

Reframing Product Position Rescues Strategy toward Product-market Shift

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Abstract: This paper examines the role of reframing product position in market shift. From surveys on the sequentially developed products of successive market leaders, it became evident that win-lose is decided by the market competition between a new product and their marketed products. As a result of strategy formulation, any existing product blocks the development of any indirectly competitive new product. In direct competition, leaders always keep the leading positions in the market even if the product-market shifts. In indirect competition, leaders do not initiate the new product development (NPD) even if the market size is huge. Furthermore, the leaders block their own NPDs but not block the new entry of other firms. Newcomers, therefore, take over the leaders' position without interference. This finding reveals that the determinant for win-lose is only the reciprocal competitiveness between existing products and the relevant new product. To elucidate the behavior pattern of leaders in NPD, the role of "reframing product position" is proposed. The conclusion is that reframing product position rescues the strategy in the market shift.

Key words: reframing; product position; market shift; product development; strategy; innovation

JEL codes: M11, L20, O32

1. Introduction

A new product development (NPD) shifts a balance of a wide range of market. Even via incremental innovation, an improved product forces the market shift to a greater or lesser extent. For making a go/no-go decision, the market forecast is a critical factor in success for a strategy formulation. The market is forecasted based on the sales estimations of the existing products and a new product. If the sales of a new product exceed the existing, the product forces a market and a related industry shifted. If the estimations by leaders are correct, they can keep the best position in the next market. If the new product is similar to the existing product, it is easy to identify the product profile and to estimate the next market size and the possible sales amount by each firm since the market leaders grasp all of the related information on the related products. In the contrary case, no one can know whether, how, and in what quantities a disruptive product can or will be used before they have experience using it (Christensen, 1997, 2000; Christensen C. M., Bohmer R. & Kenagy J., 2000).

In the case of disruptive innovation, the sales estimation is difficult and different from the existing or related products. In contrast, we believe that incremental product innovations are frequently achieved by strong actors

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who know the market and technology for new products. Market leaders have the stronger positions to improve products because they are in the competitive positions to acquire knowledge of market needs and the seeds of new technologies. When a product changes, incremental product innovation is known to be well managed by the cooperation between the market and technological knowledge (von Hippel, 1988, 2005, 2010; Clerk & Fujimoto, 1991). In those existing frameworks, the technology seeds and marketing needs are generally recognized as the fundamental driving forces for developing the related products in the major markets. The leaders are, therefore, presumed to be able to keep the competitive advantages. The reality causes the unintended damages to the existing leaders even in the case of improved new products. The leaders are very often replaced when they confront dilemmas (Christensen, 1997) or the major products are replaced by indirect competition (Takayama, 2002; Takayama & Watanabe, 2002). There are many discussions on the success factors in product innovation from both aspects of technology push and market pull. Technology-push theories highlight the importance of technology in product innovation (Rothwell et al., 1974; OECD, 1984; Dosi, 1982, 1984, 1988; Dosi & Mazzucato, 2006; Dosi & Nelson, 2010). On another front, market-pull theories highlight the importance of market needs or customer wants (von Hippel, 1978, 1980, 1988, 2005, 2010; Rothwell, 1974). The push-pull framework has not yet lead to any convincing conclusions. For explaining the success of NPD, the aforementioned opposing views have, respectively, highlighted the importance of technological knowledge and market knowledge. Corresponding to product-market shifts over the lifecycle of each product, the market leaders tailor product profile of a successive product and examine the marketability from viewpoints of its related-technologies and the market. When a new technology is closely related to a marketed product, the possibility of a new product is evaluated from the estimation of the market size. For maximizing the sales of a new product in a pipeline, the market knowledge assists the accumulation of the technological knowledge. Apparently, both technological knowledge and market knowledge are the key success factors for NPD. Consequently, the leaders can keep the competitive advantages to develop new products related to their marketed products and therefore cannot be easily replaced by newcomers.

For continuous NPDs, the above assumption seems to be true. The concurrent engineering system is thought to be the best way to launch the next product into the market (Hammer & Champy, 1993). For the automobile industry and the electricity industry, many authors demonstrated the advantage of the collaboration of technological and marketing capabilities (von Hippel, 1988; Ohno, 1988). The reverse is true. Majors often lost the opportunities to develop new products. This paradox has not yet been resolved since the framework of discussions on the key determinants for NPDs had been constructed around the premise of the critical role of technological and marketing capabilities. Albeit the technological and market knowledge is aligned with the strategy, the discussions so far miss the point of market competition of new products.

In this paper, we simply focus on the new product development (NPD) related to the existing products, that leaders can know whether, how, and in what quantities a new product can or will be used before they have experience using it. We further show the behavior of the leaders and the process of product-market shift that the new products will gradually throttle the existing products to a standstill and force the existing industry to shift. In a shifting market, a winner is decided by the market competition between a new product and the marketed products of leaders. In case marketed products directly compete with a new product, the leaders always keep the position in the next product-market. If a new product does not compete directly with the marketed products of leaders, they do not initiate the development of a new product. We concluded win-lose is pre-determined by the market competition, whether it is indirect or direct. To elucidate the win-lose of leaders in NPD, a role of "reframing product position" in a product-market shift is proposed. If a market player reframes the product

position only independently from the in-house strategy for product-market, its strategy is rescued from the fatal loss in the NPD in a product-market shift.

For demonstrating a role of reframing product position, we focus firstly on the anti-hypertensive market since the final breakthrough products have just replaced the existing products after the market development phase has come to maturity. The finding is that the existing products inhibit the development of indirectly competitive new products that create a new market. In case new products compete indirectly with the existing products, the market leaders are replaced by newcomers. The win-lose is determined by a product position of a new product. To validate the theory, a symbolic case in the win-lose cases in the commodity market is discussed. Tea with high catechins is the biggest selling government-approved food for specified health uses. A commodity firm, Kao Corporation, succeeded in the NPD, although the market leaders had acquired the same knowledge. To explain the win-lose in NPD, the role of "reframing product position" is proposed for the successful product lifecycle management. The conclusion is that reframing product position rescues the strategy from the fatal loss in product-market shift and even in industrial shift.

2. Win-lose in the Bio-industry

In the high-tech-driven industries, emerging technologies are applied continuously for improving the existing products. Especially in the bio-industry, many market leaders have failed in promising NPDs. Their intensive R&D investment could not prevent the entry of newcomers. The most typical example is the NPD related by using recombinant DNA techniques. Almost the large firms, as well as in the bio-related industries, had established the bio-tech institutes in 1980s. Although many major players have failed in the NPD, many firms have still believed that bio will strike the gold mines from the huge unveiled markets.

In the bio-industry, the win-or-lose of leaders are explained by direct or indirect market competition between the existing products and a new product. Grain industry and agri-businesses are typical examples of direct competition when new products are developed. Major multinational grain companies have continuously succeeded in the NPDs. By the successive launches of genetically modified plants, they have still maintained the leading position in the market except niche recombinant plants. In contrast, major pharmaceutical firms have failed in the NPD of bio-pharmaceuticals. They did not think bio-pharmaceuticals compete directly with their leading products because they concluded that bio-products were not easy for users to handle. Almost pharmaceutical leaders concluded that bio-products were positioned in the differentiated market, the expected sales were annually less than 50 million dollars even at a peak maximum and therefore those markets are of little importance. Albeit launched, majors denied the possibilities of competition with their marketed products. As proved, the leaders did not take any in-license opportunities from the bio-ventures like Genentech until the new bio-products slowly throttled the existing products to a standstill in the leading position and forced the existing industry to shift.

Surprisingly, major market leaders have neglected the marketability of bio-products through the proactive strategic decision. Consequently, the major firms in the pharmaceutical industry have lost the new market for bio-pharmaceuticals up to the present time. The position of the market leader is taken over by prominent bio-ventures such as Amgen that started by the spin-off researchers from the most prominent leader firm, Merck in the US. Merck lost the top market share in the world and CEO of Amgen became Chairman of the Board of PhRMA (Pharmaceutical Research and Manufacturers in America). The major firms had lost not only the symbolic position but also the upcoming market in the field of the bio-pharmaceuticals.

Grain-agro and pharmaceuticals have been the biggest industries in the bio-market. Regarding those major new-born recombinant product markets, Table 1 shows the win-lose results of major firms. Recombinant plants and seeds competed directly with the existing plants and seeds. Major multinational grain companies developed new products by applying recombinant technologies. The major firms have still now excluded the newcomers from the recombinant plant market. For recombinant bio-pharmaceuticals, major pharmaceutical firms did not succeed in NPD or in-license of recombinant pharmaceuticals. Leading pharmaceutical companies believed that their leading products did not compete directly with bio-pharmaceuticals. New recombinant bio-pharmaceuticals have slowly throttled the existing products to a standstill in the marketed therapeutic areas and force the existing industry to shift. Marketed products are taking over the leading position by replacing the existing products such as reached 73.5% of the top 10 sellers in the Japanese pharmaceutical market (Cedium Strategic Data K.K., 2014). Because the existing products compete indirectly with recombinant bio-pharmaceuticals, leading companies failed in the NPD and consequently divested of their leading position in the new-born huge market.

Table 1	Win-lose of Major Firr	ns in the New-born	Recombinant Bio-product Market
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	Win-lose of Majors	Competition
Recombinant grains	Win	Direct
Recombinant bio-pharmaceuticals	Lose	Indirect

What is the key factor for success or failure? Win-lose is determined by whether a new product competes directly with marketed products. From viewpoint of reciprocal competitiveness, a new product is classified by superior point versus differentiated point. Table 2 summarizes the key function of the reciprocal competitiveness for win-lose in NPD. If a new product has a superior point to the existing products, it directly competes with the existing products and will replace the market. Major firms decide the NPD and therefore the winner is the major. In case a new product has a differentiated point to the existing products, it indirectly competes with the existing products and will create a new market. Major firms do not understand the market potential of the NPD and do not intend to prevent the NPDs by other firms. The leaders therefore lost the opportunity of the NPD.

Type of new product	Superior	Differentiated	
Position to Existing products	Directly competing	Indirectly competing	
Mode of Market penetration	Replace market	Create new market	
NPD by major firms	Win	Lose	

Table 2 Win-lose of Major Firms and Two Types of New Products

According to Ansoff's product-market matrix (Ansoff, 1966, 1988; Ansoff, McDonnell, Lindsey, & Beach, 1993), a superior product corresponds to a new product with the same mission that replaces the existing market. A differentiated product corresponds to a product with a new mission that creates a new market. From leaders' framing of the product-market strategy, superior NPD is permissive, albeit differentiated NPD is non-permissive.

3. Win-lose in the Healthcare Industry

According to a statistical analysis by Japanese Pharmaceutical Manufacturers' Association (JPMA, 2013), the average development cost is approximately 500 million dollars for one product and the average success ratio of NPD was 1/27,090 between 2007 and 2011. The development takes approximately 10 years from the discovery

stage to the launch. The key success factor for the leaders is the persistent accumulation of in-house expertise. By accumulating sustainable capabilities, market leaders can keep the best position to collect the market needs and seeds of new technologies through the network of outside professionals. Owing to strong contacts with the professionals, the market leaders can utilize maximally their superior positions to collect the market and technological information on the next product.

The anti-hypertensive has configured the largest market which accounts for 10% of the pharmaceutical market in 1990s and has increased the share to 20% of the total market of the leading countries in the early 2010s. Hypertension is one of the lifestyle-related diseases, by which heart failure, cerebral stroke, myocardial infarction, kidney malfunction, diabetes and other dangerous complications are caused. Angiotensin receptor blockers (ARB) were developed from 1990s to 2000s and have achieved more than half of the total hypertensive market. For hypertensive medication, two major products, Ca blockers (Ca) and Angiotensine Converting Enzyme Inhibitors (ACE) had been mainly prescribed before ARB was marketed. As Ca claims very rapid onset and sharp efficacy in the Japanese leaders' market. Since ACE is less effective than Ca but had the organ protection function, ACE is used for the patients who had risks for the organ damage.

The first ARB was launched by Merck & Co. in 1995. According to the industrial reviews, the sales was underestimated around 400 million dollars in the world. After 10 years from the first launch, ARB has replaced the existing Ca market. In 2010, ARB became the largest product category in the hypertensive market (Fuji Keizai, 2010). In 2004, sales of ARB in the Japanese pharmaceuticals market exceeded hyperlipidemia market, which had formerly been the largest product category in the pharmaceutical market and the main target of supplementary food for specified health use as described in the next chapter. ARB has dominated the world antihypertensive market with a share over 70% for the first prescribed patients from the mid-2000s.

Company	Market share (%)	Win-lose in the development
Pfizer	33.9	_
Bayer	12.8	_
Hoechst	9.0	(licensed form Sanofi)
Astra	3.7	(licensed from Takeda)
BASF	2.7	_
Monsanto (Searle)	2.4	_
Kyowa Hakko	2.2	_
Yamanouchi	2.0	(licensed from BI after Ca market was replaced)
Takeda	2.0	delayed because the development was discontinued
Ciba-Geigy	2.0	(from an acquired firm, Sandoz)

Table 3 "Revenge of Success" to Market Leaders of Ca Antagonists, a Product Not Competing with ARBs

Source: World Review 1999 by IMS Health, the Pharmaceutical Market

Particularly in Japan, the "myth of Ca" controlled the antihypertensive market. It claimed the absolute superiority of Ca, the quick onset of the efficacies. Leading firms educated the market through the network of professionals such as professors, prescribing physicians and pharmacists. The leading firms are scarified with the revenge of success not only in Japan but also in the world (Takayama, 2002; Takayama & Watanabe, 2002). The performance of the world top 10 leading firms in the Ca market is summarized in Table 3. Among the top 10 leading firms, nine of ten had no ARB product and three firms acquired co-marketing rights of ARB after the

ARBs had become breakthrough products and total ARB market had become bigger than their forecasts. Takeda once discontinued NPD of the world's strongest ARB and therefore lost the chance to sell in the world by its own sales forces. Takeda reframed the product position and initiated the development again after the first ARB had been expected to become a billion seller. Takeda's new ARB has now become a breakthrough over 3 billion dollars sales in 2010. Reframing the product position rescued the strategy. Ciba-Geigy merged Sandoz in 1997 (currently named Novartis) and got an ARB. The top 10 firms except Takeda have no self-made or self-developed products in the world market, although ARBs became the global mega breakthrough products in 2010s.

In the early 2000's except Japanese hypertensive market, ACE leaders have kept 1.5 times sales of Ca in Europe and the equal sales of Ca in the US. Seven of the top 10 leaders in the ACE market succeeded in the development of ARB ahead of the Ca leaders and others, as shown in Table 4 (Takayama, 2002; Takayama & Watanabe, 2002). The reason is that the new products compete directly with their own products. The ACE leaders could use their superior position for developing the new products because they do not need to reframe the product position and the strategy. The successor products replaced Ca and became in the leading position in the hypertensive market in 2010.

Table 4 The Acid Venchi of ACE Leavers			
Company	ACE Market share (%)	The order of the launch dates	
Merck & Co.	31.0	1st	
Zeneca	13.4	5th (licensed from Tanabe)	
BMS	10.7	4th (1st as ACE/NEP inhibitors)	
Warner-Lambert	6.4	—	
Novartis	5.3	2nd	
Hoechst	3.8	3rd (licensed by Sanofi)	
Servier	3.7	(2nd as ACE/NEP inhibitors)	
Tanabe	1.9	—	
Banyu	1.8	1st (Merck's subsidiary in Japan)	
Sankyo	1.7	8th (licensed to foreign companies)	

Table 4	The Achievement	of ACE	Leaders
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Source: World Review 1999 by IMS Health, the Pharmaceutical Market

ARBs are superior to ACEs and differentiated from Ca. Since ARBs were more advantageous than ACEs, ARBs replaced ACEs in the market. The leaders in the ACE market needed an ARB to keep the market position. In contrast, Ca does not compete directly with ARB. Due to the product position of ARB, all of the Ca leaders denied the necessity of the NDPs and lost their market share. Table 5 explained the product position of ARB compared to ACE and Ca. When existing products directly compete with a new product, market leaders win the NPD and get the share in the next market. When an existing product indirectly compete with a new product, an existing market leader fail in the NPD.

 Table 5
 Two Types of the Market Positions of New Products

	ACE	Ca
Competition with the new products	Directly compete	Indirectly compete
Position to the new products	Replace the existing products	Create a new market
NPD	Win	Lose

The products for gastrointestinal diseases are the second largest therapeutic area in the world market. Figure 1 shows the step-by-step product-market shifts in the Japanese gastrointestinal pharmaceutical market from 1977 to

2012. The product-market has been shifted three times. The first product category was mucosal defense factors, which have been the basic medicine. The second was H2 blockers, which was the biggest category in 2000. The third is proton pump inhibitors, which sales are forecast to reach the peak in 2020. When the market shifts by a product change, the leading firms are forced to be replaced. In the mucosal defenses market, the market leaders were Eisai and Takeda. In the H2 blockers market, Yamanouchi became a top seller in the global market around 2000. In proton pump inhibitors market, Eisai and Takeda have come back to the market leaders. All of any leaders in the former market did not initiate the NPD. Win-lose is decided by an existing product of a firm. The existing products block the development of indirectly competitive new products. Indirect market competition elicits the same response of behavior from the existing firms. This fact revealed a role of the product position. Win-lose is not decided by the size of the market or sales of the products but by the mode of market competition with a firm's marketed product.



Figure 1 The Product Changes in the Japanese Gastrointestinal Pharmaceutical Market

Surprisingly, the market leaders did not develop any indirect-competitive new products even when the market reaches the maturity. This finding is not limited to the product in case. As act as a leader in the corresponding area, the majors lost a new and large market created by an indirectly competitive new product. The leaders have lost the indirectly competitive new markets, such as bio-pharmaceuticals, anti-hypertensive, anti-ulcer, osteoporosis, rheumatoid arthritis, asthma, cancer, vaccines and other breakthrough pharmaceuticals. According to the author's research results, all leaders in any therapeutic fields and in other industry shift have lost their leading positions when a new product indirectly competed with their marketed products.

4. Win-lose in the Technology-driven Healthcare Food Market

The market of healthcare food was triggered by a cathechin-rich tea. That was the first product in the market and a newly categorized healthcare food as "foods for specified health use", that is defined as a class of foods which contain specific therapeutic ingredients and are approved by the Ministry of Health, Labour and Welfare based on the test results on the safety and effectiveness. The market is for the life style related diseases and the products claim the same indications as hypertensive drugs and lipid lowering pharmaceuticals. The difference is not for the treatment but for the prevention. Pharmaceutical firms denied the new market, albeit they had the same category products in the healthy foods market. As shown in Table 6, foods, beverages and pharmaceutical firms had not initiated the NPD because the new product has a critical disadvantages (bitter, bad taste and little efficacy) compared to the existing products. Only Kao Corporation, a soap and commodity company, appealed a superior point (health) and accomplished the NPD in 2003. Kao released catechin-rich green tea and its market reached 70 billion yen in 2012 (Toyo Keizai, 2013).

	Foods or beverages leaders	Pharmaceuticals leaders	Outsiders
Market entry	Lose	Lose	Win (Kao Corporation)
Competitive position	Indirect	Indirect	No related product
New products	Disadvantages (Bitter taste)	Disadvantages (No or little efficacy)	Healthy
Product development	Deny	Deny	Promote

 Table 6
 Win-lose at the Start of the Governmentally Authorized Healthcare Foods Market

Catechin is a bitter ingredient of green tea. Itoen Inc. had kept the leading position in the green tea and its beverage market after the success of the NPD of canned green tea in 1985 (Itoen HP) and has kept the highest market share over 20 years. Both beverage leaders and pharmaceutical leaders had known the lipid–lowering function of catechin. Only Kao did. All of the existing majors denied the marketability. Once the annual sales had exceeded 30 billion yen, they reframed the product position from disadvantageous (bitter and little efficacy) to superior (healthy claim). Suntory doubted the marketability at the beginning of the high-catechin containing green tea market but decided to develop high-catechin containing oolong tea after the market matured, although it has kept the top share in the Japanese oolong tea market. Suntory's high-catechin containing oolong tea had been in the leading position like high-catechin containing green tea. The key determinant for initiating the NPD was the position of the new product. If a firm reframe the position of a new product from disadvantageous to superior, the strategy for NPD is transformed from blocking to promoting.

The win-lose fate of major firms was observed likewise in the daily life related markets. In the power-toothbrush market, a small Seattle-based American venture, Optiva Corp., developed the Sonicare sonic toothbrush. Toothbrush manufacturers were skeptical about the future market and neglected the NPD. When Optiva got nearly half of the share (46 percent) of the U.S. power-toothbrush market, Philips Domestic Appliances and Personal Care (DAP), a division of Royal Philips Electronics, acquired the firm in 2000. A million-seller portable power-toothbrush, Doltz, was developed by the same newcomer, Panasonic, in 2010. As well as the former cases, toothbrush majors neglect the differentiated market.

Regarding other products in other markets, the fate of the win-lose of major firms were decided by the same mechanism (Takayama, 2010). In the case of direct market completion, cassette tape recorder, CD player, digital camera, and DVD are apparently superior to the existing products and therefore the majors won the NPD. In the case of indirect market competition, PC, Amazon book store, net securities, net retailing etc. were not advantageous to the existing products but less superior from majors' perspectives. For transforming the strategic decision, the key determinant for the successful NPDs is reframing the product position by finding the superior points of the new products.

5. Concluding Remarks

The win-lose was pre-determined before marketing a new product. If a new product competes directly with the existing products because of superior points, the majors initiate and complete its NPD. If a new product does

not have any superior point, the leaders estimate the market too small or temporarily big since a new product does not compete directly. Therefore, the leaders do not initiate the development of any indirectly competing products. The former is "product-market substitution type" and the latter is "product-market shift type". In this case, the latter does not compete directly with the existing products. Leaders could later shift the product position after the real market exceeds their forecasts and is expected grow. Kao's success owed to the indifference about the market knowledge (Takayama, 2005, 2009). Kao's core capabilities were from lipid and oil, as the base to the soap. Kao's management only decided to make the new product position of the green tea from tasting to the health use. The tea majors' concern was a bitter taste of catechin. After the majors reframed the position of the new products from good taste to good health, they initiated the development of the same categorized products by advertising the superior advantages to green teas.

By reframing of the product positions, they turned around the strategies. By reframing the product position, the strategy was rescued not to block the NPD. Takeda, Sankyo and Yamanouchi re-started the development by reframing the position of new products. Suntory reframed the product position as well as high-catechin green tea. The product position of new ARBs was reframed from differentiated to superior in the same manner as cathechin-rich green tea. By shifting the position of the products from differentiated to superior, new products got accepted and the strategy was shifted from blocking to promoting.

For the NPD in a direct product-market competition, the strategy for the existing products is permissive to and foster the NPD. For the NPD in an indirect product-market competition, leaders did not consider the superior point and marketability of a new product. The strategy of the existing products is non-permissive and block the NPD. Among them, some shifted the strategy by reframing the product position and succeeded in the NPDs. The key for success was how to reframe the product position. The strong products in the market often freeze the leaders' capabilities of NPD. For the market leader, reframing the product position has defreeze and release its frozen capability of NPD. In the case of newcomers, the reason of their success owes to the different framework of the product position. Their reframing the product position is independent from their marketed-products and leaders' market framing. The newcomers, therefore, succeeded in the indirectly competing NPDs for the successive big market. Reframing the product position rescues the strategy toward the product-market shift.

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