

ORIGINAL ARTICLE

## A Study on the Relationship between “Managerial Decision Making” and “Factors Influencing Innovation Success” in Japanese Niche Top Firms

### Estudio sobre la relación entre la “toma de decisiones directivas” y los “factores que influyen en el éxito de la innovación” en las Empresas Japonesas de Nicho Superior

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#### ABSTRACT

In Japan, there is a niche top company in the mower category of the agricultural machinery market, Company O, which has continued to grow by creating a series of new products that did not exist in the market. In this study, we report the results of our research on Company O, a niche top company, and how they have controlled the factors that affect the growth of the company in the innovation process and how the management has been involved in controlling these factors in order to create innovation in their products and market growth. We report the results of our research and discussion on how managers have been involved in the control of these factors and in decision making.

**Keywords:** Niche Top; Innovation; Management; Decision.

#### RESUMEN

En Japón existe una empresa nicho top en la categoría de cortacésped del mercado de maquinaria agrícola, la Empresa O, que ha seguido creciendo mediante la creación de una serie de nuevos productos que no existían en el mercado. En este estudio, se informan los resultados de nuestra investigación sobre la Empresa O, una empresa líder en su nicho, y cómo han controlado los factores que afectan al crecimiento de la empresa en el proceso de innovación, así como la dirección empresarial se ha implicado en el control de estos factores para crear innovación en sus productos y crecer en el mercado. Por otra parte, se debate sobre no sólo en cómo han participado los directivos en el control de estos factores sino también en la toma de decisiones.

**Palabras clave:** Nicho Superior; Innovación; Gestión; Decisión.

#### INTRODUCTION

In Japan, there is a niche top company in the mower category of the agricultural machinery market, Company O, which has continued to grow continuously by creating a series of new products that did not exist in the market. The value of this company as well as the worth of its products are widely recognized by society, and it has established itself as a niche top company through successful innovation. A previous study<sup>(1)</sup> has provided a framework of factors in the innovation process of companies aiming for sustainable growth.

This previous study shows that the important factors to address for sustainable growth change throughout the product life cycle's growth stages, and that creating value is especially important during the product life cycle's creation phase. The four stages of the innovation process (Generating Value Stage, Communicating Value Stage, Creating Schemes to Achieve Value Stage, and Learning and Re-innovation Stage) assume that

management decision-making is taking place in a variety of ways. In the value creation stage, management decision-making contributes significantly to long-term growth. However, confirmation of this speculation has not yet been made.

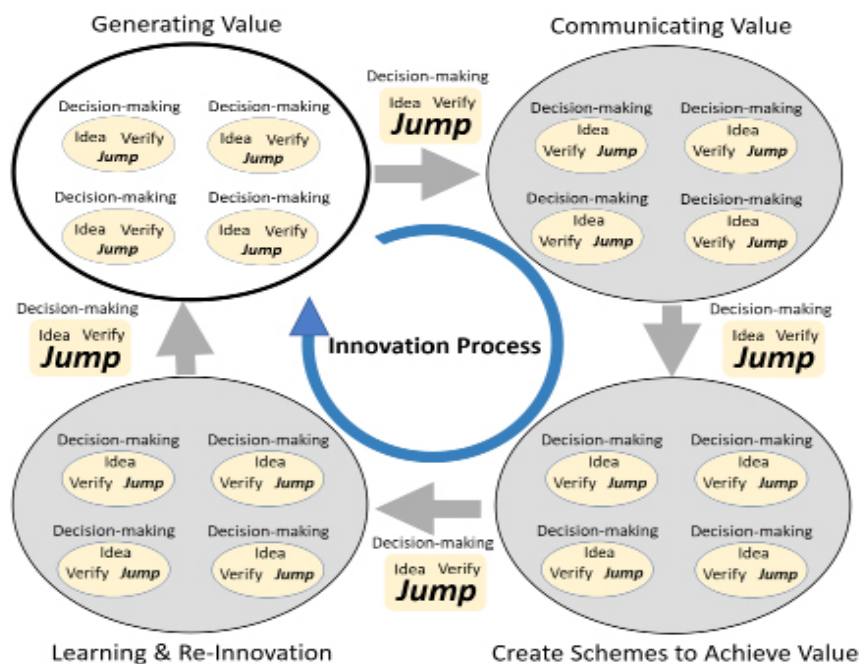
We surveyed the niche top company "O" in this study to determine how this company has controlled growth factors in the innovation process in order to generate innovation. We also assessed how the top management, specifically the president of Company O, has been involved in controlling growth factors and decision-making. This study reports the results of an examination of the hypothesis that managerial decision making contributes significantly to value creation during the value generation stage.

## METHODS

A slope mower, Company O's best-selling product, was surveyed in this study. The innovation process of the slope mower was examined using the framework of innovation process factors presented in a previous study.<sup>(1)</sup>

Interviews with the president were conducted to survey management (president) involvement in the innovation process factors. According to previous research, the basic structure of decision making consists of: have an idea, verify it, and jump into it (idea, verify and jump).<sup>(2)</sup> We attempted to survey and analyze the decision-making process by interviewing the management in accordance with the basic structure of decision-making in order to understand how the management made decisions during the "value generation" stage of the slope mower's innovation process.

In this paper, we propose a new conceptual diagram of the basic structure of decision making in the innovation process shown in figure 1. We hypothesize that management of decision-making plays a significant role in the Generating Value Stage of the innovation process. The flowchart for this study is shown in figure 2.



**Figure 1.** Conceptual diagram of the basic structure of decision-making in the innovation process

### *Survey of factors in the innovation process of Company O's main product (slope mower).*

We analyzed factors influencing company growth with a focus on the innovation process for a slope mower, the main product of a leading mower company, O. We used the Innovation Process Factors Framework,<sup>(6)</sup> to analyze the innovation process of slope mowers. The framework depicts the factors that influence the outcomes at each stage of the innovation process, with an emphasis on how to extract the specifics from the required factors. In the current study, the aforementioned framework consisted mainly of three stages: "Generating Value," "Communicating Value," and "Create Schemes to Achieve value."

However, we added a new "Learning and Re-innovation" stage because we believe that "Learning and Re-innovation" is not only related to the "Create Schemes to Achieve Value" stage, but also to the "Generating Value" and "Communicating Value" stages as well as being an innovation process with a wider scope. The survey was conducted to define the factors influencing corporate growth at each of the four stages: "Generating Value," "Communicating Value," "Create Schemes to Achieve Value," and "Learning and Re-innovation."

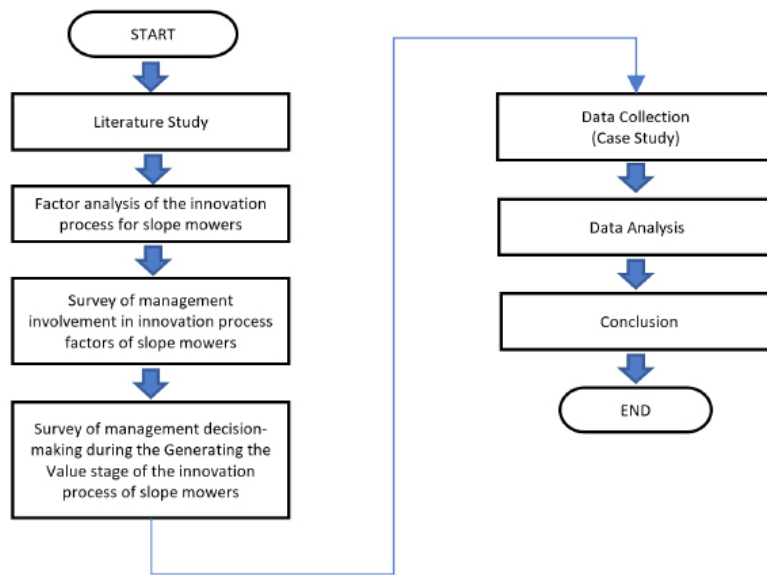


Figure 2. Research Flowchart

The research was based on the company history of Company O. Interviews were conducted with company representatives, management, and department managers to obtain detailed information. In the study of the value creation stage, we attempted to define the factors that influence each of the elements included in the "Generating Value" stage: (1) foresight and discoverability; (2) customer value; (3) market value; (4) social value; and (5) core technology. We also attempted to define the factors influencing corporate growth in the "Communicating Value" stage, the "Create Schemes to Achieve Value" stage, and the "Learning and Re-innovate" stage.

*Survey of management involvement in innovation process factors.*

We used the findings of the analysis of the innovation process of the slope mower developed in 2.1 and conducted interviews with the management in order to assess the involvement of the president of Company O in the factors of the innovation process of the slope mower, which is Company O's primary product. The survey of president involvement was conducted by the top manager himself/herself by selecting the options regarding management involvement in the factors of the innovation process presented in table 1. The points selected by the president are tabulated for each of the four stages of the innovation process ("Generating Value", "Communicating Value", "Create Schemes to Achieve Value" and "Learning and Re-innovation") and are shown in figure 2.

**Table 1.** Scale from Survey of Management Involvement in Innovation Process Factors

Alternatives	Point
Involved	5
Somewhat involved	4
Can't say either	3
Not much involved	2
Not Involved at all	1

*Survey of managerial decision-making in the "Generating Value" stage.*

The interviews with Company O's president were conducted to survey how the president made decisions during the "Generating Value" stage of the innovation process for Company O's main product, the slope mower. We surveyed whether managerial decision-making, structured by the basic decision-making structure of Idea, Verify, and Jump<sup>(7)</sup> was performed during the value-creating phase of the innovation process.

**DISCUSSION**

**Results of the survey of factors in the innovation process of Company O's main product (slope mower)**

Through this survey, we were able to define the innovation process factors for each of the four stages of the innovation process for the slope mower: "generating value", "communicating value", "creating schemes to

achieve value", and "learning and re-innovation".

**Generating Value Stage.**

1. Foresight and Discoverability: the existence of a mower allows you to work safely and securely on slopes. A completely new concept: a small, lightweight, low center of gravity, 4WD slope mower. In terms of foresight and discoverability, we believe that decisions were made that could have only been made by the management staff in particular.
2. Customer Value: the ability of farm workers to cut the grass on the slopes following the furrows in a safer and less labor-intensive manner than conventional methods is something that Company O's president would not have recognized as customer value if they had not paid attention to and interacted with their customers.
3. Market Value: create a series of slope mowers in order to address the various customer requests from across Japan and help more people with their slope mowing issues.
4. Social Value: the ability to use slope mowers by women and the elderly will result from further series development, helping to address the issues of aging and labor shortage in agriculture. The strong will of the management is at work in the product series development, indicating that the president's decision-making has a strong influence on the creation of market and social value.
5. Core Technology: Gearbox technology and development technology for ultra-compact four-wheel drive mowers.

**Communicating Value Stage.**

- They developed an ultra-compact four-wheel drive slope mower.
- The company pursued an unconventional approach to development, pushing the envelope to create a product with a super-customer-oriented, simple, lean structure, compact size, and unbreakable design.
- In addition, they expanded sales nationwide and fostered a development organization.

**Create Schemes to Achieve Value Stage.**

- Expansion of production capacity (improvement of production efficiency through dedicated assembly lines) and collaboration with OEM suppliers.
- Intellectual property defense through the acquisition of patents and other intellectual property rights,
- Acquisition of needs from OEM suppliers.
- Automatically operated slope mower with autonomous control (in collaboration with a university).
- Electric slope mower.

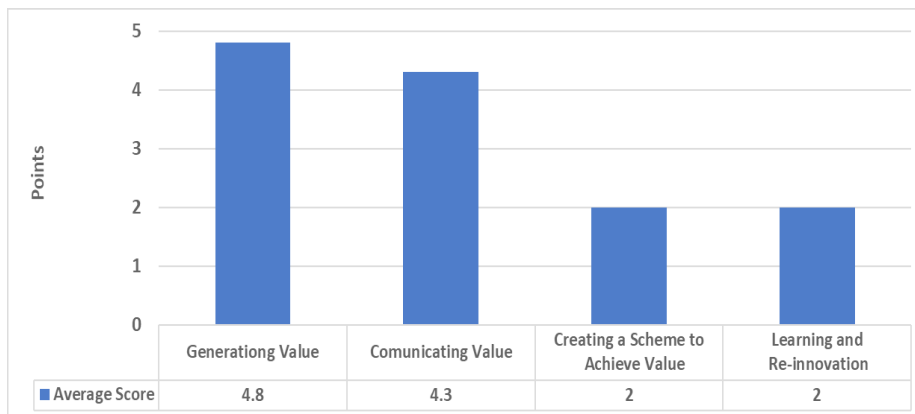
**Learning and Re-innovation Stage.**

- The business considered how the president's control over product development and sales had become overly central.
- The company has shifted to a system in which product development is led by the development division and sales activities are led by the sales division.

**Survey Results on Management Involvement in Innovation Process Factors.**

We found that the president of Company O was deeply involved in the two stages of "generating value" and "communicating value". Particularly, the company president was involved in the generating value stage.

Company O's president has a background as a gearbox design specialist and is an engineering-oriented president; hence, his involvement in product development and manufacturing may have been more strongly expressed in the generating value and communicating value stages (Fig. 3).



**Figure 2.** Survey of Management Involvement in Innovation Process Factors

### **Survey results on managerial decision-making in the “Generating Value Stage”**

The following are the results of a survey conducted by interviewing the president of Company O to determine whether the decision-making structured by the basic decision-making structure of idea, verify, and jump<sup>(2)</sup> was being made in the "value-creating stage" of the innovation process.

#### *Content on Idea.*

When Company O's president was a sales representative, before he became a manager, he went to the Kanto area to sell mowers for three years. He met customers who were rice farmers and field farmers, which was different from the customers who had been mainly orchard farmers. This led to the idea for the industry's first ultra-compact 4WD slope mower, which was requested by a customer for a mower that could cut grass on the slopes following the terraced fields.

Company O's president, who at the time was being turned down by customers, thought about how to get customers to listen to him. As a result, he began to listen to them more deeply and seriously. He was trained by dealing with customers who did not take him seriously at all. In his own words: "I tried to determine the essence of the customer's story by listening to the customer's story. Because this habit was ingrained in me, I was able to observe customers' problems and read their unspoken needs from the bottom of their hearts. This is where I acquired the super-customer-oriented mindset."

Company O's president studied mechanical engineering and specialized in gearbox design. This was an advantage when it came to product design, but what was important for him to translate this advantage into ideas that were useful for innovation was that he always kept a strong focus on the product concept and on solving the customer's problems.

#### *Content on Verification.*

The president of Company O is a mechanical engineer whose specialty is gearbox design. When he was developing the slope mower, he simulated the design many times in his mind. He was able to come up with an arrangement of gears to achieve this. Company O's president thought that a slope mower would need 4WD from the start because it requires forward and backward movement. However, to reduce weight and cost, he built a 2WD prototype and tested its performance. As a result, it was found that the slope mower could not run smoothly in 2WD and that 4WD was the technology required. Company O's president, when he was a salesman, used to visit customers and mow their grass as much as anyone else. This experience allowed him to run simulations in his head to verify the developed product, and the simulation results matched what Company O's management had experienced during the mowing work.

As described above, it is evident that Company O's president had repeated several small validation processes in line with the product concept, taking full advantage of his technical and sales experience.

#### *Content on Jump*

When Company O's president proposed developing a product for rice and field farmers, such as a slope mower, when he was a sales representative, all the people in the company objected, arguing that no customer would pay that huge amount of money to cut grass. In line with his super-customer-oriented mindset, the president of Company O overcame the opposition within the company and decided to develop a slope mower. The president of Company O instructed his company's design team to develop a slope mower. However, the project was neglected for six years, he overcame such adversity and decided to develop a new slope mower, which he succeeded in developing in the seventh year. As mentioned above, the president of Company O had made a decisive leap forward in creating the value of the main products that support the current Company O. He also said, "Without this jump, there would be no Company O today."

### **CONCLUSION**

In this study, we surveyed the decision-making process of a top niche company in the agricultural machinery market, Company O, to examine how they have controlled factors that affect the growth of their products and markets to innovate and how the president had been involved in the innovation process. We assessed how the management staff had been involved in the innovation process and how he/she had made his/her decisions and discussed the hypothesis that managerial decision-making may significantly contribute to value creation during the "Generating Value" stage, while various managerial decisions are being made. As a result, the following conclusions were reached.

1. The president of Company O was found to be particularly deeply involved in the "value generation" stage of the innovation process for the slope mower.
2. During the "generating value" stage of the innovation process for the slope mower, decisions consisting of many ideas, verifications, and jumps were made, and it was found that management decision-making contributed significantly to value generation.

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## CONFLICT OF INTEREST

The authors declared that there are no competing or conflicting interests.

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