

Integrating Formal and Informal Controls for Organizational Adaptability: A Refined Conceptual Framework

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Abstract: The purpose of this conceptual paper is to develop a refined conceptual framework that links formal and informal management controls to the achievement of organizational adaptability, defined as the simultaneous pursuit of efficiency and innovation. Despite widespread recognition that management control systems (MCS) should adapt to dynamic environments, a significant gap persists between traditional control theory and the practical challenges of fostering both stability and change. Drawing on established literature in management control theory, organizational behaviour, and strategic management, this paper synthesizes fragmented research to propose a testable conceptual model. It specifies how the interplay of diagnostic and interactive controls, mediated by information mechanisms and moderated by organizational culture, jointly produces balanced performance outcomes. The framework positions hybrid control systems as performance drivers, with organizational culture moderating the alignment between control strategies and outcomes. The model positions the hybrid control systems as the drivers of performance and the organization culture as the medium between the control strategy and performance. It offers a unified and testable framework that integrates often-separated fields of management control and strategic innovation. This framework outlines what hybrid control systems are and how information mechanisms and organizational culture mediate and moderate them, providing a clear direction for research.

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1. INTRODUCTION

In an era of rapid technological and market change, organizations face a critical paradox: they must operate efficiently to remain competitive today while simultaneously innovating to ensure their relevance tomorrow. This dual imperative, known as organizational adaptability, requires a delicate balance of stability and flexibility. Management control systems (MCS), traditionally designed to enforce order, minimize risk, and ensure efficiency, are often viewed as antithetical to the creative and emergent processes of innovation.

A significant body of literature has explored diverse types of control, most notably Robert Simons' four levers of control (1995) (diagnostic, interactive, boundary, and beliefs). While these typologies are widely recognized, a persistent gap remains between the theoretical understanding of control and its effective implementation in real-world contexts that demand both efficiency and innovation. Simon's (1995) framework suffers from some vagueness and inconsistency in the concepts, making it less useful, which reduces their practical usefulness and clarity (Malmi & Brown, 2008). A few researchers posit that it is challenging to maintain the proper balance between the four control levers, which makes it difficult to develop efficient control systems (Bisbe & Otley, 2004). Sometimes, it also overlooks the importance of informal and social controls in favour of formal controls, limiting its applicability to smaller entities.

Ambitious strategic goals are often hindered by control systems that are either too rigid or too loose, creating a persistent disconnect between strategic intent and day-to-day practice. The proposed framework positions management control as a critical driver of organizational adaptability, bridging the gap between traditional MCS design and modern strategic challenges.

Therefore, this paper addresses a critical gap by proposing a comprehensive conceptual framework. To develop this framework, it is necessary to synthesize existing scholarship and define the key components that inform our model. By doing so, we provide a solid foundation for guiding the effective design of management control systems and for evaluating progress toward achieving

balanced strategic outcomes in complex organizations. The framework systematically connects control strategies, information mechanisms, and institutional conditions based on existing research. Furthermore, by linking clearly defined control types with enabling information mechanisms and a supportive organizational culture, the framework furnishes actionable guidance for managers, consultants, and policymakers in diverse organizational settings.

The rest of the paper is divided into six sections. Section two delves into the literature review relevant to the contexts of the paper. Section three discusses the methodology used in this paper. Section four provides the proposed framework and its various components, duly supported by literature. Section five provides a robust discussion and the implications of the proposed framework. The last section presents concluding remarks, directions for future research, and limitations of the study.

2. LITERATURE REVIEW

To build a robust conceptual framework, we must first synthesize the key theoretical and practical components that inform our model. This section reviews four distinct, yet interconnected, streams of literature that provide the foundation for our framework.

2.1. The Foundations of Management Control Systems

Management control systems are the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities (Simons, 1995, p.5). Pioneering work by Anthony (1965) classified controls by purpose (e.g., strategic planning, management control, task control). More recently, Simons (1995) introduced his influential four levers of control framework:

Diagnostic Control Systems: These are the traditional feedback-based systems (e.g., budgets, variance analysis, performance metrics) used to monitor outcomes and ensure goals are met efficiently (e.g., Hofmann, Wald & Gleich, 2012; Joshi & Abdulla, 1996).

Interactive Control Systems: These are forward-looking, dialogue-based systems (e.g., strategic forums, real-time dashboards) that foster dialogue and attention to emerging opportunities and threats (e.g., Eker & Eker, 2016).

Boundary Systems: These define the rules and risks that employees must avoid.

Belief Systems: These articulate the core values and mission of the organization. While all four are important, diagnostic and interactive controls are central to the dynamic tension between exploitation and exploration. Recent research extends these concepts into the digital age, exploring how data analytics and real-time dashboards enable more agile diagnostic control (Le et al., 2023), and how collaborative software can facilitate interactive processes across a distributed workforce (Paszkievicz & Cellary, 2012). Herath (2007) emphasizes that management control systems play a crucial role in aligning organizational objectives with operational outcomes, thereby supporting effective decision-making and strategic coherence. According to Chenhall (2003), effective management control systems are dependent on the structure, strategy and environment of the organization and there is an underlying emphasis on the organization of control mechanisms to fit the environment and conditions. The effective interplay between these formal levers is increasingly recognized as a source of competitive advantage (Simons, 2019).

2.2. Organizational Adaptability and Strategic Performance

Organizational adaptability is the capacity of a firm to engage in both exploration (innovation and adaptability) and exploitation (efficiency and refinement) at the same time (March, 1991). While exploitation is usually supported by formal, diagnostic controls, exploration depends on soft interactive controls. Constructing a control system that can adequately support both kinds of activities is a challenging task (Tushman & O'Reilly, 1996).

Transitional capacity is considered one of the important dynamic capabilities for long-term organizational survival under turbulent environments (Gibson & Birkinshaw, 2004). Research has addressed how various types of this flexibility - enacted in structural form (e.g., having separate lines of responsibility for exploration and exploitation) or in contextual form (e.g., permitting employees to spend time on both activities) can be facilitated through suitable management control systems. Herath (2007) suggested a framework to better understand the multifaceted role of control in organizations, and Jansen et al. (2006) identified effective management control as an important prerequisite for contextual adaptability that allows managers to align competing interests.

From a contingency perspective, Chenhall (2003) argues that the best management control systems will become effective when the control system is tailored to the organizational environment, and he emphasizes the structural, strategic, and environmental factors in the design and implementation of control systems.

2.3. The Role of Organizational Culture and Trust

Even the most developed control systems are doomed to failure without the relevant organizational background. Culture, which can be referred to as the shared values, beliefs, and norms that shape the way individuals act, is a strong informal controlling mechanism in the organization (Ouchi, 1980). Interactive controls are impossible without the establishment of a culture of trust and psychological safety because it promotes open communication and mitigate the fear of risk-taking (Edmondson, 1999). Herath (2007) argues that informal management controls, such as organizational culture and interpersonal relationships, are key drivers of organizational adaptability, enabling firms to respond effectively to dynamic environments. Recent studies are looking at the need for a culture of trust which needs to be implemented before any interactive controls, arguing that without a set forth the employees will not trust the system since they will not want to express their new ideas nor will they be brave to question the underlying premise (Mundy, 2010). Hardcore performance orientation, on the other hand, may reduce the attempt to introduce flexible control as it inculcates the idea of the fear of failure (Flamholtz & Randle, 2011). This is important in the fact that culture is not an inert background but a constructive intervener in the functioning of our control system.

2.4. The Mediating Role of Information Mechanisms

Contemporary organizations are information-oriented, and power is information-oriented. Data flow is improved through such information vehicles as collaborative planning platforms and digital communications tools, and real-time performance dashboards. They can bridge the gap between the performance and control systems since they enable the managers to diagnose the issues at a rapid pace and in a manner that they can discuss the opportunities in a more interactive manner (Malmi & Brown, 2008). These methods must be highly effective and transparent to make a hybrid control system effective. The

literature review of digital technologies has demonstrated the potential of data analytics in terms of providing more timely and granular diagnostic data and the possibility of reducing silos through more effectively coordinated solutions based on cloud-based collaboration (Ens et al., 2023). These mechanisms not only pass information but also determine how the information would be applied, hence the implications that would follow to the cognition and behaviour of the managers (Bhimani & Willcocks, 2014).

3. RESEARCH METHODOLOGY

This study is based on a conceptual and discursive framework, and the research is based on the synthesis of theoretical and practical knowledge and not the generation of new empirical information. This will help to first compare and synthesize the existing disparate strands of literature via management control, strategic management and organizational behaviour and second, generate a comprehensive and testable management control framework that can guide future studies as well as applications. This methodology will offer the possibility of identifying points of strength, congruency, and weaknesses in the current body of knowledge, which can be considered as the structured framework of building upon which future empirical research can be conducted. Finally, this methodology is of great importance to make sure that the defined framework can be well-grounded on the existing theory and practice, to present a unified picture to choose the appropriate way to research the matter further and introduce effective strategies in the field.

The approach that we applied is based on an in-depth review of four different constellations of scientific literature that are related, yet separate:

- **Management Control Theory:** We discuss the basics of control types to see how they have traditionally been used and how they may be used in a hybrid approach, specifically to the levers as presented by Simons (1995).
- **Strategic Management:** We conceptualize the notion of organizational adaptability to define the strategic problem that control systems had to overcome.
- **Organizational Behaviour:** We analyze the literature on organizational culture and the significance of organizational culture as a mediating variable of the formal system of control.

- Information Technology:** The information technology role is also considered by us regarding the mediation of information flow and the potential of diagnostic and interactive control.

We plan to provide a model through the integration of these streams, with well-defined constructions, mutually specificizing processes and propositions that the research would be able to test empirically.

4. THE CONCEPTUAL FRAMEWORK

This section presents the core of the paper: a new conceptual framework that integrates formal and informal controls, information mechanisms, and organizational culture to operationalize organizational adaptability. Management control systems serve as a crucial mechanism for aligning managerial behaviour with organizational objectives through a combination of formal and informal controls (Strauss & Zecher, 2013, p. 234). The framework addresses gaps identified in the literature by systematically linking control strategies, contextual factors, and performance outcomes.

Table 1: Conceptual Framework: Variables and Relationships

<i>Variable Type</i>	<i>Construct</i>	<i>Definition</i>	<i>Relationship(s)</i>
Independent Variable	Hybrid Control Systems	The combination of formal (diagnostic) and informal (interactive) control mechanisms.	Positively impacts Organizational Performance. Mediated by Information Mechanisms.
Dependent Variable	Organizational Performance	The outcomes reflect the achievement of both efficiency and innovation goals.	The primary outcome of the framework.
Mediating Variable	Information Mechanisms	The processes and tools (e.g., dashboards, collaboration platforms) that facilitate the flow of performance data.	Explains how Hybrid Control Systems translate into performance outcomes.
Moderating Variable	Organizational Culture	The shared values, beliefs, and norms that shape employee behaviour and attitudes toward control.	Influences the strength and direction of the relationship between Hybrid Control Systems and Organizational Performance.
Contextual Variable	Strategic Imperatives	The organizational needs to balance the pursuit of efficiency and innovation for long-term survival.	The driving force or problem that the entire framework is designed to address.

Table 1 outlines a conceptual framework that examines the factors influencing organizational performance. The central relationship of the model posits that Hybrid Control Systems, defined as the combination of formal and informal control mechanisms, positively impact Organizational Performance, which is measured by the achievement of both efficiency and innovation goals (e.g., Simons, 1995; Cardinal et al., 2010).

The framework further introduces two key layers of influence. Information Mechanisms, such as dashboards and collaboration platforms, are identified as a mediating variable that explains how hybrid control systems lead to performance outcomes by facilitating the flow of data. Additionally, Organizational Culture acts as a moderating variable, influencing the strength and direction of the relationship between hybrid control systems and performance. The entire framework is situated within the context of Strategic Imperatives, which represent the underlying organizational need to balance efficiency and innovation for long-term success.

4.1. Core Constructs

The framework is built upon five key constructs, which are presented as a causal chain. Each construct is defined to provide clarity for empirical testing and is grounded in existing literature.

Table 2: Core Constructs

<i>Construct</i>	<i>Definition</i>	<i>Literature Support</i>
C1.Strategic Imperatives	The need to balance efficiency and innovation to achieve long-term performance.	March 1991; Tushman & O'Reilly, 1996; Le et al., 2023.
C2.Hybrid Control Systems	The combination of formal (diagnostic) and informal (interactive) control mechanisms.	Simons, 1995; Malmi & Brown, 2008; Frae et al., 2023.
C3.Organizational Culture	The shared values, beliefs, and norms that shape employee behaviour and attitudes toward control.	Ouchi, 1980; Flamholtz & Randle, 2011; Njoroge, Bula, & Wanyoike., 2020.
C4.Information Mechanisms	The formal and informal processes and tools that facilitate the flow and use of performance-related information.	Simons, 1995; Malmi & Brown, 2008; Hoai & Nguyen, 2022.
C5.Organizational Performance	The outcomes reflect the achievement of both efficiency and innovation goals.	Simons, 1995; March, 1991

Table 2 defines the five core constructs of the framework by separately but interdependently defining each with definitions and supporting literature that

depict how strategic imperatives, control systems, culture, and information mechanisms interactively affect organizational performance.

4.2. Model Logic and Propositions

This section will be rooted in the theoretical background of the framework to make a few propositions that can be evaluated in future empirical studies that would be implemented to test the relationships among the constructions. The model can be described by an apparent line of cause and effect in which the performance drivers would be hybrid control systems (C2), the performance of which is conditional on its riverbed to strategic imperatives (C1). Information mechanisms (C4) mediate this mediation process, which in turn explains how the control strategies are converted to performance outcomes. More importantly, the organizational culture (C3) is the mediator of this process that determines the environment within which successful implementation can be facilitated. Lastly, it is the combination of these variables in a balanced form that will lead to balanced organizational performance (C5). In view of this reasoning, the framework offers three testable propositions:

Proposition 1: The implementation of a balanced and hybrid control system (C2) implementation will have a positive effect on the organizational performance (C5) which will lead to an increase in the efficiency rates and innovation rates.

Proposition 2: There is a positive correlation between the following variables: organizational performance (C5) and information mechanisms (C4) and on the other hand there is a positive correlation between information mechanisms (C4) and hybrid control systems (C2).

Proposition 3: Strong adaptive organizational culture (C3) will contribute positively as moderator variable between organizational performance (C5) and control system (C2): hybrid control system.

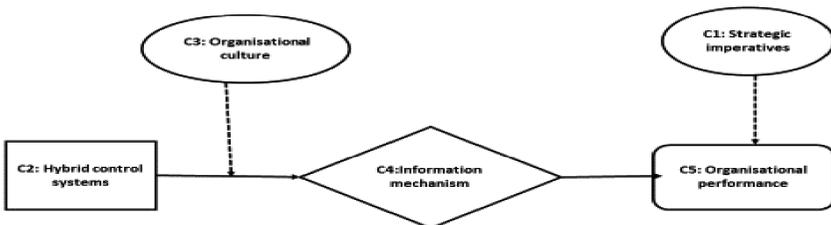


Figure 1: A Conceptual Framework for Organizational Performance

(Source: Authors developed it)

The framework, as shown graphically in Figure 1, illustrates the effect of Hybrid Control Systems (independent variable) on the Organizational Performance (dependent variable).

Contextual Factor: The model hinges on C1: Strategic Imperatives, since it was brought up as a factor in developing the entire model.

Direct Relationship: The relationship between C2: Hybrid Control Systems and C5: Organizational Performance is directly positive and causally related.

Mediating Effect: According to the diagram, C4: Information Mechanisms is a mediating variable. This implies that the impact of Hybrid Control Systems on Organizational Performance is positive and is transmitted through Information Mechanisms through which data flows.

C3: Organizational Culture is a moderating variable. It is shown in the diagram by a dashed line, which crosses the arrow between Hybrid Control Systems and Organizational Performance. This indicates that organizational culture has an impact on the power and orientation of the relationship between these two variables.

5. DISCUSSION AND IMPLICATIONS

The interwoven model and propositions are also capable of lively enlivening the theoretical and practical implications on organizations.

5.1. Discussion

The theoretical framework that is developed in this paper is added to the body of knowledge on the ways that the organization may develop management control systems that can achieve the challenging aim of adaptability. This framework facilitates the easy inclusion of the multi-layered processes underlying the notion of balanced performance and its control by involving control types (diagnostic and interactive), information mechanisms and organizational culture. The propositions formulated in Section 4 emphasize the fact that the control strategies are inadequate. Efficient execution of MCS must be compatible with organizational culture and strong information systems, which mediate and moderate the effect of control on performance.

As an illustration, a technology company is producing new software. Key performance indicators (KPIs) (such as weekly user engagement statistics

and bug reports) would be incorporated into a diagnostic control system and reviewed traditionally in the form of feedback to guarantee the achievement of quality and efficiency criteria by the product. At the same time, an interactive control mechanism would assume the cross-functional team, where weekly sprint review meetings would be held, where managers openly discuss user feedback and new trends in the market. In this sense, KPI data indicating diagnostic control becomes an object of discussion, debate, and active search for new possibilities. It is a type of hybrid control system because it integrates performance monitoring and strategic conversation with the assistance of the same information.

5.2. Implications

Theoretical Contribution: What this framework can, and does, is that theories of control, strategy, and culture are merged as separate entities. It presents a less self-evident view of how these factors interact with one another in shaping the results of the organization. The researcher of this work may believe that the most appropriate fit model of management control and strategy is the one that may be provided through empirical research.

Implications for Future Research: One could argue that the propositions are a good suggestion for further study. While qualitative methods, like a case study, might help describe the processes, quantitative methods, like structural equation modelling, would be advantageous because they enable the researcher to assess correlations and moderators. As an example, a researcher can develop a survey tool as multi-item scales in learning how diagnostic and interactive controls work, the richness of the information mechanism and organization culture properties and performance, and the outcomes of efficiency and innovation.

Practical Implications

Also, the suggested framework offers an efficient and objective roadmap to managers and leaders because it illustrates the process of implementing organizational adaptability. One of the greatest sensitivities of the practitioners is that interactive controls are and should be considered as an equal and strategic partner with conventional diagnostic mechanisms. The model also aids in emphasizing the integration of formal and informal control systems. As an example, performance cannot be monitored just with the help of a weekly

sales report, but rather as the restart of a debate with colleagues to discover new opportunities. It is an initiative and not an adverse change strategy. In addition, the framework demonstrates the degree to which information mechanisms are crucially required not only as information gathering mechanisms, but also as channels through which a hybrid control system is and should be executed.

Social Implications

The social implications of the framework outside the organizational gains are that the framework uses the vital role of having organizational culture. The article states that interactive controls will not be effective unless a culture of trust and psychological safety is established, and that companies will be forced to care about the welfare and involvement of their workforce. This can establish an improved working environment in which these workers are convinced that they can afford to be innovative and can be able to offer innovative ideas without any fear of any form of retribution. The adaptability of the framework in macroeconomics is such that the business operated within the umbrella is healthy and more resilient to economic shocks, thereby making the economy more productive and financially stable. A shift between a more top-down style of control to a more humanistic and collaborative style of control can result in a more inclusive and dynamic business environment.

Policy Implications: The results can be used to guide best practices in organizational structure and corporate governance, allowing businesses to be set up to build more robust and flexible structures. In a highly volatile environment that demands constant changes, the framework can be used to assist corporate boards and top management in assessing whether the control systems are in line with their strategic intent.

When combined, these suggestions point to the potential for a revolutionary shift using the integrated model as a springboard to turn management control from a tumultuous limitation into a strategic capability.

6. CONCLUSION, DIRECTIONS FOR FUTURE RESEARCH, AND LIMITATIONS

6.1. Concluding Remarks

This paper has proposed a refined conceptual framework that re-envision management control as a dynamic and integrated system for achieving

organizational adaptability. By systematically linking hybrid control systems, information mechanisms, and organizational culture, the framework provides a holistic view of how firms can simultaneously foster efficiency and innovation. It moves beyond the traditional view of control as a static, rigid mechanism and positions it as a strategic lever for navigating a complex and uncertain business environment.

The testable propositions laid out in this paper offer a clear roadmap for future research, while the practical implications provide actionable guidance for managers seeking to design and implement effective control systems. Our framework highlights that success in today's business landscape is not about choosing between control and flexibility, but about mastering the art of integrating both to create a resilient and adaptive organization. This balanced approach to management control is essential for ensuring both short-term performance and long-term viability in a rapidly changing global economy.

6.2. Directions for Future Research

Since the framework is a conceptual paper, its main contribution consists of synthesizing existing literature and testable relationships. Validating these claims empirically is the next logical step. Several approaches can be used in future studies to assess the model:

Quantitative Studies: Data on the application of interactive and diagnostic controls, information mechanisms, organizational culture, and performance outcomes could be gathered through a comprehensive survey of managers and staff. This data could then be analyzed using structural equation modelling to evaluate the proposed relationships, mediations, and moderations.

Qualitative Case Studies: In-depth case studies of a few firms with varying levels of adaptability would provide a richer understanding of how these variables interact in practice. By interviewing managers and observing work processes, researchers could uncover the specific ways in which culture and information systems enable or hinder the effectiveness of a hybrid control system.

Longitudinal Studies: A longitudinal study could track the evolution of control systems, culture, and performance over time within a set of organizations. This would provide valuable insights into the dynamic nature of these relationships and help to establish causality more robustly.

6.3. Limitations

The primary limitation of this paper is its conceptual nature, which relies on existing theory without providing new empirical evidence. The model is also simplified, and future research should consider other potential moderators or mediators, such as leadership style or organizational size. A significant challenge for future research is the difficulty in accurately measuring variables like organizational culture and interactive control. These are inherently subjective and tied to qualitative observations rather than quantitative metrics. To address this, researchers can use a mixed-methods approach.

For quantitative studies, future researchers can adapt established scales, such as the Organizational Culture Assessment Instrument (OCAI) or similar multi-item scales, to measure the degree of trust and psychological safety. For interactive control, survey questions can measure the frequency and quality of dialogue-based meetings (e.g., Our firm's senior managers regularly engage in face-to-face discussions to challenge the underlying assumptions of our strategy).

For a richer understanding, qualitative case studies are recommended. These can involve in-depth interviews with managers and employees, observation of key meetings, and analysis of internal documents to capture the subtle ways that culture and information systems enable or hinder the effectiveness of a hybrid control system. By combining these approaches, future research can develop robust and reliable measurement tools to capture these nuanced variables and empirically validate the framework.

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Conflict of Interest

There is no conflict of interest involved in the publication of this article.

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