

STUDY ON HOW TO OVERCOME BUSINESS DEATH VALLEY UTILIZING SOFT CONCEPTION ABILITY KANSEI ENGINEERING HAS SOME ABILITY TO GROW UP COMPANY

Mikio FUJITO*, Yasufumi MORINAGA****, Yoji KITANI*,
Noboru KOYAMA***, Keiichiro KAWARABAYASHI**,
Mikio YAMASHITA*, Kazuko SAKAMOTO*

* *Kyoto Institute of Technology,*

** *Shizuoka University of Art and Culture,*

*** *Advanced Institute of Industrial Technology,*

**** *Hokkai-Gakuen University*

ABSTRACT

In the middle of the recent economic crisis that is the worst in a century, it is well known that sales and profits are lower than those of previous year in most companies. However, a few companies such as UNIQLO, McDonald's, and Nintendo are increasing its sales.

How these companies can increase its profitability? I dealt with Nintendo that increases sales of its game consoles and SONY that is struggling and compared each other from the viewpoint of the product development environment based on the Kansei engineering and sought the cause. The items subject to the comparison are items that are grasped quantitatively, such as in-house cultures, ideals and goals of the company, management practices, project goals, backgrounds and in-house histories of those engaged in the business, development periods, and the number of people as well as parts that are concerned with sensitivity (qualitative items) that are extracted from interviews. Consequently, it has been proven that Nintendo as an organization put more emphasis on aesthetic aspects than on digital aspects in the development stage. Also, it turned out that people in our age require aesthetic things with good timing. It seems that these backgrounds led to the development and the success of Wii, etc. Though I cannot conclude only from this case that the sensitivity-oriented development always brings good results, I feel transit of the age and trend simply because it was proven that the product produced by such development is accepted by the market. The detailed research is reported in the body.

Keywords: *Development stage, Kansei (sensitive) engineering, certain size, Soft conception*

1:INTRODUCTION

It seems that the recent economic recession is changing the way many companies think. We are at a big crossroad, indicated by the collapse of GM and Chrysler and the inverse integration between Porsche and VW. In the Japanese market, Nintendo's games have exceeded Sony's counterparts in their concept, UNIQLO is enjoying "the Winner Takes It All" and MacDonald is putting up a good fight. The market is clearly showing a great change. Change in the market can mean change in the consumer mind. Newspapers or magazines are reporting conspicuous preference for something "green" and an increase among young people who lead a simple life, not buying things.

In such circumstances, Nintendo's Wii is surpassing Sony's Play Station, thanks to the former's different concept from the past ones. This report observes these two contrasting companies from the viewpoints of the management, product planning and development, examines what kinds of events are happening at those companies and shows what kind of development structure and management is necessary in order to be accepted by the market. Furthermore, the distinction between the two companies is not simply limited to their differing development structures but has also come to highlight an issue faced by a company which is at its growth stage. This finding will be linked to the following descriptions of the research and the conclusion of the report.

2. Play Station (PS) and Wii GAME

In terms of the market evaluations, Nintendo's Wii has been a clear-cut winner, defeating Sony's Play Station. Although Wii is much inferior in capabilities to its rival, it is a user-friendly device for everyone just because of its less advanced capabilities. In addition, by incorporating into Wii' operation method, its unique, new and proactive movements of the whole body which have not been seen in any other traditional games, an active participation of its user's body is effectively encouraged, besides the conventional method operated only with hands. The following descriptions are the details of the two games:

2-1. Play Station (PS)

As for Play Station 3, the biggest characteristic of its hardware capabilities is the architecture specializing in 3D polygon drawing. Play Station 3, loaded with geometri engine for calculation of polygon apexes and change of coordinates and equipped in its hardware, with a function of transferring polygons and texture mapped polygons to frame buffer, succeeded in bringing out remarkably higher capabilities than personal computers and game consoles in those days, which often made all these calculations processed by software (imposing a vast amount of calculations on CPUs). It can be said that Play Station 3 is a hardware specializing in processing 3D polygons. The game series was successful up to Play Station 2, but the capabilities of Play Station 3 became so advanced that it was defeated in the market evaluations and sales by Wii, whose reverse thinking presented the participation type and utilization of the user's whole body.(Figure 1)

2-2. Wii

Wii is Nintendo's fifth standalone home game console whose big characteristics are realization of an intuitive operation with Wii Remote controller connected via wireless communications, loading of contents outside for computer games and useful for daily life and

Wii's unique services/functions using internet. Wii reached 20 million units in cumulative global sales in about 60 weeks since the initial release.



Figure 1: SONY Play-station 3



Figure 2: NINTENDO Wii

The release dates for home game consoles in Japan, the U.S. and Europe vary depending on each game machine type, rendering any simple comparison among such consoles impossible. However, the sales record of Wii is the fastest, surpassing those of the other historical home game consoles, GAMEBOY ADVANCE (75 weeks), Nintendo DS (about 80 weeks) and Play Station 2 (about 95 weeks). As for the sale of 30 million units worldwide, Wii achieved it in 1 year and 8 months after the initial release, whose record is also the fastest, overtaking PS2's record of 2 years and 2 months. Afterwards, Wii's shipment volume reached 50 million units in 2 years and 5 months after the initial release, also surpassing the record of PS2. Author made the Figure(Figure 3) about the number of initial term of Play-station 3 and Wii.

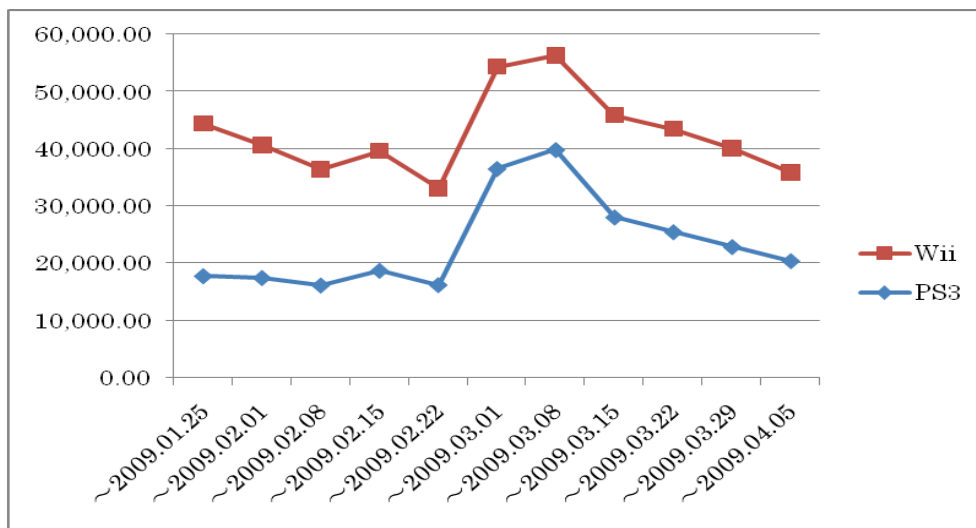


Figure 3: Comparison of sales between Play Station and Wii [3]

A wide range of user groups who own Wii is another characteristic. Especially, its ownership rate is high among what is called “a family group”, those in their early teens or less and in their 30s and 40s; and the gender ratio is nearly 1:1. A significant factor for such distinction is the smash hits of software targeted for families, such as “Wii Sports” and “Wii Fit” (these sales both exceeded 3 million units). As a result, about 87% of Wii users set the machine up in their living rooms. Wii has gained a victory over PS3, too. For your comparison, the product characteristics of Play Station and Wii are shown in Table 1 below:

Table 1: Product Characteristics of Play Station and Wii [1] [2]

	Play Station 3	Wii
Operability	User operates it with both hands, while sitting. No change from conventional devices	User operates it in every posture. Dramatic change in operating environment from conventional devices
Price	Standard price: 45,000 yen	Standard price: 25,000 yen
Concept	Higher capabilities of conventional devices. Enjoyed by a small number of people. More professional use	A game device for participation of everyone, young and old
Function	Its screen image has been evolved to the extent that it cannot be distinguished from the actual image	People around the user can participate in the game. A break from traditional notions, the device and the screen change in accordance with the movements of the user
Design	An extension of conventional shapes, but more evolved	The shape denies the extension of conventional shapes. Oblong and fitted with arm movements
Quality	Excellent quality	Excellent quality

2-1. Actual sales results and market evaluations of Play Station and Wii

Next figure(Figure 4) shows market evaluation which is organized in online and for people whose are in Japan and Europe from Aug. 13, 2009 through Aug. 16, 2009. [4]

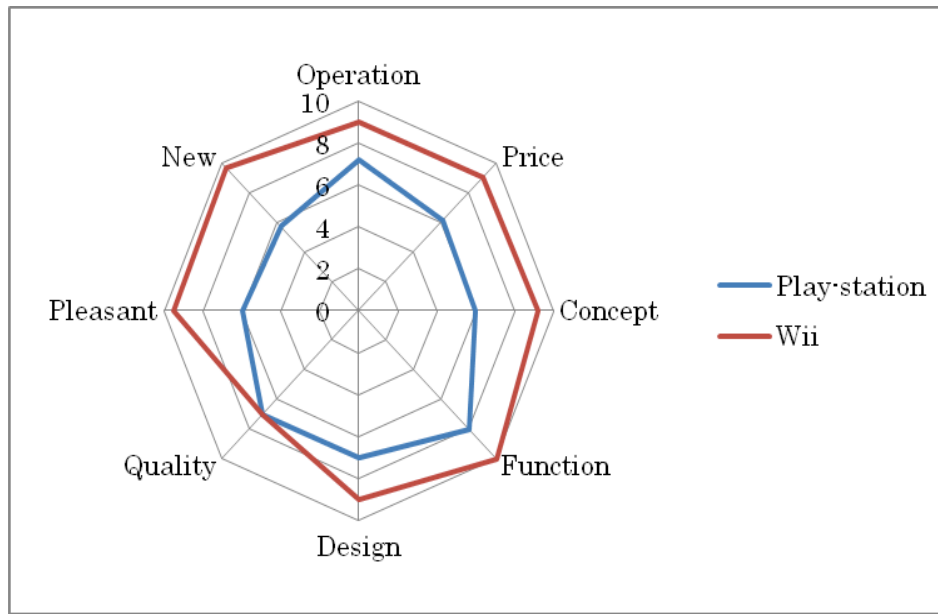


Figure 4: Comparison of market evaluations between Play Station and Wii

3. Comparison between Play Station and Wii in terms of development stance (from both aspects of hardware and software)

In what kind of development stance, were those two product characteristics made into respective products? Based on interviews and books, the answers to this question are shown in Table 2 and Table 3 below:

3-1. Development stance, slogans and goals in developing Play Station

Table 2: Development Stance, Slogans and Goals in Developing Play Station [2] [6]

<p><u>Goals as the game business</u></p> <p>In the game business, a new growth should be ensured by putting efforts into the two domains of contents and services outside the games and “network”. In addition, a figure in the black for the fiscal year 2008 should be expected through expanding the lineup of “Play Station 3”(PS3) game software and reducing the costs of the main body of PS3 hardware. The important measures of the game business are as follows:</p> <ol style="list-style-type: none"> 1. Further improvements of contents and services on network platform 2. Further diffusion of PS3®, by making use of the strength of Blue-ray Disc 3. Releases of attractive game software to accelerate the diffusion of PS3 4. Further promotion of measures for reducing the costs of PS3
<p>Slogans and comments of the developers</p> <p>Thorough change in freshness of images</p> <p>Enjoyment of navigation feeling</p> <p>Pursuit of real feel</p> <p>Overwhelming sound quality</p>

Professional specifications
 Possible emphasis on Impractical planning
 Single-mindedness of the course of higher capabilities

The above table suggests that SONY earnestly pursued such high specifications as would overpower its competitors. This policy was intensely promoted by logic and aggressiveness of Mr. Kutaragi, the then Sony Computer Entertainment. The company achieved its overwhelming capabilities. One can say that it produced the game device whose automotive equivalent is like Ferrari or Porsche. However, would such high-performance sports car be widely used among general households? Surely, after the commercialization of those cars, the answer became clear: they were very far apart from the market needs. The superior high-end device may have been targeted for a small number of innovative consumers as a luxury brand.

3-2: Development stance, slogans and goals in developing Wii

The following table shows slogans shared by Nintendo Wii's development team in its development stage, which is based on comments by Mr. Iwata, in charge of developing Wii as well as interviews, books and websites.

Table 3: Slogans Shared by Nintendo Wii's Development Team in Development Stage
 [1] [5] [7]

1 FOR Wii Hardware:

- No. 1: "The latest technology for an unprecedented usage"
- No. 2: "Design not hated by anyone"
- No. 3: "Crystal-clear goal did make Wii possible"

2 FOR Wii Remote Control:

- No. 1: "Even the idea of holding with both hands can be undone"
- No. 2: "The premise is that everyone can touch it equally"
- No. 3: "This will become a new standard"

3 FOR Wii Channels:

- No. 1: "To make sure the whole family will explore the channels"
- No. 3: "Wii is a public space for a family"
- No. 5: "The act of viewing digital photos on TV is refreshing itself"
- No. 6: "The feeling of making influences on one another"

4 FOR "Wii Sports":

- No. 3: "Make a gesture as if to toss the ball up, with the left hand which doesn't hold the remote control"
- No. 4: "Not only the player but also the watchers can have a good time"

5 FOR "The Legend of Zelda: Twilight Princess"

- No. 1: "Typical 'Zelda', which is not verbalized"
- No. 2: "Concept generation from the functional aspect"
- No. 3: "In a similar manner of kneading clay"
- No. 4: "All the team members are conscious of typical 'Zelda'"
- No. 5: "For 120% 'Zelda'"
- No. 6: "Once compiled together inside, the story will finally become consistent"
- No. 7: "After a long absence, back in a nearly player position, intensively"
- No. 9: "The fact that both exist at the same time should be good for both"

6 FOR "Odoru Made In Wario"

- No. 1: "With one remote control alone, everything is possible!"
- No. 2: "'Nonsense' is the best praise"
- No. 3: "Want to let the watchers say, 'Let me use this for a while'"
- No. 4: "Put smiles on the faces of everyone surrounding it"

3-3. Comparison of development structure

Considering their spirits in developing the products shown above, it is clear that SONY leaned toward software, while Nintendo toward software (with an approach based on sensitivity engineering). Although there is not so much difference in man-hours and periods of the developments, their difference is indicated in their development stance and developers' career backgrounds (refer to [1][2][6][7]). In addition, SONY's company-wide philosophy and goals are no different from those of the other major companies. Comparison was made between both companies by extracting from the interviews, areas associated with sensitivity (qualitative items), as well as quantitatively visible items, such as their philosophies and goals, corporate structures, project goals, career backgrounds and internal backgrounds of those involved, development periods and man-hours.

Table 4: Comparison between Play Station and Wii in Development Periods, Man-Hours and Career Backgrounds of Developers [1] [2]

	Play Station	Wii
Development Period	Full-scale Development for about 3 years	The conception of Nigaoe Channel for 20 years; full-scale development for 3 years
Man-hour (Total)	642285.6 man-hours	532256.7 man-hours
Career Background of Developers	Emphasis on efficiency; software and hardware was developed separately in the full-scale development	Development with priority to software; integrated development of software and hardware

3-3-1. SONY' and Nintendo's companies-wide philosophy and goals

The differences between both products are examined and described as shown above. The following Table 5 and Table 6 should indicate the differences in their company-wide philosophies and development stance which are the backgrounds for the products. The development stance of Nintendo is more sensitive and puts more value on software, which can be said as development based on sensitive engineering.

Table 5: SONY's Company-wide Philosophy and Goals [6]

<p>[Philosophy] Under the catch copy of "LIKE NO OTHER", We will produce products like no other and become a company like no other.</p>
<p>[Goals] The goals of SONY as a whole SONY has identified a 5% operating margin as a baseline of profitability to generate cash to continue to grow and innovate. For the purpose of strengthening the effective use of the capital, we will establish ROIC (Return On Invested Capital) as the basic framework to evaluate investments and future M&As. SONY will also invest a total of 1.8 trillion yen by FY2010 to accelerate future growth and innovations. Furthermore, we will target an annual ROE (return on equity) of 10% by FY2010. SONY will secure our stable and high level of profitability while enhancing shareholder value. The business environment in which Sony operates is changing rapidly and, with the advance in digital technology and broadband networks, technological innovation is moving at a pace never experienced before. In order to be a leading company in the digital age, Sony aims to leverage its unique advantage of producing both hardware and content, continuing to offer cutting-edge products together with superior content and services to meet the needs and expectations of our customers.</p>

Table 6: Nintendo's Company-wide Philosophy, Goals, Corporate Structure and Development Stance/Structure [7]

<p>[Philosophy] Expansion of the gaming population Sticking to being a "game maker"; everything is for "letting people continue to touch game machines" "Entertainment fundamentalist"; "Desire devotion to Entertainment" What Nintendo should do is to focus on the area where it can show its strength best. Nintendo is extremely self-restraining toward any other domains than the game business; not engaged in superfluous things. We will focus on our core competence of video game business.</p>
<p>[Goals] In order to realize "the expansion of the gaming population, Nintendo is striving to "get people from all over the world, regardless of age, gender, language, cultural background or gaming experience, to embrace and enjoy video games as mode of entertainment". Nintendo will take on a challenge to use a new departure, such as offering services in public spaces using "Nintendo DS" and aim at developing a wide range of usage while leveraging high diffusion ratio</p>
<p>.With the diffusion of "Wii", we will promote change in position of game machines at home and also diffusion of our products by offering a varied and comprehensive lineup which can be enjoyed by game beginners and skillful gamers. We will expand fields to daily life more convenient by our proposal of a new trial represented by "Wil Fit" and internet connection. With "Nintendo DS" as a "machine to enrich the life of its owners", which proposes a wide range of usage pervading daily life and "Wii" as a "machine to put smiles on the faces of everyone surrounding it" to promote communication at family living rooms, we will strive for "the expansion of the gaming population" continuously so that those machines can exist in relation with each one of family members and continue with our new and unique challenges.</p>

[Corporate Structure]

Caesar management during the days of Former President Mr. Yamauchi, who ran the company with his "intuition" as a gambler.

The brave decisions Mr. Yamauchi made at each crossroad of the company, has made Nintendo what it is today.

From one charismatic leader to group management system — when Mr. Iwata replaced him as President

However, the spirit of "making sure to take up instant inspirations" has never changed.

Software means interesting contents, rules and systems.

Structure to produce sophisticated software; The company's software structure should be prioritized and "software's supremacy" should be held fast.

As for funds, the company has saved a certain amount of cash (currently over 1 trillion yen) to stick to its capital policy.

[Development Stance]

Pursuing play and fun through one's life; whenever any hints and seeds of ideas are found somewhere in daily life, those findings will be reflected in the games. Insatiable enquiring mind and sense of smell for play and fun.

In order to make games which are interesting, and also satisfying to customers, they work flexibly and play it by ear. Pervasion of Miyamoto-ism which "returns tea table", such as changes in products right before their release dates or cancellations of the releases.

The spirit of "return tea table" has established such system as will continue to produce high-quality software to the society, by eliminating "NG software".

It doesn't matter how many years the development takes. For example, Wii's Nigaoe Channel took nearly 20 years for its conception.

It is possible to change or cancel a product even if it is in the final stage of development. Trial productions are repeated and products are thrown away altogether at times.

[Development Structure]

There was collaboration between hardware developers and software developers; even staff that usually had nothing to do with software development joined in the development; collaboration among departments was very close.

4. Comparison between both companies (SONY and Nintendo) observed in the process of corporate growth and Discussions/Conclusion

By examining the result of the battle waged by SONY and Nintendo for their game devices

After comparing the results of examining SONY and Nintendo, it seems rash to argue that sensitive development is important, only by using the sales results and market evaluations of Play Station and Wii. Their difference seems to arise from their development stance due to their respective corporate size and corporate growth process.

The appearance of the current energetic Nintendo, by a curious coincidence, has a close resemblance to SONY in the past. Not only in this game machine (PS) but also in the audiovisual field, SONY was similarly outdone by iPod. In the case of television, again, SONY is having no other choice but to have an unfavorable battle with Panasonic and Sharp.(Figure 6)

It is said that the corporate philosophy for founding SONY was made by Mr. Ibuka, which is "Free and open-minded and enjoyable ideal factory". How about Nintendo, then? That should be to stick to being a "game maker"; everything is for "letting people continue to touch game machines"; "entertainment fundamentalist"; and to "desire devotion to entertainment". If these management philosophies of Nintendo, "entertainment fundamentalist" and to "desire devotion to entertainment" are replaced with phrases of the latest audiovisuals and IT, they are similar to those of SONY.

Apple's product philosophy, "Reduce the number of switches", may be suggestive, but it closely resembles SONY's product design philosophy at the time of the foundation, "Everything should be made as simple as possible".

The course of events and results shown above indicate the difficulty in steering and product development at a company which has a certain scale [SONY is used as the example in this report].

It is a well-known fact that GM typifies such a situation. Stubbornness on old successes caused its demise. The same is true of Panasonic at one time. Similar symptoms are also visible in Toyota, Nissan and Microsoft. When winners have grown to be large corporate entities, regression may begin. (Figures 6, 7 and 9). Likewise, in Nintendo and Apple, such regress may start, once they have reached a certain scale.

Then in December 2009 in Tokyo, we compared the difference between SONY and Nintendo in a scientific manner through questionnaires to 100 businessmen in the age of 20s to 60s. We showed them products of both companies made in 1990, 2000 and 2009 and asked if they feel each company is innovative, growing or stable, and strictly managed or not. (The result of Nintendo in 1990 is not shown.)

The results show that Nintendo is highly appreciated as innovative and growing, very much like SONY back in 1990. In recent years SONY seems to have shifted to a more strictly-managed and stabilized company. (Figure5)

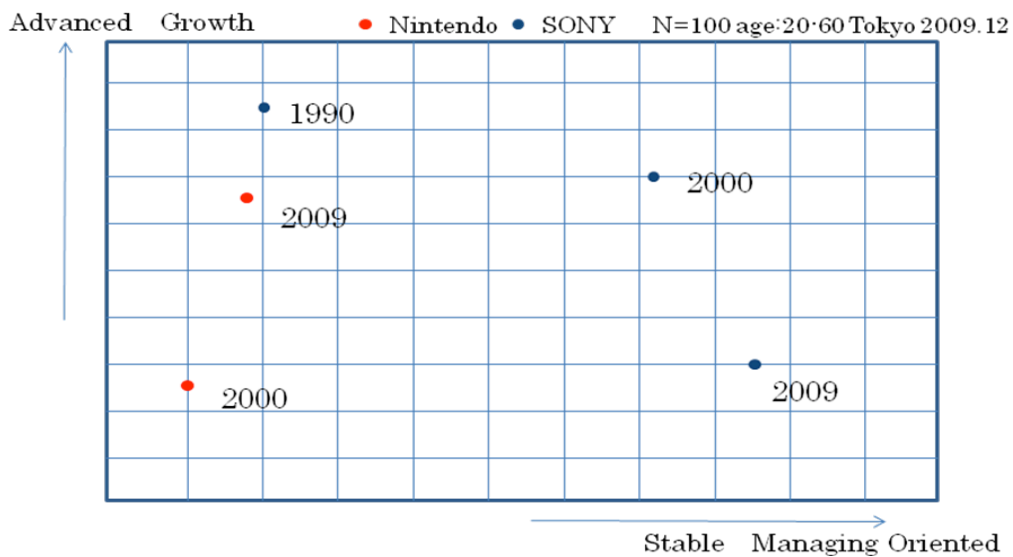


Figure 5: Reputation from market about SONY and Nintendo

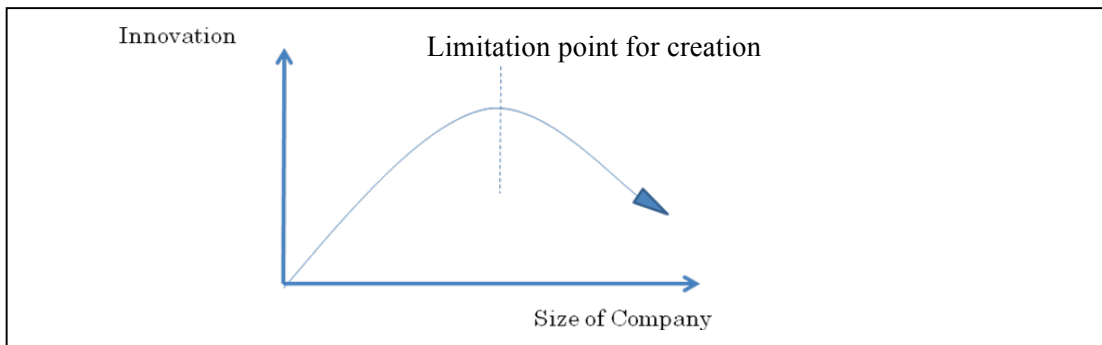


Figure 6: Relationship and Limitation between Corporate Scale and Innovations

What kinds of measures are necessary for SONY's revival? How its sensitive development will come to life again?

The following table (Table 7) shows how SONY looks back on its own management and reflection on its deteriorating business results (comments on their uphill battles in game machines, televisions and mobile Walkman).

Table 7: SONY Looks Back on Own Management [6]

- 1) What to protect and what to abandon? It is necessary to think whether the influence made by such selection, on our shareholders and staff, will be more positive or more negative.
- 2) I have pushed ahead with confidence to realize the bold concept of my own writing, but I may have looked only too far.
- 3) Oga: "Have we made the company too big? We have to grow the company with a manageable size".
- 3) Idei: We lost by a score of 8-7.
- 4) I can say nothing. However, the past top management has made products.
- 5) Older staff will persistently hope for the continuance of innovations, while newer staff will try to formulate disciplines that can freely move the huge body of SONY.
- 6) In order to make maximum use of the given assets and maximize the corporate value, we tried to restrain the entrepreneurial roughness, which we believed should be the innovation of SONY.
- 7) Our specialty and obsession of making products with its own technology, not an imitation of others, was derived by our rivals.
- 8) Stringer's strategy of assimilating groups for the new growth strategy fields, proved to be merely one mainly for cells units.
- 9) Stringer:
 - No motivation whatsoever to reorganize unprofitable departments
 - The transition period from the analog age to the digital age has passed and the technological innovations in the digital age will be further accelerated. The present SONY must make speedy decisions on what to choose among new things, in the generation change from old things to new.
- 10) Ihara:

With the company scale bigger, it has become physically impossible for the top management to take a careful look at each one of the products and point out what to be fixed and what is no good.
- 11) The father of Walkman, Mr. Takajo
 - There is an increasing number of cases where a merchandise concept is discussed at a meeting, and immediately thereafter such concept will be turned into merchandise,

which is frustrating.

- A certain business division, in its own earned profit, would secretly let some technological development be continued even the head office didn't know about. Such broad-mindedness SONY used to possess. □ illicitly brewed liquor

After this qualitative research, the author would like to conclude by proposing and suggesting the following to companies and the readers. That is, one way for a company which has grown to a certain size is, instead of enjoying its scale merit, the company should go back to the management size under which it developed its essentially innovative products.(Figure 6,7,9) That is, once at a certain size, the scale and management should go back to what it was for originally innovative conceptions.

If such way is taken (Figure 8), the possibility may not be denied that the overall direction of the company will be loosened and the power of the corporate behavior as a whole diluted. However, as long as the company faces the same direction in terms of the corporate philosophy that should be the origin of the corporate activities to determine what contributions the company should make in what way, such company as a corporate entity will not damage its thoughts and brand. A corporate entity composed of a conglomerate of numerous individual groups with a certain size and a shared philosophy may be the 21st Century type which takes sensitive engineering into consideration. (Figure 6) By setting as an agenda, scale threshold where corporate decline begins, the next research would like to examine and demonstrate the example of the corporate activities that are proposed by the author. The research and report this time has made the author realize how crucial the development based on sensitivity engineering is. I would like to thank for this opportunity. As the research expense for this study, Grant-in-Aid for Scientific Research (KAKENHI) for Study on how to overcome Business Death Valley utilizing Designer's Conception Ability was used. The author would also like to express appreciation for the support.

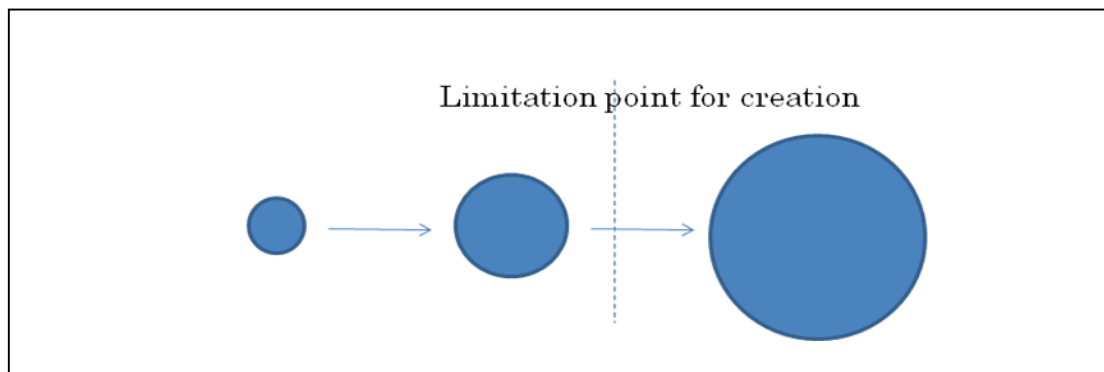


Figure 7: Corporate Scale and Scale Threshold

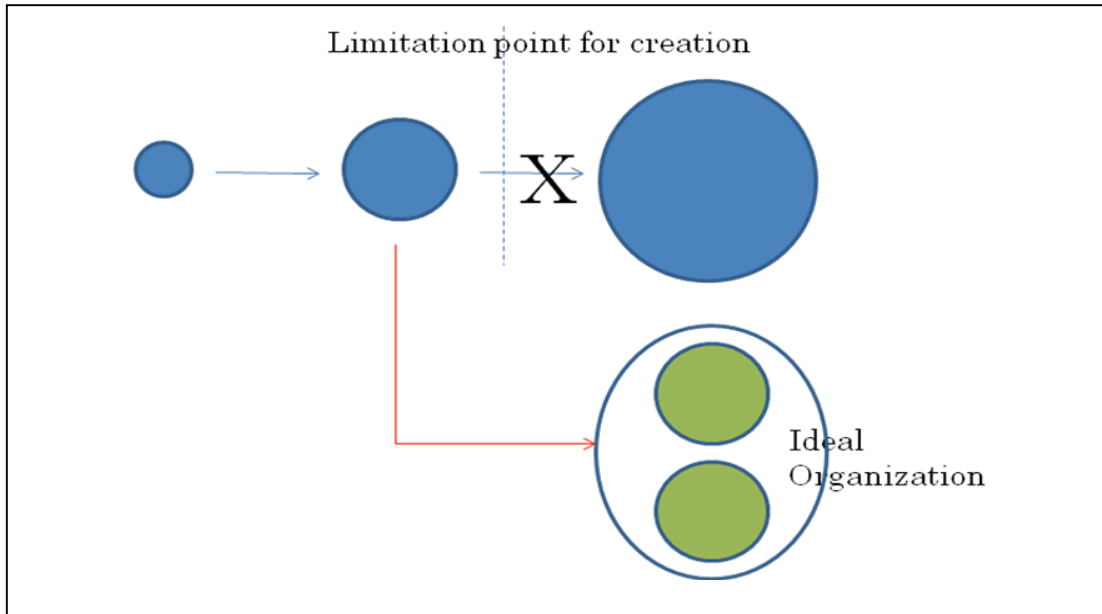


Figure 8: Concept of Corporate Scale Optimization

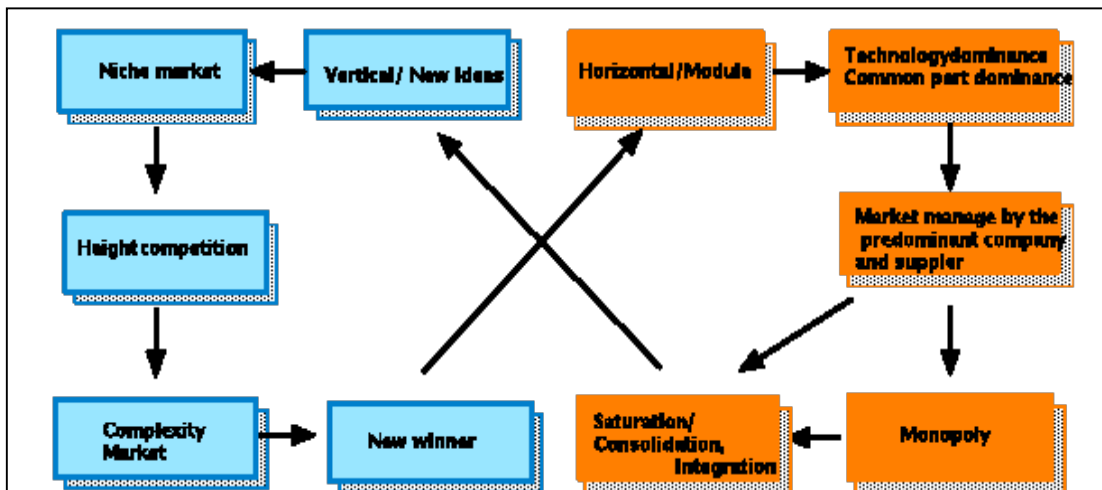


Figure 9: Corporate & Product Lifestyles [8]

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