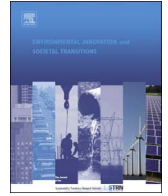


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# Navigators through the storm: A review of organization theories and the behavior of incumbent firms during transitions

Allard van Mossel<sup>a,\*</sup>, Frank J. van Rijnsoever<sup>a,b</sup>, Marko P. Hekkert<sup>a</sup><sup>a</sup> *Innovation Studies, Copernicus Institute of Sustainable Development, Utrecht University, Heidelberglaan 2, 3584 CS, Utrecht, The Netherlands*<sup>b</sup> *INGENIO (CSIC-UPV), Universitat Politècnica de València, Valencia, Spain*

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## ABSTRACT

The literature on socio-technical transitions pays increasing attention to the role of incumbent firms during transitions. These firms have been found to variably further, delay, or to ignore transitions towards a more sustainable society. Yet, it remains unclear which factors cause incumbents to display different modes of behavior during transitions, and which factors affect the transition's impact on an incumbent's survival. We engage this issue by reviewing five prominent organization theories. We first discuss how the transitions literature conceptualizes incumbent behavior and relate the open questions to major debates in the organizational literature. We systematically summarize each organization theory's assumptions and expectations about incumbent behavior, and derive typical modes of behavior. Lastly, we discuss how an incumbent's characteristics influence its behavior and survival. Overall, our review provides stable footing for researchers seeking to conscientiously judge which theories are most appropriate to understand incumbent behavior in the transition process at hand.

## 1. Introduction

Large “socio-technical transitions” are drawing increasing attention from practitioners and scholars in a variety of domains and settings. A prominent example is the current transition towards sustainability, in which the circular economy, renewable energy sources, and sustainable products are promoted. In the scientific community, theoretical work on the mechanisms by which such transitions unfold typically departs from the “Multi-Level Perspective” (MLP) (Fuenfschilling and Truffer, 2014; Markard et al., 2012).

Spurred by repeated criticisms for the relative lack of agency in the MLP (Genus and Coles, 2008; Smith et al., 2005), recent studies draw explicit attention to the role of actors in transitions. This shows that the role of incumbent firms, which the MLP sees as important in transitions (Farla et al., 2012; Geels, 2014a; Geels and Schot, 2007), is under-conceptualized.

First, transition scholars typically conceptualized incumbents as locked-in and inert, but recent empirical studies show that this is not universally the case (Wesseling et al., 2015, 2014). Incumbents often respond to a transition. Some actively resist fundamental change (Geels, 2014b), while others contribute to the transition in various ways. For example, incumbents have been found to defensively respond to transitions by forming political coalitions (Hess, 2014) and formal networks (Musiolik et al., 2012), by strategically setting technical standards (Smink et al., 2013), managing expectations for novel technologies (Bakker et al., 2012; Konrad et al., 2012), resisting political work by institutional entrepreneurs (Jolly et al., 2016), but also by developing innovative transitional technologies (Berggren et al., 2015). The behavior of incumbent firms during transitions may depend on the timing and

\* Corresponding author.

E-mail addresses: [A.vanMossel@uu.nl](mailto:A.vanMossel@uu.nl) (A. van Mossel), [F.J.vanRijnsoever@uu.nl](mailto:F.J.vanRijnsoever@uu.nl) (F.J. van Rijnsoever), [M.P.Hekkert@uu.nl](mailto:M.P.Hekkert@uu.nl) (M.P. Hekkert).<http://dx.doi.org/10.1016/j.eist.2017.07.001>

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nature of the transition (Geels and Schot, 2007), but it also depends on shared expectations about the future regime (Budde et al., 2012) and on a general dissatisfaction with the current functioning of the system (Kishna et al., 2016).

These factors, however, are a partial explanation for the observed heterogeneity in incumbent behavior. Even within a particular transition, incumbents follow different modes of behavior (Bakker et al., 2014; Karltorp and Sandén, 2012; Penna and Geels, 2012), and change between modes of behavior over time (Bakker et al., 2014; Berggren et al., 2015; Smink et al., 2013; Wesseling et al., 2015, 2014). As such, the mechanisms that guide and coordinate incumbent firms' responses to transitions are under-conceptualized (Safarzyńska et al., 2012; Vasileiadou and Safarzyńska, 2010). This makes it hard to anticipate incumbent firm behavior and to understand how transitions that struggle to advance can be “unlocked” (Smith et al., 2010). Hence, our first research question is: “*which factors govern the modes of behavior of incumbents during transitions?*”

Second, transition studies typically conceptualized incumbents as the “old guard” and new entrants as the vanguards of new technologies, suggesting that entrants are the most likely survivors of a transition (Geels, 2002). But transitions are not always detrimental to incumbent firms. Boeing, for example was a lagging firm, but came out ahead after the transition from piston-propeller aircraft to jet engines (Geels, 2006). Yet despite the societal upheaval that a transition causes when new entrants replace incumbent firms, little is known about the factors that affect the fate of incumbent firms in transitions. This motivates our second research question: “*which factors govern the survival of incumbents during transitions?*”

The behavior and survival of large firms has seen extensive investigation in the domain of organization science. The MLP's conceptualization of actors in transitions (Geels, 2011) draws strongly on theories in the organization science domain, most notably Institutional Theory (IT) (DiMaggio and Powell, 1983; Meyer and Rowan, 1977) and, to a lesser degree, Evolutionary Economics (Nelson and Winter, 1982, 1977). Yet, other research traditions that form the foundation for contemporary organizational research, such as the Behavioral Theory of the Firm (BTOF) (Cyert and March, 1963), the Resource-Based View (RBV) (Barney, 1991; Wernerfelt, 1984), Resource Dependence Theory (RDT) (Pfeffer and Salancik, 2003), and Organizational Ecology (OE) (Hannan and Freeman, 1989), have their own—very different—assumptions about firm behavior. The theories highlight different dimensions of complex organizational processes (Willmott, 1993) that can help explain different modes of behavior by incumbent firms during transitions, as well as how these affect chances of survival.

In this paper, we add alternative explanations for different modes of behavior and the survival of incumbent firms during a transition. We thereby enrich the MLP, and contribute to a better understanding of the role of incumbent firms as key agents in sustainability or other socio-technical transition processes. To this end, we first discuss incumbent firm behavior as it is typically conceptualized in the MLP and relate our two questions to two major debates in the organizational literature that motivate our choice of theories. Next, we review the various theories in the context of transitions. We derive four modes of incumbent behavior during transitions, and discuss how an incumbent's characteristics influence its behavior and survival.

## 2. Incumbent firm behavior in the Multi-Level Perspective

The MLP sees a transition as unraveling in a socio-technical system (Geels, 2005a) that consists of networks of actors that interact with artifacts, technologies, and resources under the guidance of semi-coherent sets of regulative, normative, and cognitive rules that are called regimes<sup>1</sup> (Geels, 2011; Kemp, 1994). Every group of actors that shares a set of rules is associated with a unique regime that embodies those rules. Most transition scholars refer to the total patchwork of partially overlapping regimes that guide the behavior of the actors in a socio-technical system as the “socio-technical regime.” We refer to the set of regimes that were dominant before a transition as the “incumbent socio-technical regime.”

In this conceptualization, regimes guide and coordinate how incumbent firms interact with the artifacts, technologies, and resources in the system because incumbents draw upon regime rules to set their behavior. Large incumbent firms often share rules with multiple groups and thus draw from multiple regimes. The overlap between regimes can create conflicting demands (Fuensching and Truffer, 2014; Raven, 2007a) that lead incumbent firms to deviate from the prevailing regimes. However, the repeated interaction between incumbents and the other actors in the socio-technical system typically leads to alignment between its regimes (Geels, 2006). This alignment makes the system's socio-technical regime internally consistent, which makes it difficult to change one of its regimes without requiring change in another. As a result, well-aligned regimes are continually reproduced by the groups of actors that draw upon them (Geels, 2004a). The socio-technical system then fluctuates around a stable configuration, although it may never be in equilibrium (see Geels and Schot, 2007).

The MLP also recognizes that incumbent behavior is affected by factors outside of the socio-technical system. Socio-technical systems are embedded in a “socio-technical landscape” that constitutes their wider external environment (Geels, 2004b). The landscape comprises relatively rigid societal structures and slowly progressing trends such as societal values, political ideologies, and demographic trends, but it can also represent environmental shocks such as destabilization of global currencies (Sirmon et al., 2007) or wars (Geels, 2011). The landscape is beyond the direct control of incumbent firms and forms an additional source of structuration of their behavior because it affects the viability of the various forms of behavior (Geels and Schot, 2007).

Because landscape change can relax some regime rules and tighten others, it is an important trigger for behavioral change in incumbent firms (Smith et al., 2010). When landscape change leads actors to inject deviant rules into the regime, the deviant rules loosen the alignment between the regimes that make up the wider socio-technical regime (Geels, 2002; Geels and Schot, 2007). When

<sup>1</sup> Some transition scholars also include physical components such as actors (Verbong and Geels, 2007) and technological artifacts (Smith et al., 2005) in the regime. We exclude tangible components and define a regime as a set of semi-coherent rules (Geels, 2011).

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