

# The Dynamics of Entry and Competition in Vertically Related Industries

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## • **Obiettivi;**

Within the literature on vertically related industries, studies have begun to examine the effects of specific mechanisms on the relationship between two industries across different phases of their development. One mechanism that has drawn increasing attention is firm density (Agarwal, Sarkar, & Echambadi, 2002; Hannan & Carroll, 1992).

One recent study, infact, looks at the interactions between vertically related industries by investigating the effect of increasing firm density in an upstream industry on the survival rate of firms in the related, downstream industry (de Figueiredo & Silverman, 2012): the authors find that greater density in upstream supplier firms has a positive effect on the survival rate of downstream printer firms. They suggest that increases in density produce positive effects in terms of price, variety and innovation, all of which benefit downstream buyer firms.

De Figueiredo & Silverman (2012) provide initial and insightful findings concerning the relationship between industry structure in terms of firm density in one industry and firm performance in another, related industry.

However, two further questions arise. First, it is still unclear whether the relationship between density and survival would remain the same in later periods of the industries' evolution. Theories related to both the industry life cycle and evolutionary economics suggest that industries generally pass through different periods in their evolution from birth to eventual decline and that the conditions within which firms compete in these different periods present important discontinuities.

The second question regards the role of different types of participants in the evolution of two related industries. The entry of new firms drives increases in density and, thus, product innovation and competition in vertically related industries. Scholarship suggests, however, that both the knowledge requirements and the capabilities required by firms to succeed change and develop as industries evolve. Recent scholarship also suggests that new ventures inherit different types of knowledge and capabilities according to the origins of their founders, and that such variation in inheritance affects the performance of these new ventures (Adams, Fontana, & Malerba, 2016, 2019; Agarwal & Shah, 2014). In looking at the roster of participants across vertically related industries, therefore, it is necessary to examine both the knowledge characteristics of new entrants in later periods of industry evolution, and how these characteristics might affect the interplay between density and

performance.

- **Metodologia;**

We address these two related questions by examining the relationship between firm density and the performance of new startup ventures in two vertically related industries in a period of industry evolution that follows their inception and initial phase of growth. The context of the study is the semiconductor industry (a core supplier industry) and telecommunications equipment (the downstream, buyer industry) between 1999 and 2008.

We draw on the literature on entrepreneurship to distinguish between different types of independent new ventures according to the origins of their founders. Using this framework, we analyze how density in the upstream industry affects both the entry and survival of new ventures in the downstream industry.

We begin our analysis by developing a set of predictions and testing them empirically with data collected on both industries.

Based on our empirical understanding, we then build a simulation model of entry, competition and survival in two industries to illustrate formally and test the mechanisms that are at the base of our analysis. The simulation model presented takes inspiration from the history-friendly models of industry evolution (Malerba et al., 2016) and allows us to explore the extent to which our empirical findings are due to the mechanisms proposed in our analysis.

- **Risultati;**

We find that greater firm density in the core supplier industry increases the hazard rate for all types of new, startup ventures in the downstream industry. These findings hold both for the empirical analysis and the model.

However, the results also show that startups that spinout from firms in the upstream industry (supplier industry spinouts) to enter the downstream industry are more likely to survive than other types of independent startups.

We explain our findings, which contrast somewhat from the previous study cited (de Figueredo & Silverman, 2012) by differences in the competitive context that characterize a later period of an industry's evolution.

Our model, in fact, shows that in the early period of industry evolution greater firm density in the core supplier industry decreases the hazard rate for all firms in the downstream industry.

- **Implicazioni.**

This study contributes to our understanding of the relationship between industry density and firm competition and survival along a value chain of related industries.

This work also contributes to our understanding of how the organization of industries and the boundaries of competition between vertically related industries are affected not only by

the strategies of established firms (though vertical integration, diversification or alliances) but also through the entry of new and independent startup ventures from vertically related industries.

Finally, the paper offers a methodological contribution, by applying the history-friendly approach to relevant issues in strategic management.