

# Chapter 16

## Premises of Digital Transformation in Autopoietic Organizations: A Framework Proposal

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### ABSTRACT

*This chapter exposes how the realization of digital transformation (DT) derives from the decisional communication of rule-making “chosen” alternatives, which originate in the self-referenced informational space, according to the dual perspective of reality adopted in evolutionary economics. Based on a critical analysis of scholarly literature to identify key proposals that support the definition of DT strategies, this research establishes the relevance of the fundamental tenets of autopoiesis theory, such as operational closure, structural coupling, and languaging, in the context of digitalization, to harmonize such DT strategy proposals to the structure of the organization in terms of decision premises. The internal availability of these decision premises determines the type of digitalization potential that can be self-observed by the organization, reinterpreting the attributes of DT in a framework that recognizes the sets of DT alternatives as decision premise dichotomies, with implications for theory and practice.*

### INTRODUCTION

Information and Communication Technologies (ICT) continue to demonstrate profound and increasing effects on the economy and society, whose organizational transformative influence has led to the notion of Digital Transformation (DT). Organizational strategies and priorities guide digital transformation, which extends beyond the simple digitalization of resources, in that it is directly concerned with new value creation (Singh & Hess, 2017). DT considers the opportunities that originate in the integration of ICT into new or existing products, services, and processes, with multidimensional impacts on organiza-

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tions (Matt, Hess, & Benlian, 2015), including the potential disruption of their business models. Rogers (2016) compares the influence of digital technologies to that of the Industrial Revolution, in that this latter modified nearly every physical activity of labor, while ICT are transforming all logical processes of value creation, leading to the rewriting of business conventions.

Humans create and make use of rules in any organization and make decisions to solve their problems according to the rules they acquire (Dopfer, 2005). These rules originate in the interactions that take place in the informational space, which becomes a sort of organizational noosphere that communicates decisions for the realization of a variety of initiatives. Essentially, the implementation of a DT strategy is nothing other than the realization of self-contained rules of production, whose decisions drive the digital strategy that a given organization intends to implement, including the type of ICT and the level of disruption that can be achieved.

In addition, digital technologies define organizational coordination rules that determine the magnitude of the transformative character of the application of such technologies, whose implementation is a captive of its own organization and structure, due to DT strategic proposals that are influenced by operationally closed processes of decision making. Hence, a DT design depends on processes of self-observation that result from the interplay among the organization's constituent members, establishing the need to consider an autopoietic approach to the understanding of DT as a phenomenon originating in the recursive interaction of its own components. The tenets of autopoiesis theory explain the rule-making structure of decisions, including the communication of decision premises that can be meaningfully understood by the organizational membership. In this regard, the only DT proposals that the organization would be able to act on correspond to the alternatives that the organizational structure decides to absorb.

Some academic work has been devoted to the analysis of autopoiesis in digital product development (Aguayo, 2019; Gonzalez-Rodriguez & Kostakis, 2015; Lyon, 2005), the characteristics of autopoiesis embedded in collaborative virtual communities (Pankowska, 2008, 2015), and the impact of self-organizing teams on DT (Verhoef et al., in press). However, scholars have paid little attention to DT as a singularity that is utterly affected by autopoietic developments, because the type of DT a given organization can develop depends on self-referencing closed processes of production.

The background of this chapter introduces DT as a value-creation set of initiatives that involve strategies related to innovation embeddedness and relational influence, unravelling the awareness of what DT potentially means for the organization. The main focus of this chapter begins with a description of the conceptual model that separates reality in two different processes: informational and material, laying the ground to match this dual model with the informational dynamics that influence the self-referentiality in the organization.

Following the description of the dual model, the chapter distinguishes the tenets of autopoiesis theory that explain the coordination rule-making processes in the organization in relation to the dual model and in the context of DT. Some of these tenets include operational closure, self-referentiality and recursivity, structural coupling, languaging, and emotioning (Magalhães & Sanchez, 2010), whose conceptual embeddedness in DT phenomena allows for a better understanding of the dichotomy that exists among decision premises included in sets of DT alternatives. The subsequent section models the autopoietic structural components that occur in the aforementioned informational space, which involve decision premises that represent alternatives for the definition of organizational priorities and strategies concerning DT.

Based on the definition of critical review that Grant & Booth (2009) have proposed, an analysis of the literature was performed to trace important advice and suggestions made to organizations that intend to implement DT initiatives. Since the search was modelled after the principles of critical review, this

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