Technology Analysis & Strategic Management ›

Volume 31, 2019 - Issue 12

Articles

Huawei's catch-up in the global telecommunication industry: innovation capability and transition to leadership

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Pages 1395-1411 | Received 12 Jan 2018, Accepted 24 Apr 2019, Published online: 14 May 2019

Cite this article https://doi.org/10.1080/09537325.2019.1615615 Check for updates

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ABSTRACT

Using Huawei as an example, this paper analyses the catch-up process of latecomers from emerging markets during their transition towards global technological frontiers. We designed innovative indicators using USPTO patent data and used them to measure Huawei's catch-up in an established and an emerging technology field. We measure overall innovation capability (OIC) and core innovation capability (CIC), benchmarked against global forerunners, during its transition to industry leadership. Our findings indicate that Huawei built its OIC ahead of CIC. However, the effectiveness of its catch-up in CIC determined whether the latecomer firm achieved the leadership transition. Our findings make an important contribution to catch-up theory and carry significant implications for catching up firms and incumbent firms.

KEYWORDS:

Catch-up | innovation capability | telecommunication | transition to leadership | Huawei | China

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1 In 2013, Huawei overtook Ericsson to become the largest telecom manufacturer in the world, according to market research and consulting firm Infonetics Research (http://www.infonetics.com/whitepapers.asp).

2 In 2016, Huawei was ranked by Thomson Reuters among the most innovative one hundred firms in the world along with such innovative firms from advanced economies as Apple and Google. It is the only firm on this list from mainland China.

3 Huawei's Annual Report 2017, https://www-file.huawei.com/-/media/CORPORATE/PDF/annual-report/annual_report2017_en.pdf?la=en, accessed on July 9, 2018.

4 http://www.wipo.int/pressroom/en/articles/2018/article_0002.html, accessed on July 9, 2018.

5 We chose USPTO patent data for two principal reasons: first, the US is the world's most competitive telecommunication market, and, second, US patent information is one of the most comprehensive measures in innovation in the telecommunication industry (Godinho and Ferreira 2013).

6 In 2000, only one non-telecommunication related patent was filed by Huawei at USPTO.

7 Due to truncation in patent data, we were unable to collect complete patent information, especially patent citations, of the subject firms after 2012. Hence, we use 2012 as the end year in our patent data analysis.

8 In 2009, the centrality of H04W (wireless communications) was ranked # 4 in Huawei's knowledge network.

9 The results are available upon request.

10 It is worth mentioning that, as shown in Figure 3(b), Huawei achieved a breakthrough in the share of seminal patents in 2010, when our analysis of this dimension stopped. Since then the firm has made considerable progress in 4G technologies.

11 The numbers shown in these figures are the value of any specific firm divided by the group mean in any given year.

12 For example, leading business media (e.g., Forbes, CNBC and The Verge) reported that in 2017 Huawei became the second largest smartphone provider after Samsung.

Additional information

Funding

This work was supported by China Postdoctoral Science Foundation: [Grant Number 2018M633533]; National Science Foundation of China (NSFC): [Grant Number 71802157].

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