

ACCUMULATION MODEL PROCESSES OF HUMAN SUBORBITAL SPACE TRANSPORTATION INDUSTRY EMERGENCE

Kenneth John Davidian

ABSTRACT

To respond to the research question, “by what processes do new industries emerge?”, the author identified different models of innovation development and industry emergence. Relevant streams of literature included economics, innovation, sociology, economic sociology, and institution theory. A functional goal innovation development theory, referred to as the accumulation model, states that many organizations, from both the public- and private-sectors, collect and accumulate resources in three major social functions. Previous research defined the model state-of-the-art at a high level of abstraction, identifying the three main components (industry infrastructure elements), depicted as separate boxes with arrows between them. This research uses grounded theory extension to identify microscopic processes, delving within and between the three macroscopic infrastructure elements.

The industry context of this research was the emerging human suborbital space transportation (“space tourism”) industry. Data came from secondary sources, archival data, and primary sources. This research collected more than 8,400 pieces of secondary and archival data from news aggregator web sites, distilled them into approximately 600 significant events, and categorized them within the accumulation model framework’s three main components: Institutional Arrangements, Resource Endowments, and Proprietary Functions. Industry structure and disruptive innovation studies provided additional analytical perspectives. Primary data, collected via 40 interviews of industry members, filled in and validated data gaps. The combined analyses resulted in a deeper understanding of the industry emergence process. Observations of the sequence of events, and of linkages between events and actors, allowed the author to propose a set of processes, describing how the accumulated industry resources resulted in industry emergence. Description of these processes required modifications to the original framework. Furthermore, this research analyzed a high-profile prize event that initiated the industry emergence, to propose a supplemental set of processes, describing how prizes influence industry emergence.

The current research proposes that institutional activities contribute primarily to the accumulation of sociopolitical legitimacy, and resource endowment activities contribute primarily to cognitive legitimacy. Both forms of legitimacy are a significant moderator of interactions between the three infrastructure elements. Furthermore, prizes positively contribute to sociopolitical legitimacy, positively moderate the creation of cognitive legitimacy, and positively moderate many steps in the business development cycle. The proposed processes identify the steps of legitimacy creation and industry emergence. This research provides new insights into the industry emergence and evolution processes, for entrepreneurs, managers, policy-makers, and for developing countries on the African continent.