned by the state including banks should be audited by a national independent organization "The Central Agency for Accounts". This fact minimized the appearance of big 6 firms in Egyptian data.

Secondly, the second hypothesis reads that more disclosure and transparency could increase quality of accounting information. The correlations in tables (2,3 and 4) below show the associations between measurements of disclosure on one hand and measurements of quality on the other as suggested in this research.

Table (2) Correlation between Independent Variables (Transparency and Disclosure) and the Dependent Variable (quality of information) for the Whole Data:

	1- Transparency		**2- Corporate Governance disclosure**	
	Before The Crisis	**After The crisis**	**Before The Crisis**	**After The crisis**
Quality of accounting information aspects: **A.** Timeliness of disclosure individually	.79	.82	.67	.79
B. Credibility of disclosure individually	.68	.84	.59	.82
Collective measure of Quality of accounting information	.72	.81	.63	.85

Table (3) Correlation between Independent Variables (Transparency and Disclosure) and the Dependent Variable (quality of information) for Egypt data:

	1- Transparency		**2- Corporate Governance disclosure**	
	Before The crisis	**After The crisis**	**Before The crisis**	**After The crisis**
Quality of accounting information aspects: **A.** Timeliness of disclosure individually	.47	.62	.71	.64
B. Credibility of disclosure individually	.42	.68	.59	.68
Collective measure of Quality of accounting information	.44	.63	.68	.71

Table (4) Correlation between Independent Variables (Transparency and Disclosure) and the Dependent Variable (quality of information) for the Emirati data:

	1- Transparency		2- Corporate Governance disclosure	
	Before The crisis	After The crisis	Before The crisis	After The crisis
Quality of accounting information aspects: **A.** Timeliness of disclosure individually	.68	.85	.63	.77
B. Credibility of disclosure individually	.74	.89	.72	.69
Collective measure of Quality of accounting information	.72	.84	.71	.74

It reveals a positive relationship between quality of disclosure and corporate governance in both eras. The relationship is stronger for the after financial crisis period in both countries. During the period of 2009-2011, banks in the UAE released more relevant and timely financial information to users in different ways and on more frequent basis. The amount of details given by UAE banks in terms of financial statements, plans, projects, followup review announced about the financial operation and the open discussion in the media about some business decisions such as take-over decisions were much witnessed in the UAE bank environment than in Egypt. Only to name a few: The information about Dubai Islamic bank offer to buy a controlling stake in 2011appeared in UAE Interact official site as well as various banks when issue bonds. Also the news that First Gulf Bank pulls the plug on Libyan operations in 2011 was reported in UAE Interact official site and similarly National bank of Abu Dhabi operations in Oman.

Thus, the two dimensions measured for quality were found collectively positively correlated to the measurement of disclosure in both countries with the association stronger for the UAE during the period of 2009-2011 compared to the period of 2003-2005 and compared to banks in Egypt during the first period. In terms of details of information, the reporting of accounting policies is much more than that of banks in Egypt along with a consistent reporting of members of board of directors, key managers and their remuneration. The Egyptian banking environment does not see the importance of these information yet, hence, few cases reveal that to readers.

In the UAE there is a big-6 accounting firms involvement issuing the financial statements available in both Arabic and English compared to Egypt and more accounting policies are disclosed in a more systematic way. This finding may have resulted from the fact that there is more involvement of international market by banks in the UAE than in Egypt and the IFRS has been adopted almost in full for a longer period of time. In conclusion, the second hypothesis is supported. It is notable that UAE banks score higher than Egypt in governance disclosure in terms of releasing information about directors, their affiliations and remuneration. This practice is still thin in Egyptian environment.

Thirdly, Primary Analysis including descriptive and regression in table (5) below indicates that disclosure and transparency of accounting information by banks in the UAE is more than in Egypt due to the former's more involvement in international trade and markets.

Table (5) the Regression between Transparency and Disclosure as Independent Variables and Quality of Information as Independent Variable under Foreign Exposure, Size and Ownership Concentration as Explanatory Variables

	Dependent variable: **Quality of information**		
Explanatory Variables in relation to: Transparency	Exposure to foreign Markets .003	Size .020	Ownership concentration .42
Disclosure of corporate governance	.005	.019	.11
Adjusted R2 No. of observations	.421 31	.136 52	.041 43

It is mentioned earlier that there are restrictions on commercial banks in Egypt by the Central bank regarding the amount of deposits that can be put abroad and this reduced the impact of the financial crisis in Egypt. In other words, the same reasons worked on imposing more regulation on the UAE banks after the world financial crisis. However, the bigger resources of UAE banks comparing to Egypt along with the state's full guarantee of all deposits has been supported, for the banking sector absorbed the negative effects of the international credit crisis effects in spite of the huge losses which UAE banks experienced. The higher ownership concentration in the UAE worked against mangers' willingness to disclose information. More concentration of ownership might mean more powerful owners, but the huge resources invested in the business and the separation of management from business increases the probability of losing control. In UAE case, few cases for managers' manipulation were revealed because often businesses are owned by families and run by members of the family. While more banks in the UAE are owned by families and prestigious figures (Al Mashreq bank and National Union Bank are examples), this feature exists far less in Egypt's case (only for some foreign banks operating in Egypt e.g. Ouda Lebanese Bank) where banks specifically are different from other sectors in the economy where mostly are state-owned.

Given that this is still a working paper, the author wishes to make this note a reservation. Also, no previous studies were found in this area with empirical tests to compare results with. The study of Bushman and Smith (2003) while sharing the research arguments and questions, it did not test arguments on real data. Baydoun et. al., (2005) report in a more like content analysis the corporate governance practices in five Arabian Gulf (only) countries. Our findings agree with Baydoun et. al., (2005) in that, the UAE scores more than other Arab countries (in their case Gulf countries and in our case Egypt) in adopting and reporting on corporate governance. This study findings seem incomparable with Bebczuk (2005) which investigates corporate governance and ownership impact on performance while effects on performance are not targeted or examined in this research. However, this study's results regarding Egypt agree with those reported by Dahawy (2008) where he found the level of disclosure in Egypt is low and that non conformity to corporate governance code may be because companies are not convinced of the needs and benefits of corporate governance.

Conclusion and Future Expansion of Research

This study examines the disclosure and transparency of accounting information revealed by banks to different users and the relationship between this and a potential improvement in corporate governance and quality of information. The research starts by justifying the choice of banks to be the focus of examination. Banks in Arab countries and around the world suffered huge losses due to the credit crisis in the UAE in 2006, some of the money lost belonged to states rather than individual. Therefore it was worthwhile to discuss how those and other users of accounting information can be better informed about decisions and performance. The world financial crisis all over the world and some bank scandals in Egypt fed the desire to provide higher quality accounting information that are more, timely and credible. Data collected from the financial reports of banks in both countries and other sources are analyzed. Primary findings show support for the research hypotheses. Splitting data to before the world financial crisis and after, show more disclosure about financial items, operations abroad, directors and their remuneration in both countries (higher for the UAE which was hit larger by the crisis). It is also found a positive association between disclosure and quality of information in terms of the timeliness and credibility (with higher scores for the UAE). The differences between the two countries could be referred to more exposure to international market (financial and trade) in the UAE when compared to Egypt. Other reasons for the differences are relatively more ownership concentration and bigger bank resources in the UAE when compared to Egypt. This research could be expanded further by examining the effects of the variables that make the change between banks' environment in the two countries and each of corporate governance practices and accounting disclosure. The analysis may extend to examine the effects of each of the following factors: years of service and size of operations in one hand and accounting disclosure and transparency or quality of accounting information on the other hand. It could also examine effects on specific corporate governance items such as shareholders' protection industries which have enough shareholding (no ownership concentration) to examine.

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