Chapter 5
Hyper-Contextual Strategic Cognitive Restructurings Based on Advanced Analytics and Comprehensive Organizational Culture

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ABSTRACT

This study examines how hyper-contextual cognitive restructurings that combine advanced analytics and comprehensive organizational culture generate sustainable competitive advantages in volatile environments. Based on the review of nine theoretical frameworks it is argued that digital absorptive capacity, configurational sensing and algorithmic resilience only reach their full potential when they are inserted into adaptive sociotechnical systems that favor semantic centrality, ethical-by-design governance and collective psychological capital. The paper analyzes examples of data mesh, federated learning, digital twins and traceability blockchains, showing that technology acts as a conversational device that redistributes cognition, legitimizes new forms of cooperation and shifts trust from the corporate narrative to algorithmic verifiability.

INTRODUCTION

The acceleration of technological disruption has made data the basic unit of strategy, but the benefits of advanced analytics only emerge when algorithmic infrastructure is intertwined with cultural narratives capable of giving it shared meaning. The early literature on big data already warned that the real revolution lay not in computing power but in the ability of organizations to transform torrents of information into actionable knowledge backed by a culture that legitimizes experimentation and transparency (McAfee, Brynjolfsson, Davenport, Patil, & Barton, 2012). Years later, in a study on digital transformation, it was emphasized that true competitive advantage comes from configuring cognitive frameworks that coincide with business objectives, information and shared values, which are simply taken into technological platforms (Kane, Palmer, Phillips, Kiron & Buckley 2015).

On this basis, the present work starts with the premise that hypercontextual cognitive restructures are the surest way to achieve sustainable advantages in volatile and unpredictable contexts. Organizations leading this transition have an absorbent digital capacity, capable of collecting and integrating multimodal signals in real time, power models with latent or generative variables to reduce strategic uncertainty (Ellström et al., 2012).

Sometimes, the promise of anticipating disruptions comes up against the fragility of algorithms, which are subject to conceptual drifts and training biases. In order to detect these deviations, it is necessary to have statistical sensors and retraining playbooks. But it is also necessary to have a cultural disposition to recognize error as a source of learning; without it, alarms are turned off or eliminated by cognitive dissonance (Gama et al., 2001). In the face of risk, algorithmic governance frame-