

Chapter 7

Systemic Paradoxes of Organizational Change: Implementing Advanced Manufacturing Technology

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ABSTRACT

This chapter explores systemic challenges surrounding a highly disruptive type of organizational change—the implementation of advanced manufacturing technology (AMT). To unpack the intricate, multi-layered systems surroundings AMT implementation, the author applies an inductive method that relies on multiple paradigm lenses to highlight varied elements and contrasting understandings of the change process. Using Burrell & Morgan's (1979) typology, she constructs four accounts of AMT implementation. These accounts share a theme of paradox, yet each also accentuate different tensions and vicious cycles. To accommodate disparate paradigm insights, the proposed metaframework offers a more holistic, systemic view, depicting change as a multidimensional cycle swirling around cognitive, action and institutional paradoxes. The concluding discussion addresses implications of the metaframework for managing change paradoxes and future research.

INTRODUCTION

Plus ça change, plus c'est la même chose. (The more things change, the more they stay the same)

This succinct French proverb expresses the paradoxical relationship between stability and change. Organizational scholars increasingly stress the need to explore such paradoxes, encouraging theories of

organizational change to address tensions between order, efficiency and control, and disorder, innovation and flexibility (e.g., Lewis, 2000; Lüscher & Lewis, 2008). Systems theory may enable rich depictions of such intricacy and its dynamics. Masuch (1985), for instance, called for studies of vicious cycles accompanying organizational change. He defined vicious cycles as reinforcing patterns that foster counter-productive results, such as organizational development attempts that reproduce the status quo. According to Davis, Maranville & Obloj

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(1997), studies increasingly note paradoxes of change, but few delve deeper into these organizational struggles.

Rapid technological changes have proven particularly challenging. Advanced manufacturing technology (AMT)—flexible manufacturing systems and programmable machinery—provides a case in point. The period from the late 1970s through mid-1980s saw an intense influx of efforts to integrate AMT within innovative social and technical configurations. Yet organizations rarely achieved the acclaimed benefits of AMT, including greater efficiency and quality, employee empowerment and production flexibility (Gupta, Lewis, & Boyer, 2007). Computerization typically marked a drastic shift from previous mechanized machinery, requiring new understandings of technology, work and organizational roles. Rather than foster dramatic changes, implementation efforts often intensified the use of extant mindsets and routines, triggering tensions and vicious cycles (Pichault, 1995).

To comprehend challenges of AMT implementation and other disruptive changes, researchers have veered increasingly from the functionalist mainstream, applying more critical and interpretive paradigms. Paradigms denote cohesive sets of assumptions (Kuhn, 1970) that help orient researchers relative to varied theoretical views and construct distinct explanations of phenomena. As paradigms multiply, studies may contribute diverse insights, which extend understandings of organizational change paradoxes. Yet the pervasive “paradigm mentality” stresses incommensurability, resulting in interwoven systems of theory often deemed tenuous and paradoxical themselves.

According to Van de Ven & Poole (1995), the rising disparity of organizational change theories fueled a compartmentalization of perspectives—isolated modes of inquiry incapable of enriching each other. Similarly, Quinn et al. (1994, p. 109) criticized extant theories as oversimplified and narrow: “Researchers tend to seek new knowledge

more often through differentiation within perspectives than they do by integrating across perspectives.” They propose that paradox and plurality become central to change theories. Similar calls are heard in technology literature as studies conducted within the confines of a single paradigm may mask the intricacy of AMT implementation (e.g., Scarbrough & Corbett, 1992; Thomas, 1994). Comprehending this disruptive change may require cultivating diverse paradigm insights.

This study examines paradoxes of organizational change from multiple perspectives. The result enables insights into the systems influencing AMT implementation and the systems affecting the development of related theory. I first discuss paradoxes and the theory-building strategy that aided my exploration. The strategy—metatriangulation (Lewis & Grimes, 1999)—entailed using paradigm lenses to construct alternative accounts of AMT implementation. The second section summarizes these accounts, which highlight varied vicious cycles during the change process. Third, I use paradox literature to build a metaframework, depicting change as a multidimensional cycle, swirling around cognitive, action and institutional paradoxes. Paradigm lenses detail each paradox, revealing complex, systemic tensions between stability and change. The conclusion addresses implications for managing change paradoxes and future research.

SYSTEMIC PARADOXES: THE ROLE OF MULTIPLE PARADIGMS

In more recent years, organizational scholars have pondered the systemic nature of paradox and related tensions and vicious cycles (e.g., Argyris, 1993; Luscher, Lewis & Ingram, 2006; Sundaramurthy & Lewis, 2003; Westenholz, 1993). According to Lewis (2000), paradox denotes contradictory elements that are interwoven and present simultaneously. Yet paradoxes are perceptual, arising from the human tendency to polarize phenomena into

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