

Technology Strategy under Technological Convergence Phenomenon: In the Case of Printed Electronics Industry

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Abstract

The nature of competition in high-tech market has been changing drastically and incurred a phenomenon called technological convergence. However, it is difficult to find studies that examined this phenomenon in the perspective of strategic management. Therefore, this study is to identify technological innovation strategies and answer the question - "what are the key technologies in the process of technological convergence, and what types of corporations have those key technologies?" We analyzed patent citation information using network analysis and identified firm's technological positioning and its evolution under technological convergence. The empirical results showed that firms handling the 'integration technology' that controls and adjusts the characteristics of disparate technologies as well as firms with 'core functional technologies' serve critical roles throughout the complex development of technological convergence. Moreover, firms with 'core functional technology' displayed a "uni-dextrous" strategic characteristic where they demonstrated a high level of focus over specialized technology. Firms fulfilling the brokerage role display a "multi-dextrous" strategic characteristic where they have a highly diverse patent portfolio while also having a variety of technological knowledge sources. Consequently, this study contributes to our understanding of firm's strategic positioning towards 'integration' against the complex development of technological convergence.

Keywords

Industrial leadership, Network analysis, Patent citation, Printed electronics, Technological convergence

Biography

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