

A Critical Re-evaluation of Decision-Making Paradigms in Complex Adaptive Systems Management

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Abstract. In contemporary management science, the increasing complexity of adaptive systems necessitates a paradigm shift in decision-making frameworks. This study critically examines the limitations of traditional strategic approaches, such as rational choice theory, in addressing the dynamic interdependencies characteristic of modern organizations. Employing an interdisciplinary methodology that integrates insights from systems theory and behavioral economics, we propose a novel decision-making model tailored for complex adaptive environments. Through a case study analysis, we illustrate the practical implications of our model, highlighting its capacity to enhance organizational resilience and adaptability. Our findings suggest that embracing a more fluid and iterative decision-making process can significantly improve management practices. This research contributes to the ongoing discourse in management science by challenging entrenched paradigms and offering actionable insights for practitioners.

Keywords: Complex Adaptive Systems, Decision-Making Paradigms, Management Practices, Organizational Resilience, Systems Theory, Behavioral Economics, Strategic Decision-Making

Introduction

The landscape of modern management science is increasingly characterized by complex adaptive systems where traditional decision-making paradigms often prove inadequate. As organizations navigate through volatility, uncertainty, complexity, and ambiguity (VUCA), the necessity for a critical re-evaluation of these paradigms becomes paramount. Current global challenges, including rapid technological advancements, socio-economic disruptions, and environmental crises, underscore the relevance of this inquiry. For instance, the COVID-19 pandemic has revealed the fragility of established management frameworks that fail to account for systemic interdependencies and emergent behaviors. In

light of these challenges, this paper aims to redefine decision-making processes within management by proposing a model that integrates principles from systems thinking and behavioral insights. This approach acknowledges that managerial decisions are not made in isolation but are instead influenced by a multitude of interacting agents and external factors, creating a need for a more nuanced understanding of strategic decision-making. To achieve this, we first delve into the historical context of decision-making theories, exploring their evolution and the contexts in which they have been applied. Secondly, we identify the limitations of conventional paradigms, particularly their reliance on linear and deterministic models that overlook the complexities inherent in adaptive systems. Following this critique, we introduce our proposed model, which advocates for a more iterative and adaptive approach to decision-making, emphasizing flexibility and responsiveness. Through a detailed case study, we illustrate the application of this model in real-world organizational scenarios, demonstrating its effectiveness in fostering resilience and adaptability amidst change. We conclude by discussing the implications of our findings for both scholars and practitioners in management science. This paper serves as a call to action for researchers to further explore these paradigms and for practitioners to embrace more innovative decision-making strategies that reflect the complexities of today's management environments.

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