



Professional Round Table

Applied Systemic Management in the AI Era: Navigating Complexity, Adaptation and Responsible Transformation



Mr Dimitrios Varsos, MSc

MSI Hellas Consulting Group, Irakleous 2, GR-11743, Athens, Greece
Department of Informatics, University of Piraeus, Piraeus, Greece
CSAP, HSSS

In an interconnected environment characterized by uncertainty, accelerating technological change, and increasing organizational interdependence, management requires approaches capable of addressing complexity beyond the limits of traditional reductionist analysis. Artificial Intelligence (AI) intensifies this challenge by altering organizational structures, decision processes, information flows, roles, and relationships between people and technology. Applied Systemic Management provides a framework for understanding organizations as dynamic socio-technical systems whose behavior emerges from the interaction of their components rather than from the properties of individual elements considered in isolation.

A systemic perspective shifts managerial attention from individual functions and technologies to relationships, system boundaries, feedback structures, delays, interdependencies, and emergent behavior. Organizational performance is therefore understood not simply as the sum of local efficiencies, but as the outcome of interactions among people, processes, technologies, governance mechanisms, and the environment in which the organization pursues its goals. This is particularly important because interventions designed to optimize one subsystem may generate unintended consequences elsewhere. Applied Systemic Management consequently emphasizes the need to examine the organization as a whole, identify relevant system boundaries, understand patterns of causality and feedback, and maintain alignment between operational activities and strategic purpose.

The AI era also introduces a significant challenge of variety. As technological systems become increasingly autonomous, probabilistic, interconnected, and adaptive, the environmental and operational variety confronting organizations may exceed the regulatory variety available within existing governance and decision structures. From a systemic perspective, effective management therefore requires sufficient regulatory capacity, appropriate information flows, feedback mechanisms, and adaptive responses. Concepts such as requisite variety, homeostasis, recursion, learning, and viability become increasingly relevant to the design of organizations capable of responding to rapidly changing environments without losing coherence or strategic direction.

These principles are particularly valuable when addressing complex issues such as AI governance, digital transformation, organizational redesign, decision accountability, cybersecurity, workforce adaptation, and responsible data use. Such challenges cannot be treated solely as technological problems because they involve multiple interacting stakeholders, competing objectives, institutional constraints, and evolving environmental conditions. Systemic approaches enable managers to explore these interactions, identify reinforcing and balancing feedback mechanisms, anticipate unintended consequences, and design interventions that can evolve through continuous monitoring and learning.

Applied Systemic Management, therefore, positions AI not simply as a technological tool, but as a component of a wider organizational system that must be continuously designed, governed, monitored, and adapted. By integrating systemic principles with emerging technological capabilities, organizations can strengthen their capacity for learning, adaptation, responsible decision-making, and long-term viability. In this way, systems thinking provides not only a holistic perspective for understanding the AI-enabled organization, but also a practical foundation for managing transformation under conditions of complexity and uncertainty.