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Creative Imitation as Catch-up Strategy: A Business Model

Seung-Hyun Lee[*], Youngkwan Kwon[**], Ji Hye Lee[***], Young-Il Park[****]

Abstract Catch-up is a well-known and familiar terminology for innovation scholars in developing countries such as Taiwan, Korea and China. The strategy, however, is too difficult to perform in each industry. This study looks into a catch-up strategy that Apple and Xiaomi used and examines the results on the creative imitation of business model in the smartphone industry. It is quite surprising that even Apple is based on catch-up strategy. They wanted to catch-up Nokia. Our case study shows that these two companies quickly caught up with the leaders, and the common feature of their strategy is characterized as creative imitation of business model. Creative imitation of business model is different from creative imitation of innovation. Furthermore, this research confirms that the creative imitation of business model leads to aggressive creative innovation.

Keywords Catch-up strategy, creative imitation, innovation, business model, strategy of follower

I. Introduction

Fierce inter-firm competition and the shortening of the technology life cycle are increasing the necessity for technological innovation and the cost of innovation. In addition, many companies are adopting new business models, evolving and updating existing ones and becoming new leaders themselves (Chesbrough, 2006). Then, how can followers catch up with the leader? The literature points to the fact that laggards cannot expect to catch up successful by simple imitation. However, costly innovation is never an easy option to consider. This is especially difficult for followers in developing countries where technological innovation is difficult to realize (Na and Bae, 2009).

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[*] Korean Women's Development Institute; sweetsnow082@kwdimail.re.kr
[**] Korea Fair Trade Mediation Agency; Department of Science and Technology Policy, Hanyang University; kykwan7@snu.ac.kr
[***] Ewha Woman's University; jihye_lee@ewhain.net
[****] Corresponding author, Ewha Woman's University; yipark@ewha.ac.kr

In this context, creative imitation could be an alternative strategy (Niosi, 2012; Yu, 2000). Creative imitation adds new value to existing products and makes their positioning possible (Shenkar, 2010). And it is critical from a business strategy perspective (Milan et al., 2014; Lee and Zhou, 2012; Jin, 2009), enabling firms to gain market power and to lower the burden of innovation at the same time. As imitation and innovation have been the main themes in innovation studies, the value of creative imitation has often been ignored (Milan et al., 2014) or often regarded as a medium stage in the process of trying to catch-up (Kim, 1997). The existing literature on imitation for catching up only concentrates on product imitation (price, design and applied technology). Since 2010, some imitation related studies started to identify the imitation of the business model (Shenkar, 2010; Enkel and Grassmann, 2010; Kal and Christopher, 2012; Enkel and Mezger, 2013), arguing that the business model can be a subject relevant to imitation. Recent studies on the business model also prove that imitating a business model can create new value (Johnson, 2010; Kim and Mauborgne, 1999) and achieve high performance without the development of new technology or products (Kang, 2011).

This study puts forward the following two proposals. Firstly, followers can use creative imitation of a business model as an efficient catch-up strategy. Secondly, creative imitation of a business model comes with innovation. This study identifies these propositions by reviewing the case studies of Apple and Xiaomi. They are timely and appropriate case studies to review the evolution of a strategy according to the company's order of entry into the market.

II. Theoretical Background

1. Catch-up Using an Imitation Strategy

Imitation means copying someone else's product or following someone's product (Park, 2001). Types of imitation include counterfeit, copy, design imitation, creative application, technological improvements and application to other industries (Schnaas, 1994). Imitation is the opposite concept to innovation that stands for a new process, product, or service, or a new way of production, reception and execution (Thompson, 1965). Regarding innovation and imitation, Schumpeter said 'innovation' is the commercialization of innovation and the realistic assembly of genuine creation and development, and 'imitation' is the expansion of innovation (Kim, 1997). Most of the innovation, however, does not come with an invention, but is deeply rooted in an existing idea.

Schnaars (1994) conducted case studies regarding imitation as catch-up strategies in 28 industries and proposed three types of imitation including gaining competitive advantage over a cheap price (price-point), developing and producing an excellent product, aiming for sales (second, but better), and targeting differentiated marketing paths based on strong market share. Shankar et al. (1998) conducted a similar study insisting that there are two ways for followers to seize a leadership position: 1) by using a lower price, advertisement or retail power and 2) by copying or improving a certain part of the product to realize product innovation. From a corporation's perspective, a recent study by Ulhoi (2012) divided a corporation's market entry strategy into an innovation strategy and an imitation strategy. The study shows that the first mover uses an innovation strategy for market entry and the follower uses an imitation strategy to enter the market. Also, in the case of an imitation strategy, the company will strategically select one of four types, including replica, mimicry, analogue and emulation, according to a corporations' technology capacity and market condition.

As Korea industrialized quickly through a policy of imitation, imitation is proposed as a crucial catch-up strategy among researchers. Lee (1988) classified four types of national technology development strategy: as technological dependency (Central and South America), noninterference (Australia, Malaysia, etc.), independent development (China, India, etc.) and imitative learning (Korea, Taiwan). A study found that an imitative learning strategy produced the most successful results.

Kim (1997) is similar to Lee (1988), but it covers Korea's catch-up strategy more inclusively and combines the life cycle of technology innovation of Utterback and Abernathy to propose technology development between advanced countries and developing countries. Unlike the situation in an advanced country, technology development in developing countries (including Korea in those days) went from a period of hardship to a period of execution and then to a period of flexibility. It also followed processes of Imitation Stage, Creative Imitation Stage, and Innovation Stage. Kim (1997) states that Korean Industrialization started with simple imitation in the 1960 and 1970s, and developed through creative imitation in the1980s. Thus, creative imitation is essential in the process of ensuring a country catches up.

2. Creative Imitation as an Effective Catch-up Strategy

'Creative imitation' is a process of copying a product, while also creatively adds new value to it as an imitation strategy. Creative imitation applies to design imitation, the creative application of technology, technological advances and other industrial applications (Kim, 1997). The concept was first introduced by Levitt (1966), who states that creative imitation not only stands for a simple copy of an existing product, but also improves its current version and leads to new uses. As a corporate strategy, Drucker (1985) proposes 'Hit Them Where They Aren't,' and states that creative imitation is one measure. Drucker further asserts that creative imitation is not creating new products or services, but improving existing ones. In other words, when a company that is a follower (and not a leader) reworks a product and service and adds options, it can apply existing products with differentiated characteristics to other markets especially in developing countries in order to gain a competitive edge.

After Drucker's conceptualization of creative imitation, research stressing the importance and role of creative imitation increased. Existing research has concentrated on innovative studies and has often neglected creative imitation (Milan et al., 2014). In terms of corporate strategy, there is not enough research on creative imitation. Recent research has shown that creative imitation is important in terms of corporate strategy (Milan et al., 2014; Lee and Zhou, 2012; Shenkar, 2010; Jin, 2009). However, the research only focused on differentiated products (price, design, and applied technology), which are similar to simple imitation and limited creative imitation about product imitation. This study found that there is a lack of integrated reviews or research reviews. Therefore, this study listed creative imitation studies in a chronological order.

Overall, the definition of creative imitation is 'to creatively add new value based on imitation. Creative imitation can create a differentiated new version compared to existing ones and it is difficult to distinguish creative imitation from innovation.' In addition, creative imitation is an effective corporate strategy that can bring about the effect of innovation by reducing the risk compared to simple imitation or innovation and thus realize speedy growth. Research on creative imitation is especially popular among Chinese researchers (Yu, 2000; Jin, 2009; Lee and Zhou, 2012). This shows that China values creative imitation highly during the catch-up process.

Therefore, how can we realize creative imitation? Previous research focused on aspects of the product (design, function, and price) to realize creative imitation. However, after 2010, some imitation research mentioned the importance of 'Business Model Imitation', and included a business model as new imitation. Research commonly claim that a company's competitiveness can be improved by changing its business model through imitation and limiting other competitors' from imitating their business model (Shenkar, 2010; Enkel and Grassmann, 2010; Kal and Christopher, 2012; Enkel and Mezger, 2013). Shenkar (2010) states that recent imitation is accepted in various products, services, processes and business models. Kal and Christopher (2012) propose changing the business model in order to prevent imitation of one's own capacity.

Table 1 Overview of creative imitation studies

Author (Year)	Definition and significance of creative imitation
Levitt (1966)	Improving existing version and adopting new uses. First to introduce the concept of creative imitation.
Dracker (1985)	Making improvement by adding differentiated traits to existing product. Systemized the concept of creative imitation.
Schwarz (1994))	Creatively applying innovation from other industries. Expansion and application of innovation in cross-industry played important role in creative imitation.
Lowe (1995)	As the general social progress, innovation was made by creative imitation. However, in this process, it was scantily reviewed in innovation studies.
Kim (1997)	Purpose was to copy the product, but new function was creatively added (differentiated design, technology advance, application of other industries, creative application) and creative imitation was the main success factor of Japanese industrialization. By creative imitation, innovative products were created.
Yu (2000)	Granting differentiated value (design, function and price) to advanced product was the main factor to chase Hong Kong companies. The best strategy when market uncertainty is high.
Arnold and Bell (2001)	Developing and utilizing existing knowledge base. Differentiated from simple imitation. Became the main source of economic development. Thus, it is essential for the industrialization of developing countries and corporation's business system.
Park and Bee (2004)	Strategy that start-up companies used as local pioneers and as global followers. Strategy for the coexistence of imitation and innovation.
Valdani and Arbore (2007)	As a legal imitation, in order to enter new customer, market and sector, imitating the most innovative product in the most innovative way.
Jin (2009)	Based on imitation, adding creative value. The reason behind Japan's economic growth, and Chinese companies worked on this for the last 30 years and need to continuously line up.
Shankar (2010)	By creatively adding new value to the existing product, the strategy is to differentiate one from other products. Followers can enhance their power more significantly in the market compared to the introduction of a simple imitation product, and at the same time, they can lower the burden of innovation. It is a fairly efficient corporate strategy.
Henkel and Grossmann (2010)	Utilizing a solution that was developed by industry and then applied to different kinds of industries. Creative imitation among other industries can increase innovation and bring destructive innovation.
Lee and Zhou (2012)	The pioneer functionally improves and adds additional value. Followers have no need to engage in pure imitation, but they have a need to differentiate within creative imitation. Creative imitation can have a positive effect on a corporation's financial performance compared to pure imitation.
Milan et al. (2014)	The most complicated type of innovation that comes with imitation. Creative imitation touches innovation and it is a strategy for innovation that is just as significant. Companies need to positively use creative imitation not as a threat, but as an opportunity against innovation.

3. New Type of Creative Imitation: Creative Imitation of a Business Model

If we look into previous studies, a business model is defined in two ways. Firstly, it is defined in terms of the profit-making ability of a company that sells the product or service. In this case, the business model is defined as a logical mechanism for generating profit. Elaborating further, Linder and Cantrell (2000) define a business model as the key logic of a corporate structure to create profit. Margretta (2002) also defines it as the story that explains how corporate functions. For his part, Rappa (2001) defines the business model as business management that values sustainability that can create profit.

Secondly, it is defined as an interrelationship. A business model is defined by the interaction of the business strategy, business process and the technology that the company holds. Timmers (1998) defines a business model as a framework of product, service and information flow. Hawkins (2001) defines product and service-related cost and financial interrelationship as a business model. Osterwalder and Pigneur (2002) define the business model as a medium of business process and business strategy, and specification in terms of conceptualization and a structural level.

Thus, the latest roundup of research is that the business model is the concept that creates value and builds company's logical and systematical structure to deliver and obtain this value (Amit and Zott, 2001; George and Block, 2011; Morris et al., 2005). As such, the importance of a business model is stressed as it underlies all business activities including corporate value creation, corporate management, marketing, business development, law (intellectual property), finance, new product development and process improvement (Zott and Amit, 2010; Chesbrough and Rosenbloom, 2002; Hamel, 2000; Johnson et al., 2008; Osterwalder, 2004; Chesbrough, 2006).

However, according to recent research, more than 60% of young entrepreneurs imitate other domain projects or external business models instead of pursuing innovation. This kind of imitation of a cross-industry business model reduces the time spent on innovation and plays a role in leveraging a new business model and creating new value (Johnson, 2010; Kim and Mauborgne, 1999). In other words, the imitation of a business model can be utilized in other industry to create value (Enkel and Mezger, 2012). Nestle imitated Gillette and Hewlett Packard's business model in the form of the 'razor-blade, printer-in model' to start the coffee capsule project of Nespresso. This business model enables a close relationship with customers compared to previous coffee sales (IMD, 2003). The follower's product is based on an existing product. However, if the product creates new value through imitation of a business model, it is considered as creative imitation. This new type of creative imitation can be efficiently used to catch up. Therefore, the first proposition of this study is stated as follows.

- Proposition 1: Followers can creatively imitate a business model as an efficient catch-up strategy.

According to previous research regarding creative imitation, Kim (1997) states that there is no apparent classification between creative imitation and innovation, but creative imitation can lead to an innovative product. Enkel and Grassmann (2010) state that creative imitation across industries will enhance innovation that can be destructive. Milan et al. (2014) state that creative imitation comes with innovation. Thus, creative imitation of a business model, which is a new type of creative imitation, can be formulated through the following proposition:

- Proposition 2: Creative imitation of a business model will bring innovation.

III. Research Methodology

This study examines five followers in the smartphone market from 1996 to 2015, based on a longitudinal study as a qualitative research method. The smartphone is a cutting-edge product and the smartphone market has experienced dramatic changes. As some followers were successful in catching up with the leading company, we found that reviewing the smartphone industry is appropriate to investigate this study's propositions and to compare catch-up strategies and how these evolved in relation to the order of entry into the market.

Regarding catching up, existing studies used quantitative analysis method focusing on technology catch-up and particular products (Lee and Lim, 2001; Park and Lee, 2006). However, catching up can occur in more than one way depending on a firm's capability and market environment (Ernst, 2002). Thus, there is a limitation of quantitative analysis (Kang et al., 2012). For the research, there is no 'one-size-fits-all' approach. Thus, there is a need to adopt an appropriate research methodology considering the characteristics of the market. In particular, in the smartphone market, there are some limitations in adopting quantitative analysis.

Firstly, the established concept of the smartphone market by Apple was formed in 2007; in other words, the market is only nine years old. Thus, only a few companies have successfully caught up or achieved the results of catching up. Therefore, there is limitation to apply a meaningful quantitative analysis.

Secondly, catching up in the smartphone market cannot be assessed through a simple study of technology catch-up or a particular product. The smartphone market has flexible characteristics that change depending on the consumer's preferences, culture and environment of the market.

Thirdly, the smartphone is an intensive, cutting-edge product from various sectors. A quantitative understanding of smartphone technology together with the processor technology (CPU), audio, touch module, camera, display, user interface (UI) technology with an audible device have limitations.

Lastly, it is difficult to find innovative catch-up cases like Apple. Thus, this study will provide a deeper and richer understanding by strategically analyzing catch-up case studies in the smartphone market to fill the gap of current studies.

This study focuses on Apple and Xiaomi. These companies were chosen as two of the global top five companies (Q4, 2014) that were determined to have achieved catch-up results (Table 2).

Table 2 Worldwide smartphone sales Top 5

Company	2014Q3		2014Q4	
	Units	Market share	Units	Market share
Apple	38,187	12.7%	74,832	20.4%
Samsung	73,212	24.3%	73,032	19.9%
Lenovo	15,012	5.0%	24,300	6.6%
Huawei	15,935	5.3%	21,038	5.7%
Xiaomi	15,773	5.2%	18,582	5.1%
Others	142,892	47.5%	155,702	42.4%
Total	301,010	100.0%	367,485	100.0%

Note: units in thousands
Source: www.gartner.com

Also, Apple and Xiaomi used creative imitation as a business model for catching up. But their strategy is a little different, as summarized in Table 3. Innovation at Apple and Xiaomi is significantly different both in extent and dimension. This is explored through the case analysis.

Table 3 Firm's catch-up strategy

		Firm	
		Apple	Xiaomi
Strategic target	Product	Creative imitation	Imitation
	Business model	Creative imitation	Creative imitation
Result of the strategic		Innovation	Innovation

For this study, data were collected from theses and reports on Nokia, Apple and Xiaomi, company reports, newspaper and magazine articles and government papers from 1996 to 2014. These longitudinal materials gave useful information about the companies' catch-up strategies and performance based on their progress over time and evolution of to their catch-up strategies.

IV. Case Analysis of the Smartphone Market

A smartphone refers to portable device that combines the basic functions of a cell phone, various applications and Internet functionality, which has been used by PDAs and mobile PCs. A smartphone has a convenient and innovative UI compared to existing phones, enables Internet access via a wireless network, and adopts a standard operating system for various functions and use of the application. The existing mobile market used to be characterized by variability as the telecommunication industry experiences frequent innovation (Kim, 2010). However, after the introduction of the smartphone, the pace of market growth has been even faster and the competition among global companies has become fiercer (Kim et al., 2011). This has resulted in shorter product life cycles and increase in the cost of technology development (Chesbrough, 2006). It is expected that there are many underlying aspects affecting catch-up strategies in the smartphone market. This study aims to focus on each company's strategy rather than on a particular technology or product. The study also compares and analyzes the difference between catch-up strategies and results.

1. Catch-up Strategy of Followers

Nokia was once a leading phone company; it launched the Nokia Communicator line starting with Nokia 9000 followed by Nokia 9210 and Nokia 9500 communicator. This product was the first smartphone with innovative technology. The Nokia 9210 was a communicator model with the first color screen and open operating system, recognized as a real smartphone. The Nokia 9500 was the first camera-phone and Wi-Fi-phone. Also, Nokia was the first company to incorporate functions of SMS, email, fax and the Internet into the mobile phone.

Nokia was the first to offer a touch screen in 2000 and it launched the innovative Ericsson 380 with a Symbian function, which is fitted with its own operating system (OS). With its great hardware capacity and its own OS, Nokia became the leading company in the smartphone market (Chevallier, 2013). However, its smartphone market performance did not reflect the groundbreaking features of the phone. According to Nokia's official announcement, when Nokia 9210 was released to early adopters it did not gain popularity and Nokia change its strategy, repurposing its product for corporate use.

The Nokia 9210 is aiming at a niche market for the new technology maniac. (Money Today, 2000.11.22) Two models including the Nokia 9110 and Nokia 9210 are products targeted to business. These models offer various functions such as sending faxes, sending and receiving email, and built-in-Internet. (Digital Times, 2003. 09.15)

Apple was the first follower to chase Nokia. Established in the 1970s, Apples was the one of the major computer and IT companies; it entered the smartphone market ten years after Nokia. As Apple was not a mobile manufacturer, Apple learned about mobile-related technology swiftly as a latecomer. After combining UI technology, which was considered as a competitive advantage, and existing mobile technology, Apple launched the iPhone. In 2007, Nokia had already commercialized the iPhone's touch-screen function. In 2008, Apple launched the Apple Store, which is an apps platform. Apple altered 'the rules of the game' by establishing a new business model, which is the combination of a device and its contents in a smartphone market. However, this business model was not anything new. When Apple launched the iPod, it used a new business model, which is the combination of software (downloading music) and hardware (iPod) so that users can easily download music for a fee from the iTunes Store. Apple applied the same model to its smartphone by implementing creative imitation. At that time, Steve Jobs, the then CEO of Apple, explained that the iPhone is a device with mobile functions in addition to the iPod. "I don't want people to think the iPhone is a 'computer'. The iPhone is a reinvention of the mobile phone; it is more like the iPod than a computer." (Segye Daily, 2007.01.15)

By introducing a new business model, the iPhone gained a differentiated level of competitiveness. First, Apple built an asset centered on hardware and developed new competition through the 'destructive influence' of software that can steadily improve the product quality. This changed the rules of the game in the mobile industry and Apple reshaped the smartphone market by creating and generating new value (Kim and Jung, 2010).

After 2011, Chinese companies such as Xiaomi entered the market. Xiaomi is a start-up established in 2010. Lei June, the company founder, who used to be software developer, listed as Kingsoft. Although Xiaomi had no hardware capacity, by imitating a mobile Internet company, Xiaomi used a catch-up strategy that differed from that of Lenovo and Huawei. June studied the strategy of leading firms, such as Apple, Google and Amazon, in order to imitate their strategies. As a result, based on a 'triathlon model' that is derived from research, he used various strategies from the very early stage of the business (Huryean, 2014). The triathlon model is a combination of Apple's hardware, Google's software, Amazon's Internet and it imitates Apple's device, Android OS and Amazon's business model.

Xiaomi first released a smartphone in 2011. According to the triathlon model, the hardware had a similar design to Apple's iPhone and UI technology. Xiaomi followed existing companies by using a revised Android for OS. The Chinese company took charge of smartphone design and OS development to manufacture a product by Foxcomm and Inventec. Xiaomi pursued high specifications by adopting comparable cutting-edge technology compared to existing low-end Chinese companies.

Xiaomi was a new start-up that had no hardware technology capacity or manufacturing infrastructure. Xiaomi did not produce the component structure of the Hongmi model released in 2013.[1] In this situation, Xiaomi implemented a business model as a catch-up strategy. Lin Bin who is the co-founder of Xiaomi made the following announcement in September 2013: "Hardware is the platform to implement the service, so there is no intention to make money out of it. I want consumers of the device to use Xiaomi's service. Service is the source of Xiaomi's profit." (The Scoop, 2014.04.17.)

Xiaomi tried differentiation by adopting a content and device business model that rules the current smartphone market and by adopting a business model selling Kindles. This is an example of realizing creative imitation through the imitation of a business model. At the end, Xiaomi brought a destructive business model to the market (Park and Nam, 2014; TECH and beyond, 2014). Xiaomi adopted a new profit-pursuing measure by adopting the business model of selling Amazon's Kindle into the smartphone market and reducing the device margin by a third compared to the average smartphone. The company made a profit from selling content and accessories. According to PCWorld, the margin of the Redmi 1S is about 23%. It is a stark 70% less than the iPhone 6 (MoneyToday, 2014.11.04). In order to realize the new business model, Xiaomi adopted a pre-ordering and post-production measure. By maintaining online sales and marketing, Xiaomi pursued a differentiated catch-up strategy compared to existing Chinese smartphone companies, with a 'high spec, low price' slogan (Park and Nam, 2014; TECH and beyond, 2014).

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[1] The memory chip (ROM+RAM integrated type) and camera are from Samsung, Quad-core process chip (MT6589T) and the antenna module (MT6320GA) are from MTK and the touch module (MT5316) is from O-film (www.mi.com).

2. Result of Catch-up Strategy

After Apple introduced the iPhone as a new business model, Nokia dramatically lost its position in the market. After launching the Apple Store, Apple's market share increased from 10.8% in the first quarter to 16% in the fourth quarter in 2009. By contrast, Nokia's market share dropped to 38.2% in the fourth quarter from 41.2% in the first quarter. Regarding Apple's catch-up strategy, previous research referred to it as radical innovation (Kim et al., 2010; Jung et al., 2013). Research by Markides and Greoski (2005) indicated that innovation could be defined as 1) the influence of the consumer's habit and behavior and 2) the influence of the existing company's capacity and asset.

Table 4 Different types of innovation

		Effect of innovation on established firms' competencies and complementary assets	
		Enhances	Destroys
Effect of innovation on consumer habits and behaviors	Major	Major innovation	Radical innovation
	Minor	Incremental innovation	Strategic innovation

Source: Markides and Greoski (2005)

Smartphones brought major change from voice call-centered feature phones to data- (Internet, application) centered smartphones, which led to major changes in customers' behavior and habit. In addition, existing device manufacturers, such as Nokia, were strong in steady improvement of the product quality based on powerful hardware technology as their main capacity and asset. However, by adopting 'destructive effective' software as the new competition, the smartphone brought changes in the existing rules of the mobile market. This can be regarded as radical innovation. Thus, Apple brought innovation by creatively imitating the external business model, which is investigated by proposition 2.

Although Nokia faced radical innovation with a new business model, the Finnish company did not recognize this change as a market change. Instead, Nokia decided to tackle this problem by focusing more on its main strength - hardware. After cutting the price of its mobile device, Nokia put its utmost effort into marketing its low-end feature phone in emerging markets. However, Nokia's aim failed due to competition with Chinese companies such as Huawei. In addition, Nokia adopted the Windows Phone of Microsoft after realizing Nokia's Symbian system was not competitive compared to Apple's OS and Android's OS. As a result, Nokia's sale plunged 10 months until the release of MS Windows phone.

When Nokia neglected the importance of having a high-end product in the smartphone market, it lost its dominant position in the low-end Chinese feature phone market, and the sales of smartphones surpassed that of Nokia's feature phone in Q2, 2013. Sales volumes of smartphones increased by 50% in 2013. By contrast, sales of the feature phone dropped by 20%. Nokia kept losing its dominance in the market and, in 2013; its market share fell below 15%. As a result, the mobile department of Nokia was sold to Microsoft in 2013 (CNETKorea, 2014) and Apple became the leading company. Regarding this matter, Chevallier (2013) states that followers used the successful strategy of a business model that combined device, content, hardware and software. This combination changed the rules of the game and supports Proposition 1.

By contrast, although Nokia was the leading and innovative group in the feature phone and smartphone market, Nit did not survive due to a new business model adopted by a follower. However, this failure is not only limited to Nokia; other hardware-based mobile companies such as Siemens, Ericsson, Motorola, Alcatel and Sagem also lost their position in the market.

Xiaomi creatively imitated Google's business model and introduced a low price premium smartphone into the market. Unlike other followers, Xiaomi was able to catch up rapidly (Huryean, 2014). A year after its product release, Xiaomi sold 7.3 million smartphones on the Internet in 2012. The company generated 100 million Yuan in sales within three minutes on Tmall in 2013 and a total of 550 million Yuan on a single day. The four major companies were valued at 10 billion dollars after only three years following Xiaomi's establishment. Since then, Xiaomi broke into the world market selling 15,000 units within two seconds after it was showcased in India in 2014. It recorded a sale of 40,000 units within four seconds (Huryean, 2014). In the third quarter of 2014, Xiaomi overtook Samsung and ranked first in the Chinese smartphone market. Xiaomi's success became a big event in the world (Electimes, 2014.12.17).

In other words, Xiaomi used creative imitation to generate new value by imitating a business model from an external company. As a result, three years after launching a smartphone, Xiaomi was able to dominate the Chinese market in terms of share. Therefore, Proposition 1 is supported. Though Xiaomi's product is criticized for being a copycat, the company ranked third as the most innovative firm by Fast Company in 2013. Its market destructive business model was considered to deliver this innovation (Newswire, 2014.03.09; IDG News Service, 2014.05.19). Thus, the Xiaomi case is another example that shows that the creative imitation of a business model can bring innovation. Xiaomi's case supports Proposition 2.

V. Discussion and Conclusions

This study analyzes the catch-up strategy that Apple and Xiaomi used and examines the results in a smartphone market that shows characteristics of recent industrial change.

When followers in the mobile phone market adopt new business models that lead to dramatic innovation, the market leading company collapses and this dramatic innovation reshapes the smartphone market. In the process of a follower catching up with the leader, this study analyzed and compared the strategy that each company uses to develop a deeper and richer understanding of catch-up strategies in the smartphone market. Informed by a review of the literature, this study put forward two research propositions in the context of an analysis of two smartphone companies' catch-up strategies.

The results of this analysis first support the proposition that Apple and Xiaomi use creative imitation of a business model as an efficient catch-up strategy. Apple and Xiaomi creatively imitated the business model of an external industry for an efficient catch-up. This case proved that the creative imitation of a business model delivers innovation at the end. Just like other companies, Apple and Xiaomi, started their catching up based on their product and technology. But, with the help of creatively imitating a business model, Apple and Xiaomi were able to create new markets and destroy the existing one. This is how Apple became a leading, innovative company in the smartphone market and how Xiaomi became a global Top 5 company and the number one in the Chinese market within three years. This study results have not only suggested a new catch-up strategy and method to be considered by followers, it also reveals how these affects leading groups at the same time. No matter how strong the technological advantage and market position of a leading company, the adoption of a new business model can change the game.

On methodology, this study has some limitations. Firstly, this study only addresses imitation and creative imitation as catch-up strategies. It is apparent that as catch-up strategies, imitation and creative imitation are important, but other strategies, such as innovation, are also important for followers. It is expected that future studies can define various other strategies and draw comparisons and analysis. Secondly, the research methodology is limited to a case analysis and to companies in a single market. The in-depth analysis of the smartphone industry is meaningful; however, other complementary research methodologies are required for the purpose of generalization and verification. Henceforward, this study could expand its domain of inquiry by using other methodologies, such as comparisons with other industries, and substantiated analysis.

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