



Family Computer in the Early Stages : How did Nintendo construct the relationships in the market?

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Family Computer in the Early Stages

- How did Nintendo construct the relationships in the market? -

1. Introduction

Undercutting the price can be an effective tool to increase sales, but necessitates a smaller per-piece profit margin, requiring higher sales volume to achieve similar gross profits. There is a real risk that reducing per-piece profits ultimately lead to reduced revenue and profits. This is a basic dilemma for managers, in planning their marketing or sales strategies.

Looking around industry, however, we can easily find successful examples of price undercutting. Some companies boldly emphasize their lower prices. For example, Funai Electric Co., Ltd. in Japan has focused on selling low-price household appliances, but the company has been able to profit successfully. Its sales in 2001 were \$1.326 billion and recurring profits were \$138 million¹.

We see the same regarding McDonald's Japan. It sold a hamburger at \$0.53 on weekdays in 2000 and 2001. This "Week Day Smile" program boosted its sales in 2000. In 2001, although its sales decreased a little, it sold \$2.965 billion and gained \$155 million as recurring profits².

These companies are praiseworthy and excellent examples. But we should still ask: How do they successfully implement these price undercutting strategies and produce acceptable profit levels? It is critical for marketers to examine this issue.

Nintendo Co. took the same strategy as Funai and McDonalds Japan. When the company launched into the home videogame business in Japan, it sold its videogame console at an amazingly low price in 1983. This low price enhanced the sales of its consoles.

However, the execution of this strategy must not have been easy. Nintendo aimed not only to reduce the price but also to build a highly profitable business. It was clear that if the low price came from cutting its margins Nintendo couldn't enjoy high profits.

Nintendo solved this problem by preparing a careful design for the relationships with its suppliers and distributors. Generally, companies can reduce costs by revising the relationships with their trading partners. One critical point is that relationships come from

¹ Funai Electric Co., Ltd. Home Page.

The foreign exchange rate was ¥122 / \$U.S in 2001. Federal Reserve Statistics Release Home Page.

² McDonald's Holdings Japan Home Page & McDonald's Japan Home Page.

dialogues. If a company intends to build good relationships with partners, the company should offer them incentives to undercut their merchandise, as well as request them to undercut their merchandise.

How did Nintendo build the relationships with its suppliers and distributors, and enhance its profits? There are several books and articles which describe what Nintendo did. They point the impact of the low price of the console, Nintendo's regulation for the software houses to develop the software for Family Computer, and so on. Unfortunately, it was not that simple. These partial descriptions of actions are missing to answer this question; How could Nintendo successfully implement such actions?

In order to implement those actions, Nintendo needed to draft an elaborate grand design for coordination; the resources of the company and the relationships with its trading partners needed to be carefully coordinated. In this case study, we will point out the reciprocal mechanism realized through the Nintendo's careful design for relationships with its trading partners.

2. Nintendo stood at the summit of the Japanese electronics makers

In the early 1990s, Nintendo was in the spotlight as one of the most profitable companies in Japan. In 1992, Nintendo's sales were \$4.5 billion and its recurring profits were \$1.3 billion.

In this year Nintendo's recurring profits exceeded the other major Japanese electronics makers', such as Matsushita, Hitachi, NEC, and Sony, despite the fact that Nintendo was a smaller company. At that time, it had fewer than a thousand employees, but Nintendo stood at the summit of Japanese electronics makers³.

Nintendo primarily earned the profits from its home videogame business. Nintendo named its home videogame "Family Computer". It was a kind of computer game. But it was different from a typical computer game played on a personal computer. And it was different from the videogames marketed to businesses, and used in amusement arcades. Home videogames are characterized first and foremost by their ease for home use. Nintendo's console was not as expensive as a personal computer, and people could play the game by connecting the console to their television. And they could play new games one after another, by changing the cartridges. ⁴

³ Baba (1993), pp.109-110, Kikawa (1993), Yamauchi (1993),

⁴ Kikawa (1993), Kohashi (1998)

The first great success in the home videogame industry was “Atari 2600” launched by a U.S. company, Atari, in 1977. Six years after the release of Atari 2600, Nintendo launched Family Computer to the market. So when Nintendo released Family Computer, the same kind of videogame consoles had already been sold in Japan by several companies: Atari, Bandai, Tommy, and so on.⁵

In spite of entering the market late, Nintendo rapidly overwhelmed the other companies. It sold 440,000 consoles in the first half year. At the end of that year, Nintendo’s market share spiked to 90%.⁶

3. Success in the 8-bit and 16bit machine

Nintendo was established in Kyoto in 1889. Originally the company was a manufacturer of two styles of playing cards (One Japanese, the other western). In 1960s it started to deal in electrical toys. “Beam Gun” (1965), “Color TV Game 15” (1977) and “Game & Watch” (1980) were the Nintendo’s best sellers in those days. In 1981 Nintendo released the new videogame software for amusement arcades. This software, “Donkey Kong”, was a huge success.⁷

Family Computer was released in 1983. After initial success in Japan, Nintendo launched it in foreign markets in 1986. In the beginning, the console of Family Computer was 8-bit. In 1990, Nintendo released a new 16-bit console, which was named “Super Family Computer”. This new machine brought more sales and more recurring profits to Nintendo. Family Computer’s competitive advantage had been high during the 8-bit and 16bit machine era. ⁸

Figure 1 shows sales and recurring profits of Nintendo from 1982 to 1995. 1982 was the first year of the release of Family Computer, and 1995 was the first year of the release of the next generation console “NINTENDO64”, which was 32/64-bit machine. Seeing the Figure 1, it is clear that the business came to maturity in 1990s, though Nintendo achieved remarkable growth of sales and profits in 1980s. We will consider how Nintendo grew in 1980s below.

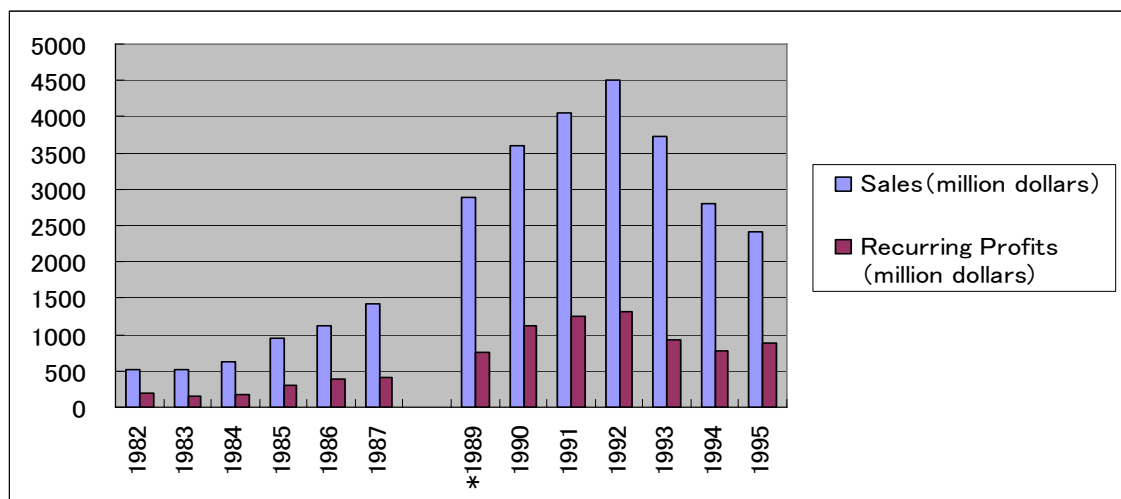
⁵ Baba (1993), pp.84-90, Kikawa (1993), Sheff (1993), p.29, Kohashi (1998)

⁶ Baba (1993), p.90, Kikawa (1993)

⁷ Baba (1993), pp.67-84, Kikawa (1993), Sheff (1993), pp.13-29, Kohashi (1998)

⁸ Kohashi (1998)

Figure 1 Sales and recurring profits of Nintendo from 1982 to 1995



* Fiscal term was changed

**Applied the same foreign exchange rate to every year's data ¥125/ \$U.S. (1992)

Source: Kohashi (1998)

4. Family Computer came from behind

When Nintendo released Family Computer, there were already several companies marketing home videogame consoles in Japan. Nintendo entered the market late, But quickly forced a number of competitors out of business.

Before Nintendo entered the industry, there were virtually no standards for home videogame console manufacturing, and cutting-edge technology was not required to produce the units. Nintendo outsourced the production of their consoles and procured components economically. At the time, a relatively small amount of capital was required to enter the home videogame industry. Furthermore, Nintendo had already established close relationships with the toy retailers and wholesalers, thus permitting straightforward marketing and distribution channels. The entrance barrier to the home videogame industry was not very high for Nintendo.⁹

The main problem for Nintendo was competition from nearly ten other companies that had already marketed home videogame consoles. If Nintendo were not able to differentiate its console from the competitors', it would be unable to enhance its sales without losing profits. Its sales expansion would intensify the price competition.

⁹ Baba (1993), pp.87-88, Kikawa (1993), Sheff (1993), p.32, Kohashi (1998), Fujikawa (1999)

We should point out here that Family Computer had two advantages. First, regarding its performance, Family Computer's console surpassed the competitors. Family Computer's graphics quality was on a par with amusement arcade videogames. Family Computer could display fifty-two colors, compared with eight or sixteen from competitors' videogame consoles.¹⁰

Second, Family Computer's cost was significantly lower than the competitors'. Their consoles retailed for \$86 to 216. Nintendo released Family Computer's console at \$64. The price of its software was \$21, so the total outlay for the package was only \$85, making an attractive and affordable product for the mass market.¹¹

Nintendo's rock-bottom price was stunningly low for their competitors. One of them allegedly made a trial calculation for a console equivalent to Family Computer's in performance, and calculated that they could not sell such a product for less than \$129.¹²

5. Reorganizing the relationships

By releasing a high-performance console at a low price, Nintendo acquired a large demand quickly. This is why Nintendo's Family Computer succeeded at its inception. But the question remains: why was it that only Nintendo was able to sell such a high-performance console at a price half (or less) than the average price of its competitors?

Nintendo was able to profit from high performance low - price consoles because the company built up an elaborate mechanism composed of several factors. The outline of the mechanism follows.

5-1. Cost reduction by a bulk order

Family Computer's high performance was achieved by means of a new integrated circuit (IC), ideally suited for image processing. Nintendo succeeded in developing this IC itself.

But this innovation, significant though it was, still was not enough to build up the compatibility between the performance and the price. Nintendo did not own an IC factory, so Nintendo had to entrust the production of the IC to another company. Nintendo selected Rico for its supplier of the IC, and requested Rico to cut the price of the IC. Rico assented because Nintendo allegedly guaranteed it a bulk order, three million IC chips, within the

¹⁰ Kikawa (1993)

¹¹ Baba (1993), pp.87-90, Kikawa (1993)

¹² Baba (1993), p.88

first two years.¹³

5-2. Few model changes

At the same time, Nintendo seems have intended to retain the console model design in the long term. Nintendo tried to sell the same model of console as long as possible. Thus could Nintendo order a large amount of a single IC from Rico, as we mentioned above. In the end, Nintendo sold the 8-bit model for seven years.

The strategy of few model changes also meant that Nintendo did not consider that cutting-edge technology was necessary for the home videogame console market; Nintendo could design the product using the conventional technologies thus reducing the cost of console. ¹⁴

5-3. Donkey Kong

We next consider how Nintendo could count on high-volume sales of its consoles in spite of retaining console design for years. Generally many companies change their product models frequently, in order to encourage people to purchase their products and generate sales volume. But there is another way companies can encourage people: by improving the appeal of its software. If software could support the hardware sales, companies benefits greatly by not having to change product models in the short term.

As mentioned above, Nintendo already owned "killer" software, "Donkey Kong". Converting this very popular software from amusement arcades to the home videogame, Nintendo could prepare a strong eye-catcher to people. The software could be expected to produce bulk sales of videogame consoles.¹⁵

5-4. Definite and specialized functions

Furthermore, in order to achieve high performance at a low price, Nintendo restricted its console's functions. Nintendo designed a console with superior image processing capability, but restricted all other console functions.¹⁶

A home videogame console is like a small computer. So videogame makers are able to utilize the console in various ways. Bringing various functions into the console, a company

¹³ Baba (1993), p.87, Kikawa (1993), Sheff (1993), p.32

¹⁴ Kohashi (1998)

¹⁵ Baba (1993), pp.80-84, Kikawa (1993), Sheff (1993), pp.46-49, Fujikawa (1999)

¹⁶ Sheff (1993), p.33, Kohashi (1998)

could increase its appeal. But once the company adopted this model, the console tended to be a high-priced product or lose its quality in its central functions.

Nintendo, on the other hand, restricted the functions of consoles. Nintendo must have calculated that the home videogame's appeal would be generated not only by hardware but also, perhaps predominantly, by software. Hence Nintendo could abandon certain functions of the console without threatening its success in the market.

5-5. Relationships to the distributors

We should also comment on Nintendo's relationships to its distributors. Nintendo reduced its distribution costs too, further supporting the low price strategy.

Nintendo had been distributing toy merchandise a long time. They had built up long-term close relationships with dozens of toy wholesalers. In 1982, sixty wholesalers had formed an association called "Shoshin Kai". Through these wholesalers, Nintendo sold its products at 20,000 toy retailers' shops nationwide.¹⁷

Nintendo used this association to sell at a narrow margin. But the narrow margin was not only a threat but also an opportunity for distributors. Nintendo asked the distributors for their cooperation, telling them that once the console became popular, they would be able to earn a great deal from the software market that would naturally follow.¹⁸

Distributors seem to have trusted Nintendo's prediction, since Nintendo had already achieved a good track record in long-term relationships. It is clear, however, that without the console/software unified strategy, distributors would not have accepted the Nintendo's narrow-margin business proposal.¹⁹

17 Kikawa (1993), Kohashi (1998), Fujikawa (1999)

18 Baba (1993), pp.87-88, Sheff (1993), pp.34-35

19 When Nintendo started the business of Family Computer, it was impossible for Nintendo to cover large parts of its value chains by itself. Indeed some companies are integrating a large portion of value chains. For example some Japanese major electronics companies, such as Matsushita or Sharp, produce many electronic components by themselves. These integrations form their advantages. Generally speaking, vertical integrations bring a company some advantages as below.

- ① Synchronizing productions with distributions, sales, and procurements, the company can equate the rates of operations, reduce the inventories, decline the opportunity losses and cut the transportation costs.
- ② If the company became to supply components or services to the other companies in the same industry, it could be superior them in the cost.
- ③ Expanding the domain of technologies to upstream and downstream directions, the company could enhance the ability to develop original products and services.

However, companies need a lot of fund to facilitate the integrations. If Nintendo launched the

6. Coordination between the hardware and the software

As outlined above, Nintendo succeeded in exploiting the possibilities arising from hardware / software.

Hiroshi Yamauchi, president of Nintendo at that time, commented that the key to the home videogame business was the hardware / software coordination. Recalling those days, he pointed out that the core of his business was “how to create the new entertainment market, and how to make close alliances with the leading companies able to provide high-performance / low-price merchandise”.

Recently, many companies have come to emphasize the importance of software as well as hardware. However, for Mr. Yamauchi, “coordination” meant not only emphasizing both, but also fundamentally changing the relationships between hardware producers and software producers by designing the reciprocal spiral process.²⁰

7. Sustainability of the business system

Nintendo introduced a new invented mechanism of marketing to the home videogame industry. It redefined this business by focusing not only on hardware but software. This new business definition was immediately successful; but (as discussed below) its real worth was later proven.

Family Computer achieved great demand immediately upon release. Its success was due to the console's excellent graphics performance and low price, in turn enabled by the good coordination between the hardware and the software.

In most cases, however, this kind of approach seems to be short-lived, thus threatening the long-term profit goals. For example, after 9/11, many retailers became concerned about

production of electronics, the development of software and the operation of distribution, by itself, a large amount of money should be needed.

In addition, Nintendo's scale and scope of business had not been as wide as the major electronics companies. If Nintendo pushed forward the vertical integrations, Nintendo should acquire more markets (demands) to secure the rate of operation of these productions and distributions. Nintendo might be forced to launch further new businesses.

Nintendo could not adopt the same strategy which was suitable for the major electronics companies. These companies had acquired huge resources and realized the highly integrated organizations. Although the degree of integrations had been low, Nintendo could build up good relationships with its suppliers and distributors, and formed unique advantages.

This Nintendo's choice was relevant to its resources. An optimal strategy depends on whether the organization is highly integrated or not.

²⁰ Yamauchi (1993)

consumption decline. One of the largest “general supermarket” chains in Japan, Ito-Yokado, released new suits at competitive prices, \$67, in October 2001 (In Japan most of the major supermarket chains merchandise clothes as well as foods. This type of mixed store is called “general supermarket” in Japan). Ordinarily, these kinds of suits sold at \$250 at that time. Ito-Yokado actualized the plan by ordering a single huge volume from the foreign factory. It was a successful venture, and sold 110,000 suits in five days.

In this case, Ito-Yokado reached the ideal of high performance (quality) and low price by redefining the premised assumption, order volume. At this point, Ito-Yokado’s case looks like Nintendo’s. But Ito-Yokado soon encountered difficulties. Four weeks later, Ito-Yokado tried the same strategy again, but customers did not rush to buy them as before.²¹

Many companies meet with similar difficulties of mass-production or mass-order at this stage. McDonald’s Japan, as we mentioned above, profited by the low price strategy. However, the effect of low price didn’t last for a long time. Its sales declined from \$2.965 billion in 2001 to \$2.629 billion in 2002 and \$2.458 billion in 2003. And its recurring profits declined from \$155 million in 2001 to \$17 million in 2002 and \$16 million in 2003.²²

The effect of high performance - low price tends to be short-lived. This is a critical limitation of the marketing program based on mass-production or mass-order.

8. Supply of entertainment software

It is, however, possible for companies to overcome this limitation of the mass-production / mass-order approach. If the company could identify new products for mass-production or mass-order, the limitation would disappear. Thus many companies attempt to shorten the cycle of product model changes. But as mentioned above, shortening the duration of each model adversely impacts the advantages of the mass-production / mass-order approach.

Nintendo didn’t intend to shorten the shelf life of its hardware; rather, Nintendo solved the problem by introducing new software in rapid succession.

As mentioned above, Nintendo already had expertise developing high-quality entertainment videogame software, “Donkey Kong” being the most salient case in point. After releasing Family Computer, Nintendo developed much more entertainment software,

²¹ Katsumi (2002),p.144

²² McDonald’s Holdings Japan Home Page & McDonald’s Japan Home Page.

The 2001 foreign exchange rate, ¥122 / U.S. \$, has been applied to all figures for the sake of uniform comparison. Federal Reserve Statistics Release Home Page

for example “Super Mario Brothers”.²³

Generally the risks were high in the videogame software market. It was very difficult to predict the sales of new software before release. Of course, if once companies succeeded, they could sell millions of copies of software, but such cases were very rare.²⁴

Nintendo’s position was very favorable in this situation, however. Its popular arcade software was easy to convert to Family Computer use. Nintendo took advantage of preexisting name recognition from the arcade market and capitalized enormously on it when the market moved to the home.

9. Regulations to the software houses

Although at the beginning Nintendo alone provided all software for the Family Computer, after Family Computer took off successfully, Nintendo began to accept outside developers for the development of additional software. But Nintendo was cautious. Nintendo did not allow every software houses to develop software for Family Computer. Only companies which followed guidelines set down by Nintendo were permitted to develop new software.

Nintendo imposed the regulations below upon software developers²⁵. Strictly speaking, the regulations were different depending on the exact timing of the software; the following set of guidelines may be considered typical.

Limitation on the number of titles released per year: The number of software titles the software house was allowed to release was limited to no more than three to five per year.

Compulsory production assignments to Nintendo: Software houses should assign videogame cartridge productions to Nintendo and pay an assignment fee. The fee was \$28 per cartridge. The production cost of cartridges was \$16, and Nintendo took the rest of the fee as its share. Furthermore, software houses were required to buy out all cartridges produced by Nintendo.

Fixed lowest volume of production: In assigning the production, software houses were required to order the lowest volume possible. At the beginning the lowest volume of

²³ Baba (1993), pp.102-103, Kikawa (1993)

²⁴ Kikawa (1993), Kohashi (1998), Yamauchi (1993)

²⁵ Baba (1993), pp.93-102, Kikawa (1993), Sheff (1993), p.214-215, Kohashi (1998), Fujikawa (1999)

production was 10,000 cartridges. Later, the lowest volume was reduced to 5,000.

Compulsory quality checks by Nintendo: Nintendo required quality checks two times over the course of software development: first at the planning stage, second after completion. Nintendo also checked the suitability of the software for home use, especially by young children, and tested the operational ability of the software on the console.²⁶

²⁶ Two opposite minds coexist in human beings. On one hand we are eagerly looking for the chance to evolve ourselves. On the other hand we love to be idle.

One advantage of the market mechanism is that it enhances people's spontaneous eagerness for the evolution and suppresses their idleness. These are the effects of competition in the market.

However, the market doesn't guarantee a wholesome effects of competition at all times. If a company doesn't have to disclose all disadvantage of its products or services, the company can outwit the trading partners and exploit them in the market, seizing an opportunities (opportunism).

For example, as the products or the services being complex, it becomes difficult to explain all attributes of them to the trading partners. They learn the quality of those products and services, after they procured and used them. However, the company has already collected the charges at this time. The home videogame software is this type of product. A cruising taxi is the same type of service too.

In order to deter this opportunistic behavior, some monitoring function must be built in the market. Brand is one of the valid monitoring tools in the market. A people who bought a product of poor quality, will never buy not only the same product but also the same brand products. To avert such a matter, companies try to keep the quality of their products and services. Especially if the companies strive to sell a large number of products or services attaching same brands to them, this deterrent effect on opportunism works better.

However, this mechanism can deter the opportunism only in a specific condition. In order to work this mechanism well, there must be some alternatives to the brand, and people must have some experiences on the brand, when they try to procure it.

For example, when you hail a cruising taxi at the street, there is no choice. Another example is the former home videogame software market. There were too many small software houses, and then people should procure unaccustomed brands one after another. In such conditions, we can't expect much on brands to work as deterrent to opportunistic behavior.

Regarding the deterrent effects on opportunism, also, the role of distributors is important. Usually distributors have better ability to monitor the quality of merchandize than end users. If this function works well, the opportunistic behaviors in the market will decline. But in new generating markets, as the former home videogame software market, this function sometimes doesn't work well, because distributors also have not acquired enough knowledge yet.

These conditions sometimes shrink the markets. Now, what can a company do, in launching into such a market? One of the solutions was the regulations which Nintendo imposed on the software houses. Limitation for the number of releasing titles per year, compulsory production entrustments to Nintendo, fixed lowest volume of production, and compulsory quality checks by Nintendo must have worked as deterrents for the software houses to commit the opportunistic behavior.

Certainly these were prescriptions in a particular occasion. If the conditions were different, the prescriptions must have been rewritten. We should check not only "What Nintendo did", but also "Why Nintendo did so".

10. Why did Nintendo impose such a strict rules?

As seen above, Nintendo imposed strict guidelines on software houses trying to develop new software for Family Computer. But Family Computer consoles were soon so widely available that it was possible for software houses to project sales of over 1 million units. In addition, companies could develop videogame software with a relatively small staff. So many companies began to develop software for Family Computer, with the dream of making a fortune at one stroke. Some software houses, such as Hudson and Namco, grew their business through high volume sales of software for Family Computer.

But software houses had no guarantee of success. Their risk level was high; on the contrary, Nintendo's was low, because Nintendo could get the production assignment fees regardless of the software sales. Nintendo was criticized for being "exclusive" or "getting easy pickings".

Yet in spite of the criticism, Nintendo did not abolish the strict policy. The reason seems to be that Nintendo learned a lesson from "Atari Shock".

As mentioned above, Atari 2600 was the home videogame console precedent to Family Computer. Atari 2600 was successful in the U.S. six years before Family Computer was marketed. But when Nintendo began to introduce Family Computer, the market built by Atari began to collapse.

Atari did not impose strict rules on the software houses; as the consoles spread, many software houses started to develop new products for Atari 2600, without critical quality-control oversight. A number of software developers produced inferior software, and as a result the market was flooded with poor quality software, thus losing customer trust.

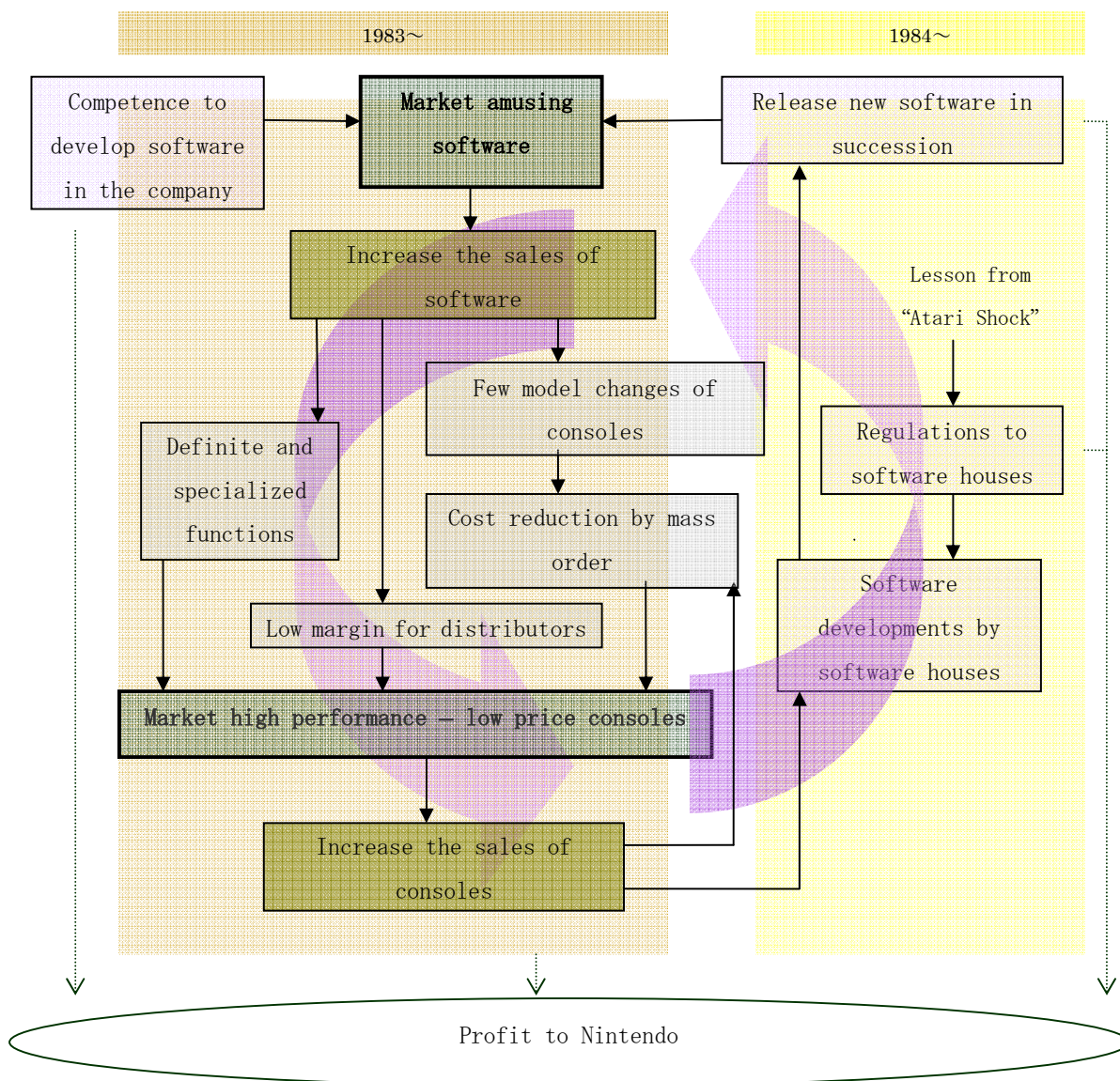
Nintendo seems to have retained customer satisfaction as a high priority, and therefore excluded software houses prone to inferior software production. By learning from the bad experience of Atari, Nintendo could avoid the risk of losing their market.²⁷

11. Reciprocal circulation between hardware and software

The relationships Nintendo built with its suppliers and distributors resulted in great success. Several million-seller software titles, such as "Dragon Quest" and "Final Fantasy", were born against the background of the widely distributed consoles. At the same time, the public's fascination with the software increased the consoles sales even more.

²⁷ Baba (1993), pp.91-92, Kikawa (1993), Kohashi (1998), Fujikawa (1999)

Figure 2 Design of reciprocal circulations between hardware and software



Attractive software enhanced the consoles sales, and the large numbers of consoles which had been sold encouraged the developments of attractive software. Nintendo enabled this positive feedback loop by designing the relationships with its outsiders, such as software houses, component suppliers and distributors (Figure 2). This positive spiral

continued until approximately 1992, and Nintendo expanded its revenue.

We can note two critical points of success of Family Computer in its early stages. First, the chains of interaction were important to make the positive spiral and they came from the coordination of the relationships with software houses, component suppliers, and distributors. Each relationship was a critical factor in the success of Family Computer, and the design for the coordination of the relationships was crucial. Selecting its partners, preparing incentives to them, and designing regulation for them, Nintendo had built up relationships and constructed the positive spiral.

Second, Nintendo had constructed the spiral, step by step. Nintendo not only built a framework which enabled the low-price high-profit business, but also kept adding new elements which enhance the potential for increasing the profitability of this framework, in the continually changing process of its business.

At the first phase of its marketing, Nintendo built up relationships with suppliers and distributors of videogame consoles, in order to market its high-performance low price consoles and increase the sales of them. At this phase, soft ware was one of the critical factors of success, and Nintendo supply the soft ware by itself. It seems difficult to have corroborated with soft ware houses under the control of Nintendo at this phase. Fortunately Nintendo had very popular soft ware of amusement arcades and could convert it to the home videogame.

After succeeding at this first phase, Nintendo changed its policy on supplying soft ware by itself. Once its consoles had been disseminated widely, it seems easier to have let outside soft ware houses to develop new attractive videogames under the strict regulations. And sequential input of new attractive soft ware was crucial in increasing the sales of Family Computer.

We can mention that companies should keep building their strategies in their changing situations. Companies build their strategy based on their environments. But the implementation of the strategy often changes the environments, as the Nintendo's case. Companies should catch these changes rapidly, and rebuild its strategy. Through this sequential process, Nintendo constructed the reciprocal circulation of marketing.

However, every mechanism has some disadvantages. This reciprocal circulation which supported the growth of Family Computer was not sustainable beyond 1992. Over time the strict rules which Nintendo imposed on the software houses became burdens too heavy to bear, especially for small companies. Discontent spread among the software houses. And

Nintendo did not take the risk of software overstock seriously enough. So overproductions of software, drops in prices and tie-in sales frequently occurred. ²⁸

Over the course of time, technological innovations changed the conditions of the home videogame industry. In the middle of 1990s, it became easier to use CD-ROM technology and information networking systems. CD-ROM was superior in the production cost to the cartridge, and yielded higher margins to the software houses. Enhanced information networking systems enabled factory production to be directly linked with store sales. These changes triggered the reorganization of the home videogame business. ²⁹

But it was not Nintendo which led this new generation of the home videogame industry. Sony's "Play Station" won the new market of 32/64-bit machines. Nintendo had to fight for another market once again, and succeeded in the portable gaming market.

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²⁸ Baba (1993), pp.95-109, Sheff (1993), p.70, Fujikawa (1999)

²⁹ Fujikawa (1999)

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