Patterns of Business Model Innovation in China’s Emerging Electric Vehicles: Collaborative Ecosystem Perspective

The purpose of this paper is to study the emergence of electric vehicles (EV) in China and to explore the multiple patterns of business model innovation based on collaborative ecosystem perspective for the period 1980s-2013.

As a traditional technological “follower” to European or American counterparts, China’s catching-up in emerging industries such as electric vehicles, which can be explained by the strategy of business model innovation, is of great importance both to practitioners and scholars in R&D management field.

This paper identifies four patterns of business model innovation in China’s electric vehicles based on a new typology of collaborative ecosystem, illuminates the multiple orchestration processes of business model innovation in the ecosystems, explores the governance of the collaborative ecosystem, and analyzes the mechanism why different players in the ecosystem can work together to create new business model.

Empirical studies are conducted in four Chinese cities or ecosystems: Shenzhen (Guangdong Province), Beijing, Hangzhou (Zhejiang Province) and Hefei (Anhui Province). We have focused on the multiple players in the collaborative ecosystems: Supply side (OEMs of EV, and three key component suppliers- battery, motor, electric control), Demand side (Public purchasers and private purchasers), Intermediaries (market service providers, universities/research institutions, and NGOs) and Policy-makers. Data are collected via multiple database and interviews. Network analysis and cross-cases method are adopted to illustrate the business model innovation patterns.

The main conclusions of this research are threefold: firstly, the emergence of China’s electric vehicles (EV) is mainly due to the business model innovation; secondly, the diversity of business model innovation in four Chinese EV ecosystems can be explained by the different orchestration of collaborative processes; thirdly, the dynamic availability of complementary asset in the collaborative ecosystems contributes to the success of business model innovation.

There are some theoretical implications for R&D management. Firstly, business model innovativeness in emerging economies such as China, are subject less to innovative technology, but more to demand side and general conditions. Secondly, business model innovation is a collaborative and orchestrating process from the perspective of business ecosystem theory; moreover, the creation of complementary asset lays the foundation for the collaboration. Thirdly, multiple business model innovation patterns can lead to the variety of technology and demand, which is another explanation for the emergence of dominant design in a specific emerging industry such as electric vehicles.