A Framework for Auditing Management Control Systems and its Application in a Public Organisation

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Abstract

The goal of applying a Management control system (MCS) is to help an organisation in implementing its objectives and strategies efficiently and effectively. A MCS ensures the congruence between organisational units' and managers' goals and explains deviation between them.

The main intent of this paper is to provide an auditing framework for evaluating formal management control systems in organisations, or measuring improvement in implementing a management control system in organisations.

The study relies on an explorative study; and represents 50 questions based on the approach developed by Robert Anthony and his colleagues. The result of its application in one public organisation is presented in the final section of this paper.

Keywords

Management Control Systems
Management Accounting
Auditing Framework
Questionnaire

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Introduction

During the last two decades, management and economics scholars have put great effort on formulating strategies and planning in competitive markets; but they have neglected to focus on strategy implementation and control (Simons, 1995). Management control system (MCS) is one of the tools that can help organisations in dealing with this problem. The goal of applying a MCS is to help an organisation in implementing its objectives and strategies efficiently and effectively. A MCS ensures the congruence between organisational units' and managers' goals and explains deviation between them.

Most management systems have a process for auditing the status of the system, as measured against a reference model. There are auditing processes for management information systems, environment management systems, safety management systems, and quality management systems (e.g., Malcolm-Baldrige or EFQM).

However, despite of the importance of MCSs in implementing organisations' strategies, auditing MSCs has not been discussed much in the literature. The main intent of this paper is to present a general auditing framework for evaluating a formal MCS and its application in organisations. Therefore, the question in this research is:

"What are the key elements of a MCS that should be audited in an organisation, and how can they be measured and evaluated?"

The research methodology consists of four stages. In the first stage, the literature regarding control, MCSs and auditing is reviewed. Next, various models of MCSs and the selected reference model are reviewed and then the auditing framework is developed via an explorative study. Finally, the results of implementing the proposed framework in one public service organisation are presented.

Review of the Literature

Management Control Systems Literature

Control has been an important element since the early writings in management literature. Mills (1970) considered management control to be a central management discipline. Organisational control contains the activities to achieve organisational goals, and is conceived as a three-stage cycle (Daft,1984): (a) planning a target or standard of performance, (b) monitoring or measuring activities designed to reach that target and (c) implementing corrections if the targets or standards are not being achieved.

During our review, we found two categories of control systems. Daft (2001) classified control strategies into three groups: bureaucrat, market and clan. Simons (1995, 2000) classified control systems into four groups: core values, beliefs, boundary and diagnostic control systems. The Management Control System is a type of control systems that Daft (2001) assigns to the bureaucrat category and Simons (1995, 2000) defines as a diagnostic control system. The definition of a MCS has evolved throughout the years: from one focusing on the provision of more formal financially quantifiable information, to one focused on assisting in managerial decision making to one that embraces a much broader scope of information (Chenhall, 2003).

Designing a MCS to ensure that the organisation follows managers' goals is a highly-complicated task. A well-designed system contains a set of interdependent elements, such as performance measurement, motivation and organisational structure (Rotch, 1993). Different authors focus on an MSC's different elements: the means of gathering appropriate data (Horgren and Fosters, 1991), the process of influencing behaviour (Merchant, 1985), the behavioural effect of control systems (Young, 1988), the organisational structure's influence on the control process (Vancil, 1979) and the behavioural approach to budgetary control (Hofstede, 1968).

Finally, some scholars focus on the exercise of power (Otley et al., 1995). Rotch (1993) suggests instead of comparing different approaches about control systems' definitions and figuring out their comparative benefits, scholars may integrate the perspectives. In other words, he argues that the abovementioned aspects of control systems are related to each other and each can partially highlight one component within the unified framework of a control system.

Auditing Literature

Auditing, much like other management concepts, is defined in various ways (Karapetrovic and Willborn, 2000; Nolan, 1984). Bititci (1995) mentioned that the developing and adopting a rigorous auditing method or framework is required to systematise the measurement of a management system within organisations. The auditing method, as defined by the reference model, allows the managers to identify the weakness points within their management systems or to figure out the gaps within the status quo and the desired status in respect to each system components.

Most management systems have a process for auditing the current image of the organisation from that management system's perspective, such as the information management system (Collier and Dixon, 1995), the environment management system, the safety management system, quality management systems (Karapetrovic and Willborn, 2000) and knowledge management systems (Gloet, 2002). In the auditing method, purposeful and measurable criteria for every component of the reference model are developed, and the status of the organisation with respect to each component is measured and compared with the reference model (Bititci, 1995).

The literature review revealed the absence of a comprehensive framework for auditing organisations' experiences in employing formal MCSs. Only two papers written about the evaluation of MCSs were found. Otley's (1999) work is restricted to five broad questions, which may only help determine the overall status of MCSs in organisations. Baraldi (1998) based his auditing on the Ramanthan (1982) model but explained it inadequately, and no further references to this work appear in his own writings or those of others.

The Proposed MCS Auditing Framework

A review of the MCS literature revealed many MCS models, such as those of Daft and MacIntosh (1984), Flamholtz (1996), Baraldi (1998), Simons (1995, 2000), Ramanathan (1985), Anthony and Govindarajan (2001) and Anthony and Young (1999). Because an auditing framework should be based on just one MCS model, the Anthony Model[1] is used as a reference model. The Anthony Model has one of the best-articulated theoretical bases and has been widely used in the public, non-profit, and private sectors in the United States and other countries (Anthony and Govindarajan, 2001; Anthony and Young, 1999).

However, there are some criticisms of the Anthony Model, which will be addressed briefly (for detailed review see Otley et al., 1995). Firstly, it can be stated that Anthony's approach does not adequately highlight strategic issues such as defining strategies, goals and objectives. Secondly, some argue that Anthony's books highlight the planning and control aspects through accounting rationales, but do not examine the behavioural issues. To briefly reply to these arguments, Anthony was aware of the problems related to the challenges or difficulties within goal and strategy formulation when he and his colleagues included them as inputs for MCSs. In addition, he and his colleagues emphasised that a MCS is one of the available management tools but not the only one. Furthermore, while there have been developments in areas associated with control, such as information systems, supply chain management, compared to traditional accounting these management systems have been less considered as mechanisms to integrate the activities within organisations. "Accounting is still seen as a pre-eminent technology by which to integrate diverse activities from strategy to operations and with which to render accountability" (Otley et al., 1995). Finally, it is worth noting that many criticisms of Anthony's approach are based on the first work developed by Anthony (1965) under the title of "management planning and control system". He and his colleagues revised

their approach to resolve the above issues in later papers. For example, they address subjects such as MCSs in service organisations or large multinational organisations, the management control of projects and other organisational issues, such as organisational culture and information technology, which should be considered in designing a MCS.

The remainder of this section will explain the proposed auditing framework. As mentioned above, the selected reference model, based on the questions posed, is representative of Anthony's Model. Anthony's model contains the following three aspects: (1) structure, (2) processes and (3) infrastructure. A management control structure is built on management infrastructure and comprised of organisation responsibility centres (organisational units with specific responsibilities in the organisational structure).

The structure clearly defines the responsibilities of each organisation unit. MCS processes are composed of four components: strategic planning; budgeting; measurement and evaluating, reporting and correction. Strategic planning and budgeting define the long- and short-term objectives. Measurement measures the performance of organisation units and compares this with the objectives. Evaluation, reporting and correction analyse the gap between performance and objectives, report on any possible gap and formulate corrective actions, including rewarding good performers. Finally, the third aspect of a MCS is the infrastructure, which lays down the foundation upon which an organisation can build its MCS. The infrastructure is comprised of three major components: the organisation information system, reward system, and culture. The organisation information system defines the flow, accumulation and retrieval of information through the organisation. A good information system should be in line with the needs of managers and decision makers to perform their job and facilitate management processes. The reward system is another element of the infrastructure. A reward system should exist to motivate managers and employees to use their best abilities to achieve the goals set by the management control processes. If there is no reward system or if the

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[1] The reference model in this paper is based on Anthony and his colleagues' books (Anthony and Govindarajan, 2001; Anthony and Young, 1999);

and, for addressing these two references for short, collectively the model will be referred to as the Anthony Model.

reward system is not in line with what the organisation sets as its goals, then MCS cannot motivate managers to move in the direction of the organisation's goals. Finally, culture is another element of infrastructure. The culture of an organisation should take the MCS and processes seriously. If people who work in an organisation do not participate in the management control processes, then the organisation cannot implement a MCS.

The research output is based on an explorative study and represents fifty questions that evaluate all dimensions of a MCS (Table 1). These questions are intended to evaluate the efficiency and effectiveness of all MCS components (see Table 2). The score for every question, using a Likert scale, may be 1, 3, 5, 7 or 9. In addition, the score for every component will be determined by the average score of its related questions, and the overall weight (score) for every component is determined to be equivalent to those of the other components.

Table 1. Proposed Auditing Framework from an Overall Perspective

Aspects	Components of a MCS	Number of Questions
Infrastructure	Organisational Culture	6
	Information System	6
	Reward System	3
Structure	Responsibility Centres	5
Process	Strategic Planning	7
	Budgeting	11
	Measurement	5
	Evaluating, Reporting and Correction	7
	Total	50

Table 2: The Framework Questions

QUESTIONS OF THE STRUCTURE AREA
Question#1: The organisation has an obvious or articulated structure, in which duties, authorities, and communication among its units are well-defined and clarified.
Question#2: Organisation managers know definitely and transparently which results they are responsible for.
Question#3: Organisation managers clearly or apparently know which resources they have authority or power of control over in their management area.
Question#4: Organisation managers' authority or latitude is commensurate with their duties or responsibilities.
Question#5: Who every manager reports to and receives reports from is transparent.
QUESTIONS OF THE PROCESS AREA
QUESTIONS OF THE STRATEGIC PLANNING SUB-AREA
Question#6: Managers have a clear vision of the organisation's long-term (from 3 to 5 years) objectives and strategies (in other words, the organisation's objectives are well-defined, measurable and scheduled, and its strategies are well-described and documented).
Question#7: Managers view the strategic planning process as a learning tool that makes them get involved in understanding and implementing strategies (in other words, existent dialogue, negotiation and arguments among mangers are conducive to strategy clarification and managers' coordination and consolidation enhancement and also determine their commitments and duties regarding strategy implementation.)
Question#8: Line managers have an active presence and role in the strategic planning process.
Question#9: The organisation has delegated the strategic planning preparation, facilitation and updating to one of its staff units or a newly established unit.
Question#10: The organisation performs strategic planning formally and systematically based on specific predetermined procedures or steps.

Question#11: The organisation's atmosphere is efficient and appropriate, encouraging staff to send their novel ideas and programs. Subsequently, these ideas receive management attention for development and use.

Question#12: Programs, as a result of strategic planning process, are consistent and also coordinated toward achieving the organisation's overall objectives.

QUESTIONS OF THE BUDGETING SUB-AREA

Question#13: Budgeting will be prepared based on a framework developed via strategic planning (in other words, resource allocation is based on assumptions that were agreed upon in the strategic planning step).

Question#14: The organisation's budget determines the responsibilities of units managers (responsibility centres) via accurate objectives in the framework of input or output measures.

Question#15: Every responsibility centre manager in the organisation participates in the preparation of the budget.

Question#16: The objectives in the budget are set by using various kinds of standards, such as determined or calculated, historical and benchmarking, from appropriate organisations.

Question#17: The budget objectives are not so accessible that managers cannot be prompted to strive toward them and not so inaccessible that managers despair of ever reaching them.

Question#18: Computer software is used in facilitating the budget, keeping the budget up-to-date and evaluating managers' policies, as well as supporting their decision making (such as a spreadsheet).

Question#19: The organisational unit for budget preparation performs its duties formally and systematically based on specific predetermined procedures or steps (preparing needed forms, demonstrating budget preparation guidelines, ensuring that information flows between units such marketing and production, etc.).

Question#20: The budgeting unit, which is responsible for the collection and validation of the proposed budget numbers, has a friendly, unthreatening relationship with units managers and behaves fairly regarding them.

Question#21: It is believed that the budget plays a chief role in unit responsibilities and resource allocation in the organisation.

Question#22: Resource allocation decisions are not made in an inappropriate or dysfunctional environment in which managers attempt to exaggerate their needed budget, diminish objectives and pursue personal, rather than organisational, goals.

Question#23: The organisation reviews its budget via a zero-based approach once every 5 to 8 years.

QUESTIONS OF THE MEASUREMENT SUB-AREA

Question#24: There is a relationship between responsibility centres' objectives and their evaluation measures.

Question#25: The organisation has selected a collection of financial measures (such as income or expenditure) and non-financial measures (such as services quality, customer satisfaction or innovation) for the measurement and evaluation of its performance along various dimensions.

Question#26: The measures for performance measurement and evaluation are selected with regard to the organisation's overall objectives and strategies.

Question#27: The organisation has a process for performance analysis (the comparison of real and budget numbers, deviation computation and looking for deviation causes).

Question#28: Managers agree with the approach used in performance measurement and regard it as a means of correcting and improving their units.

QUESTIONS OF THE EVALUATIING, REPORTING AND CORRECTION SUB-AREA

Question#29: Organisation staff receive reports and feedback regarding their actions and performances.

Question#30: Managers receive a comprehensive and reasonable balance of quantitative and qualitative information.

Question#31: The reports are prepared with regard to managers' organisational levels and responsibility areas.

Question#32: It is believed that reports and feedback do not have needless and excess information; rather, they are believed to be valuable and adequate.

Question#33: Reports communicate their information transparently and clearly (for example, figures are used considerately).

Question#34: The roots of deviations between budget and performance numbers are detected and analysed, and subsequently, the role and contribution of every unit are determined.

Question#35: After performance evaluation and reporting, if necessary, corrective actions are considered, and a decision regarding continuation, change or abandonment is made.
QUESTIONS OF THE INFRASTRUCUTRE AREA
QUESTIONS OF THE REWARD AND COMPENSATION SYSTEM SUB-AREA
Question#36: The reward and compensation system is based on a measurement system (this means that the success or failure of a manager in reaching the goals define in the measurement system is the only method that determines the reward or punishment that should be given).
Question#37: In developing the reward and compensation system, the organisation has used an optimum mixture of subjective and objective approaches.
Question#38: The rewards or incentives are considered to be accessible and rational.
QUESTIONS OF THE ORGANISATION CULTURE SUB-AREA
Question#39: Chief managers support the management control system with their behaviours and decisions (for example, they use it in making decisions, evaluating performances and the realignment of rewards and compensation).
Question#40: The organisation's mission and objectives are accepted broadly in the organisation, and managers and staff are committed to pursuing and realising them.
Question#41: The organisational culture is developed enough that it is possible to extend self-control mechanisms to managers and staff (this will help to decrease the difference between personal and organisational objectives, and subsequently, more duties and responsibilities can be delegated to managers and staff.)
Question#42: The organisation cares about its new staff's consistency with its values and objectives.
Question#43: Informal factors, such as ethical beliefs, values, business norms and nationality considerations that influence staff behaviour are consistent with existing management control. Thus, the same behaviour is expected from managers and staff two.
Question#44: Developed organisational objectives and programs should be in harmony with personal objectives.
QUESTIONS OF THE INFORMATION SYSTEM SUB-AREA
Question#45: The information system provides necessary software and hardware for the management control process phases (strategic planning; budgeting; measurement and evaluating, reporting, and correction.).
Question#46: The information system provides the requisite information for unit managers to support them in various areas, such as their decision making, program control, and comparing programs' inputs and outputs.
Question#47: Provided information is overtly and clearly accessible to the right persons in different levels of the organisation.
Question#48: Provided information is up-to-date.
Question#49: Provided information has a level of accuracy that is acceptable to managers.
Question#50: There are no variances or inconsistencies among the numbers and figures used in strategic planning, budgeting and accounting (this means that all of numbers and figures are created from the same resources, such as one information bank or specific people).

(Developed from Anthony (1965) and Anthony et.al., (1999, 2001)

Results of Using the Proposed MCS Auditing Framework

In order to provide an illustration of the proposed auditing framework in practice, we applied it in a public organisation. The organisation provides gas supply to consumers in Iranian provinces. Fifty respondents with managerial positions filled out the survey including 10 medium-level managers and 40 low-level managers. After collecting all responses, we computed the average value for each question. Next, we computed the mean of questions values within each component of MCS. Eventually, we concluded with eight values associated with eight components of MCS system.

Afterwards, we used a radar chart to illustrate the results of the auditing framework at the selected organization (Figure 1). The maximum score in each dimension is 9. Organisational structure is the strongest element of the MCS at our case study (6,7). Moreover, Figure 1 illustrates that the weak element of the MCS in this particular public

organisation is Organisational Culture (3,3). Other MCS elements' scores are close to each other between 4,6 and 5; which are not significantly different from the average value

of 5. Strategic Planning, 4,8; Budgeting, 5; Measurement, 4,6; Evaluation, Reporting, and Correction, 4,7; Information System, 4,6; Reward System, 4,9.

Figure 1: Organisational Image from a Management Control System Perspective
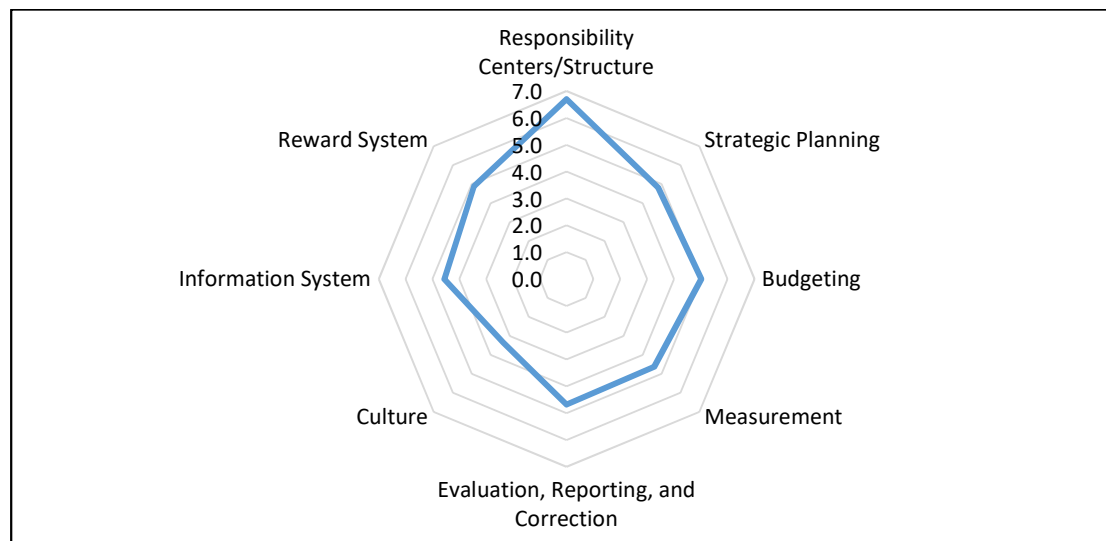
Conclusion and Suggestions for Further Research

This paper presents the first framework for auditing formal MCSs in organisations based on the Anthony model. The framework recognises three aspects of a MCS (structure, processes and infrastructure) and presents questions for auditing the three aspects. Although this framework can be used to assess the status quo of a MCS, it can be further developed and improved. In fact, one could not claim that the proposed framework is final with respect to MCS auditing. It must be recognised that this is the first version and requires further development and refinement to consider new MCS developments and theories. For example, we believe the auditing framework has some limitations, which can be the subjects of future research. First, the answer to the framework questions, which are based on the Likert scale, may be 1, 3, 5, 7 or 9. The final score for every question could be determined in two ways: by averaging of managers' scores or by determining some certain requirements or evidence that organisational managers should present; then, based on that evidence, the managers would receive scores from an external analyst. In the latter case, the validity of scores will be increased, and it will allow for one organisation to compare its level of MCS use

with those of other organisations. Currently, the auditing framework can be performed in the first way; some development and research will be needed to make the second method possible. The other limitation of the research is that the components of the framework have equal weight. To address this issue, the researchers are faced with two specific problems: the first is that there is no common view and the second is that even if an agreement was reached, the question of by how much greater one component should be weighted as compared to another? would remain. Attempts to identify component weights maybe a subject for future research as well. Such developments would make the assessment more objective and make its results in different organisations comparable.

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