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Reframing of Product Position Rescues the Strategy at the Lifecycle Management

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Abstract. This paper shows the role of reframing product position at the lifecycle management. From surveys on the products of the leaders, it became evident that win-lose is determined by the competitiveness between a new product and the marketed products of the leaders. The result is that existing products inhibit the development of indirectly competitive new products. To explain win-lose in the NPD, the role of “reframing product position” is proposed. The conclusion is that reframing product position rescues the strategy at the lifecycle management.

Keywords: Reframing, Product position, Strategy, New product development, Lifecycle management

1 Introduction

We generally believe that incremental product innovations are frequently achieved by strong actors who know the market and technology for new products. Market leaders have the stronger positions to improve products because they have the competitive positions to know the market needs and the seeds of new technologies. When a product changes, it is well known that the incremental product innovation is well managed by the cooperation between the market and technological knowledge [1], [2], [3], [4]. In particular, 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 is different from the assumption; the leaders are very often replaced when they confront dilemmas [5] or the major products are replaced [6], [7]. There are many discussions on the success factors in product innovation from aspects of technology push and market pull. Technology-push theories highlight the importance of technology in product innovation [8], [9], [10], [11], [12], [13], [14]. On another front, market-pull theories highlight the importance of market needs or customer wants [1], [2], [3], [8], [15], [16]. The push-pull framework has not yet lead to any convincing conclusions. With respect to new

product development (NPD), the aforementioned opposing views have, respectively, highlighted the importance of the technological knowledge and market knowledge. At the lifecycle management (LCM), the product profile of a successive product is examined 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, market leaders can keep the competitive advantages to develop new products related to their marketed products and therefore cannot be easily taken over by newcomers.

For the continuous NPD, 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 [17]. For the automobile industry and the electricity industry, many authors demonstrated the advantage of the collaboration of technological and marketing capabilities [1], [18]. The reverse is true. Majors often lost the opportunities to develop or launch new products. This paradox has not yet been resolved since in the earlier discussions the key determinants of NPDs had been discussed only from the perspectives of technological and marketing capabilities. Albeit the technological and market knowledge is aligned with the strategy, the discussion so far miss the point of reframing product position.

In this paper, we study the role of reframing product position at the lifecycle management. From the surveys on the products of leaders, it becomes evident that win-lose is determined by the competitiveness between a new product and the marketed products of leaders. The result indicates that the existing products inhibit the development of indirectly competitive new products. To explain the win-lose in NPD, the role of “reframing product position” in NPDs is proposed. If a market player reframes the product position independently from the current market, reframing product position rescues the strategy from the fatal loss in NPD at the lifecycle management.

For demonstrating the 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 NPD at the lifecycle management.

2 Win or loss of new product development in the bio-industry

Many market leaders have failed in promising NPDs. Their intensive R&D investment did 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 could strike the gold mines from the huge unveiled markets.

In the bio-industry, win-or-lose results are simple. Major crop firms have continuously succeeded in the NPDs. By the successive launches of recombinant crops, they have maintained the leading position in the market except niche products. On the contrary, major pharmaceutical firms have not succeeded in the NPD of bio-pharmaceuticals. They did not think bio-pharmaceuticals compete directly with the existing products because bio-products were not easy to handle. Major players concluded that bio-products were positioned in the differentiated market. Albeit launched, majors denied the competing possibilities of the bio-products and then declined the opportunity to introduce the bio-products even at a small licensing fee offered by the bio-ventures like Genentech. That proves the major market players have denied the marketability of the new products. Consequently, the major firms in the pharmaceutical industry have lost the bio-pharmaceutical market up to the present. The outstanding winner was Amgen that started by the spin-off researchers from Merck in the US that had 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.

Table 1 summarized the win-lose of major firms in the new-born recombinant bio-product market. Crop and pharmaceuticals were the biggest industries in the bio-market. The recombinant crops or seeds competed directly with the existing crops. Major multinational crop firms developed the new products by applying the recombinant technology. The major firms have still now excluded the newcomers from the recombinant plant market. In case of the recombinant bio-pharmaceuticals, major pharmaceutical firms did not only succeed in NPD but also rejected the license opportunities of recombinant pharmaceuticals. Pharmaceuticals did not compete directly with bio-pharmaceuticals but some existing products have been gradually replaced by bio-pharmaceuticals in several large markets such as rheumatoid arthritis, cancer treatment/prevention and vaccines. In 2012, the share of the bio-pharmaceuticals has reached 73.5% of the top 10 sellers in the Japanese pharmaceutical market [19]. In case of indirect competition such as recombinant bio-pharmaceuticals, majors failed in the NPD and lost the future market.

Table 1. Win-lose of major firms in the new-born recombinant bio-product market.

	Win-lose of Majors	Competition
Recombinant crops	<i>Win</i>	Direct
Recombinant bio-pharmaceuticals	<i>Lose</i>	Indirect

Table 2 explains the mechanism of win-lose of majors. The author proposed the concept of the product position to existing products. From the viewpoint of the competitiveness, new products are classified by superior point versus differentiated point. 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 need to decide the NPD and therefore lost the opportunity of the NPD.

Table 2. Win-lose of major firms and two types of new products

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

According to Ansoff's product-market matrix [20], [21], [22], 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.

3 Inevitable fate of win-lose in the pharmaceutical new product development

According to a statistical analysis by Japanese Pharmaceutical Manufacturers' Association [23], 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. This means that sufficient skill is required for the NPDs.

Owing to the necessity of the expertise, the market leader can keep the best position to collect the market needs and seeds of new technologies through the network of professionals. Owing to strong contacts with the professionals, the market leaders can often utilize their superior positions to collect the market and technological information on the next product.

Holding the initiative in the corresponding field, the majors lost a new and large market created by an indirectly competitive new product. The market leaders have lost the indirectly competitive new markets, such as anti-hypertensive, anti-ulcer, bio-pharmaceuticals, and other breakthrough pharmaceuticals.

The anti-hypertensive has constituted 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 reached more than half of the total hypertensive market. For hypertensive medication, two major products, Ca blockers (Ca) and Angiotensin Converting Enzyme Inhibitors (ACE) had been mainly prescribed before ARB was marketed. As Ca shows rapid onset and sharp efficacy, Ca became the first choice for the treatment of the hypertensive patients in the Japanese 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 has become the largest product category in the hypertensive market [24]. 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.

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) [6], [7]

Company	Market share (%)	Win-lose in the development
Pfizer	33.9	—
Bayer	12.8	—
Hoechst	9.0	(licensed from 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)

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. Due to the strong product position, the leading firms are scarified with the revenge of success not only in Japan but also in the world [6], [7]. The performance of the world top 10 leading firms in the Ca market is summarized in Table 3. Among the top 10 companies, nine had no ARB product and three firms acquired co-marketing rights of ARB after the market became clear. Takeda once discontinued NPD of the world's strongest ARB and therefore lost the chance to sell in the world by its own sales force. Takeda changed the product position and restarted after the sales of the first ARB had exceeded the sales estimation. 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.

Seven of the top 10 leaders in the ACE market succeeded in the development of ARB ahead of the Ca leaders and the rest, as shown in Table 4 [6], [7]. 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 change the product position and the strategy except of the cannibalization.

Table 4 The achievement of ACE leaders (Source: World Review 1999 by IMS Health , The Pharmaceutical Market)

Company	ACE Market share (%)	The order of the launch dates
Merck & Co.	31.0	1 st
Zeneca	13.4	5th (licensed from Tanabe)
BMS	10.7	4th (1st as ACE/NEP inhibitors)
Warner-Lambert	6.4	—
Novartis	5.3	2 nd
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)

ARBs are superior to ACEs and differentiated from Ca. From a marketing viewpoint, ARBs competed with ACEs directly and replaced the ACE market. The leaders in the ACE market needed to develop an ARB to keep the current 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 the market share.

Tale 5 explained the product position as the same manner as shown in Table 2. When existing products directly competed with a new product, the market leaders succeeded in the NPD. When existing products indirectly competed with a new product, the market leaders failed 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. Fig. 1 shows the continuous product changes in the Japanese gastrointestinal pharmaceutical market from 1977 to 2012. The products have been changed three times. The first product category was mucosal defense factors, which

have still been the basic medicine. The second was H2 blockers, which was the biggest category in 2000. The third is the category of proton pump inhibitors, which sales are presumed to reach the peak in 2020. In accordance with the product changes, the leading firms changed. 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 the former market leaders did not initiate the NPD since they denied the market of the next products as their strategies of the product position. The product position of the existing products pre-determined the strategy. The existing products inhibited the development of indirectly competitive new products.

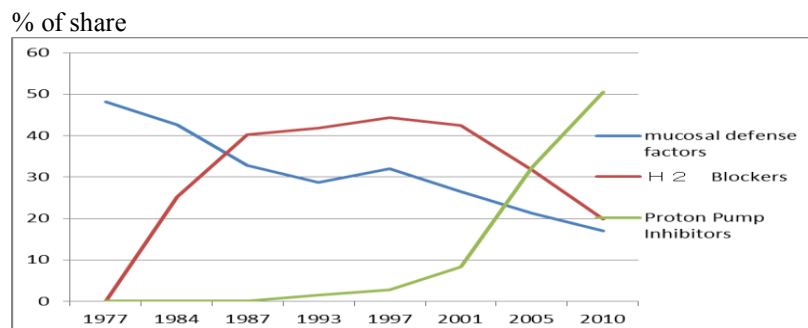


Fig. 1. The product changes in the Japanese gastrointestinal pharmaceutical market.

The market leaders did not develop the new product when the market reaches the maturity as far as new products are not directly competing with the existing products. This finding is not limited to the product in case. The same results are obtained in the other pharmaceutical markets such as bio-pharmaceuticals, rheumatoid arthritis, asthma, hypertensive, osteoporosis, cancer and vaccines.

4 Win or lose in a commodity market: a case of foods for specified health use

The market of "foods for specified health use" was triggered by a catechin-rich tea. It 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 as hypertensives 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, 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 [25].

Table 6 Win-lose at the start of the governmentally authorized foods market

	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

Catechin is a bitter ingredient of green tea. Itoen Inc. is the market leader after the success of the NPD of canned green tea in 1985 (Itoen HP). Itoen has kept the highest market share for 20 years. Not only beverage leaders but 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). The key determinant for initiating the NPD was the position of the new product. If a firm reframes the position of a new product from disadvantageous to superior, the strategy for NPD is transformed from inhibitory 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 determined by the same mechanism [26]. In the case of directly competing new products, 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 indirectly competing new products, PC, Amazon book store, net securities, and net retailing 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. Reframing product position rescues the strategy at the lifecycle management

The win-loss was pre-determined by the competitive position of a new product. If a new product apparently has a superior point to the existing products, it competes directly and the majors respond faster and win. If a new product does not have any superior point, it competes indirectly and the majors estimate the market too small or temporary. Therefore, majors will lose the timing for the NPD. The former is “market substitution type” and the latter is “market change type”. Although the latter does not compete directly with the existing products, majors could later shift the product position after the market is expected to grow. Kao’s success owed to the indifference about the market knowledge [27], [28]. 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. To follow the reframing of the product positions, they turned around the strategies. By reframing the product position, the strategy was rescued not to inhibit the NPD.

Takeda, Sankyo and Yamanouchi re-started the development by reframing the position of new products. The product position of new ARBs was reframed from differentiated to superior in the same manner as catechin-rich green tea. By shifting the position of the products from differentiated to superior, new products got accepted and the strategy was shifted from inhibitory to promoting.

In the directly competing cases, strategy follows the product position. In indirectly competing cases, majors did not consider the superior point and marketability of new products. Among them, some shifted the strategy by reframing the product position and succeeded in the NPDs. The key for success was the product position. The strong products in the market often freeze the majors’ capabilities of NPD. For the market leaders, reframing the product position has released the capability of NPD. In the case of newcomers, reframing the product position is independent from their marketed-products. Reframing the product position rescues the strategy at the life cycle management.

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