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Pivot Strategy of a Seed-Stage Venture Company: Analysis of Zoo Service Business by Bayesian Network

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Abstract

KAI Inc. is a seed-stage company established in November 2019 with a focus on improving animals' quality of life. Initially, they developed feeding devices and systems, animal play equipment, and exercise promotion systems. However, the COVID-19 pandemic led to the closure of zoos, prompting KAI Inc. to pivot. They decided to create an "Online Zoo" concept, which emerged from an accelerator program they participated in. Through collaboration with Shirotori Zoo in Kagawa Prefecture, they conducted a survey in April 2021 to gather feedback from potential users. The study involved constructing a causality model and conducting Bayesian network analysis to understand user preferences, desired animals to see, and acceptable viewing prices. The findings helped clarify the target audience, preferred animals, and pricing, serving as the foundation for developing a business plan.

Keywords: Venture Company; Zoo Service Business; Questionnaire; Bayesian Network

1. Introduction

KAI Inc. was born out of university education in industry-academia collaboration that the author has conducted (Won Founders' Notebook Award! at Founders' Notebook, 2021) (KAI Inc. was liquidated in March 2022.). In this class, students are offered a theme (issue) by a world-famous company that will change society, and they propose a solution using Design Thinking (Aburai et al., 2020).

Design Thinking is a method that starts with finding a problem, creates a solution, and delivers value. It is well known as a method used in Stanford University's d.school or ME 310, a class for industry-academia collaboration (Saito et al., 2017); (Kyoto Institute of Technology, n.d.). It is also used not only in education but also in the business world as a method for developing new products and services and for improving business operations. Design Thinking has become a buzzword in business magazines in recent years and has been described as “User-driven” or “Human-centered.” The reason why large companies are adopting Design Thinking is because it is no longer possible to sell products and services based on conventional success patterns, and it is extremely important to cap-ture the problems and needs that users are not yet aware of, who are evolving daily. The Design Thinking process consists of five steps (Hasso Plattner Institute of Design, 2012) (Fig. 1).

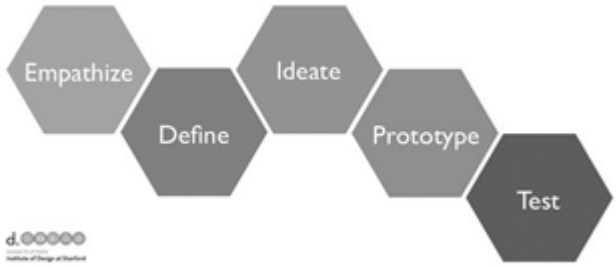

Figure 1. Process of design thinking

（http://beyondthenexus.com/designthinking_empathy_innovation/）

Table 1. 2018 Issues (Theme)

Company name	Issues (Themes)
JTEKT Corporation	Bearing-Based Consumer Products and Business Models
Panasonic Cycle Technology Co., Ltd.	Electrically Assisted Bicycles Changing Rural Transportation Infrastructure
YANMAR Co., Ltd	Autonomous Bird Repellent Robot: Scaring away ducks that approach the natural grass
YKK CORPORATION	Development of applications for self-propelled fasteners: A small motor is attached fasteners and controlled remotely by a smartphone.

Four companies participated in the 2018 class, and the KAI Inc. team worked on JTEKT's “Bearing-Based Consumer Products and Business Models” theme (Table 1).

After a final presentation to JTEKT in November 2018, the project proceeded to social implementation. We collaborated with two companies, JTEKT for technical guidance and Shirotori Zoo in Kagawa Prefecture for cooperation in the experiments of the feeding de-vice.

The process of starting up the business was through design thinking education in industry-academia collab-oration, collaboration with JTEKT and Shirotori Zoo, and in May 2019, a patent for the feeding device was jointly applied for with JTEKT (Patent Information Platform, n.d.). In July, a crowd-funding campaign was implemented to obtain social recognition. It raised 860,000 Yen while our goal was 800,000 Yen, and we thought the project received a certain social recognition. After that, while beginning preparations for starting a business in August, the company entered business contests with the idea of a feeding device from October 2019 to February 2022 to re-fine its business model. During that time, two students started their own businesses in November 2019. After starting the business, the company was doing well, winning the top prize in a national business contest, but around April 2020, the public began to be requested to refrain from going out due to the new coronavirus, which caused zoos across the country to close (Shirotori Zoo, n.d.). Even though zoos did not have visitors, they still had to feed animals and pay salaries to staff, making it difficult to install feeding equipment. As the effects of the new coronavirus were slow to subside, KAI Inc. decided to make a pivot (change in business direction) and planned to develop an online zoo through a six-month accelerator program with the Small and Medium Enterprise Corporation of Japan (SME), starting in September 2020. The details and timeline are shown in Fig. 2.

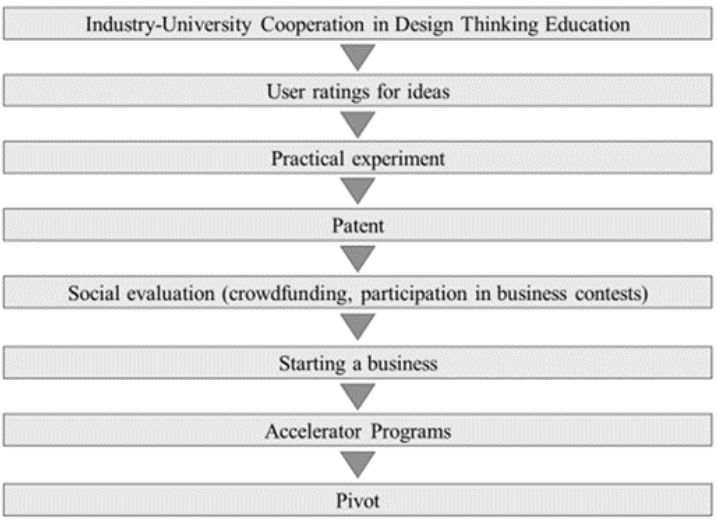

Figure 2. Process to Pivot

2. Growth Stage of Venture Businesses

In the Venture White Paper 2017, venture firms are categorized into four main growth stages (Venture Enterprise Center, 2017).

In order from the early start-up stage, the Seed stage are firms whose businesses have not yet fully launched and are continuing research and product development; Early are firms geared toward product development and initial marketing, manufacturing, and sales activities. Expansion is a company that has begun production and shipments

and is increasing its inventory or sales volume; and lastly Later is a stage where firms have sustainable cash flow and just prior to going public. Based on these descriptions, KAI Inc. falls into the seed stage.

3. Japan's Venture Boom

In the Venture White Paper 2017, venture firms are categorized into four main growth stages (Venture Enterprise Center, 2017).

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4. Japan's Venture Boom

According to the "2020 Survey on University Ventures by the Ministry of Economy, Trade and Industry," the number of student ventures in FY2020 was 644 companies, and the number is increasing every year (Ministry of Economy, Trade and Industry, 2020).

It is said that there have been four venture booms in the past, including one in 2022. Here we look back at past venture booms based on Akashi (2005) (Akashi, 2025), Matsuda (2014) (Matsuda, 2014), and Ohara (2018) (Ohara, 2014).

The first venture boom was from 1970 to 1973. Japan's industrial structure was shifting from heavy industries such as shipbuilding and steel making to processing and assembling industries such as automobiles and electronics, and R&D-oriented high-tech ventures related to processing and assembling industries were produced. This boom led to a clear positioning of venture companies as different from ordinary small and medium-sized enterprises in the industrial world, and the establishment of private venture capital firms is also noteworthy. Backed by this venture capital funding, the existence of venture capital was also related to the fact that those days were the peak of the period of high economic growth and the booming economy led to an increase in the number of independent start-ups after leaving the companies they had worked for.

The second boom period was from 1982 to 1986. The easing of IPO standards provided a tailwind, and there was a rush to establish private venture capital firms. This was also a period when the tertiary industry expanded from its traditional manufacturing-centered industrial structure to include the distribution and service industries. However, the strong yen recession that began at the end of 1985 plunged the country into a "Venture winter period," and a few large venture firms went bankrupt one after another.

The third boom began in 1995, after the bursting of the bubble economy and the prolonged slump and is said to have lasted for 10 years. The report points out that a characteristic of this period was the integration of industry, academia, and government, with the Ministry of Economy, Trade and Industry (METI) and other ministries and agencies working across boundaries to formulate policies and systems, and the industry, academia, government, and local communities working together to establish a framework to support venture businesses. TSE Mothers and other stock exchanges were also established. In the United States, IT companies such as Amazon, Yahoo! and Google were born. In Japan so-called "IT bubble period" began in 1999, and IT companies such as Rakuten, Hikari Tsushin, GMO, Livedoor, CyberAgent, and DeNA were born.

And the fourth venture boom is said to have lasted from 2013 to the present (as of 2022), when financial easing, the establishment of public-private funds and corporate venture capital (CVC), and investment from large corporations in venture companies have begun to gain momentum from around 2013. Digitalization is progressing in all industries, and cutting-edge technologies such as Artificial Intelligence (AI) are emerging as services that are expanding existing businesses.

However, the rate of business start-ups in Japan remains at a low level. After peaking in 1988, the rate of business openings began a downward trend, followed by a gradual upward trend throughout the 2000s, but fell to 4.4% in 2018. On the other hand, the closure rate had been on an increasing trend since 1996, but turned downward in 2010, reaching 3.5% in 2018 (Small and Medium Enterprise Agency, 2020) (Fig. 3.).

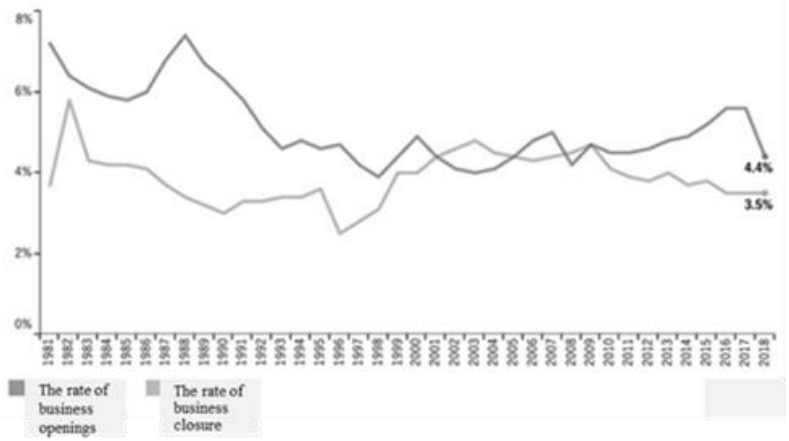

Figure 3. The rate of business openings and the rate of business closure

(Source: Small and Medium Enterprise Agency, "The rate of business open-ings and the rate of business closure")

The level of entrepreneurship in Japan is lower than in the U.S. and France, not only in terms of the rate of business startups, but also in terms of the rate of planned startups for the future (Mizuho Information & Research Institute, 2019) (Table 2).

Table 2. Percentage of business startups and planned startups in each country (%)

	Japan	U.S.	U.K.	Germany	France
Business startups (2016)	5.6	10.3	15.1	6.7	9.8
Planned startups (2018)	8.8	18.5	8.3	7.6	20.4

his current situation is only a slight increase from the growth strategy enacted in 2013, which stated at the time that the aim is to achieve a business start-up rate of 10% by 2020 from the existing rate of 5% or less, and the situation continues to be one in which metabolism is not progressing. Kumano (2014) states that the main reasons behind the low rate of business start-ups in Japan are that entrepreneurship is not an occupational option, and that entrepreneurship has not yet penetrated society (Kumano, 2014), this situation continues even now in what is being called the fourth venture boom.

4. Pivot

The term "Pivot" is gaining attention in the venture business world. It is being used variously by practitioners and others as a positive business turnaround rather than a business failure. Pivots are sometimes considered in themselves as a bright or dark indicator of business success or failure (Kojo, 2016) (Tadokoro, 2018), while others believe that an entrepreneurial spirit that embraces small trial and error and failure is a necessary condition for technology-based business creation (Rise, 2011). However, there is still little academic research on this topic since pivots in venture firms take a very long time to emerge, are dynamic, and are difficult to investigate, among other reasons. In this chapter, KAI Inc., in which the author also participated in the start-up of the company, is described as a case study.

KAI Inc. installed and began operating an actual feeding device at the Shirotori Zoo in December 2019. The business model is that the feeding device is loaned free of charge to the zoo, and the income is generated from a portion of the cost of food such as soybeans, azuki beans, and pellets paid by visitors to the zoo. Starting with the development of the monkey feeding device, the company also plans to develop new feeding devices and expand the business to aquariums in the future.

Figure 4. Monkeys exercising in a feeding apparatus

The idea for the feeding device won the top prize in a nationwide student business contest and was picked up by many media outlets, and preparations had begun to implement the idea into society. However, as mentioned above, zoos were closed one after another around April 2020 due to the spread of the new coronavirus. Despite the absence of visitors, as zoos nationwide were to pay for animal feed and staff salaries, the business environment rapidly deteriorated. Proposals to install feeding systems became difficult, and the company was forced to consider a pivot.

As a result of trial and error, the company decided to start a new business based on the idea of an "Online Zoo," which was improved through the accelerator program of the Small and Medium Enterprise Corporation of Japan (SME), in which it participated for about six months from September 2020.

5. Questionnaire Survey with Cooperative Partner

In order to commercialize the online zoo, a 360-degree camera was installed in the fence and a survey of animals that could be viewed online was conducted, with the aim of introducing the service at the Shirotori Zoo. Twenty-four species of animals, including tigers and giraffes, were targeted, and research was needed for price setting and other aspects of introducing online viewing and feeding services for these animals. Therefore, with the cooperation of the Higashi-Kagawa City Excitement Division, we conducted a questionnaire survey with the following contents and received 84 responses.

Target: Higashi-Kagawa City Excitement Division members

Period: April 21 - April 29, 2021

Method: Web (Google Form)

Some of the basic statistics are shown below.

Q1: How much would you be willing to pay for admission to the online zoo on one device (e.g., one smartphone)?

58% of the respondents answered that they would use the service if it cost between 100 and 300 yen. Of these, those who answered 300 yen accounted for nearly a quarter of the total.

Q2: If you use the online zoo, for what purpose(s) (multiple responses allowed)?

Many visitors especially wanted to see the zoo from angles that are not usually seen. From this, it is clear that people are expecting "A zoo unique to online" rather than simply "To see animals." The next most popular responses were "To enjoy watching with family," "To see animals in a wide range angles," and "Online sightseeing." This is thought to be a way of using the service to supplement opportunities to go out.

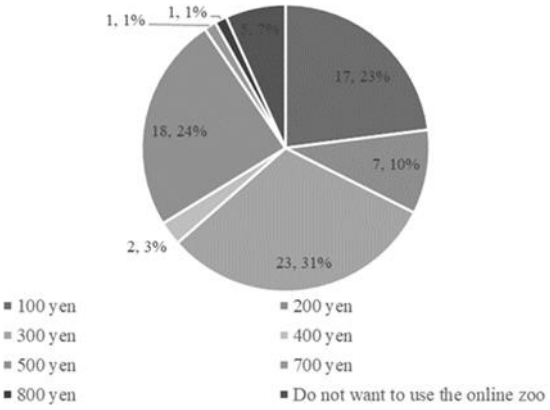

Figure 5. Q1: How much would you be willing to pay for admission to the online zoo on one device (e.g., one smartphone)?

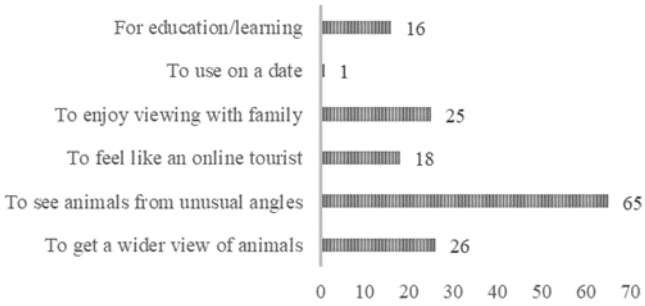

Figure 6. Q2: If you use the online zoo, for what purpose(s) (multiple responses allowed)?

6. The Difficulty of Student Entrepreneurship

Q3: Animals you would like to see in the online zoo (within the Shirotori Zoo) (multiple responses allowed)

Among the 24 species, the most popular ones were lions, tigers, elephants, and giraffes, which are considered the so-called standard animals, in that order.

Q6: If you are able to feed the animals online in real time during the feeding experience, how much do you pay for the feeding experience?

About half of the respondents answered 100 yen. This may be due to the fact that food in the park is also sold for 100 yen. The next most common price was 300 yen.

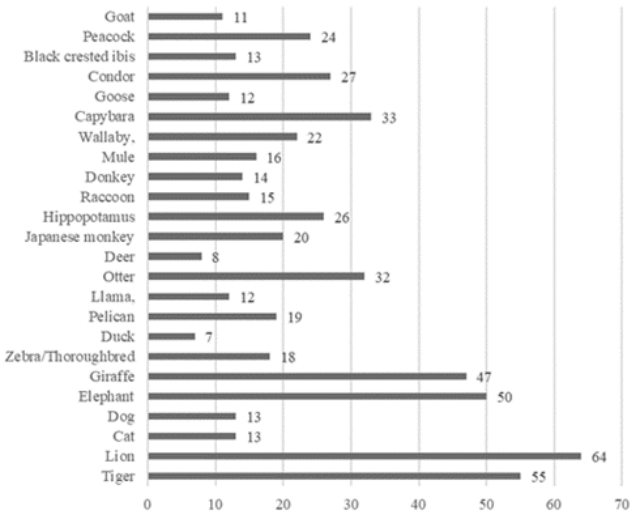

Figure 7. Q3: Animals you would like to see in the online zoo (within the Shirotori Zoo) (multiple responses allowed)

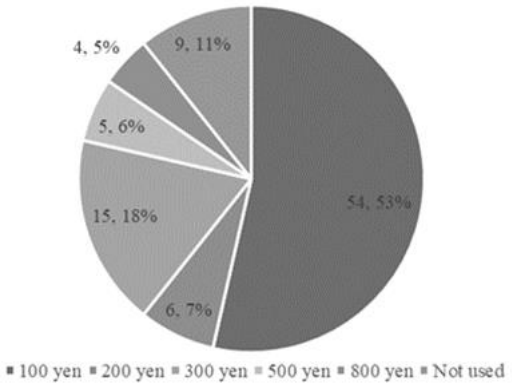

Figure 8. Q6: If you are able to feed the animals online in real time during the feeding experience, how much do you pay for the feeding experience?

Q15: Gender

There were 64 males and 20 females.

Q16: Age

Respondents were in their 30s, 40s, and 50s, in that order.

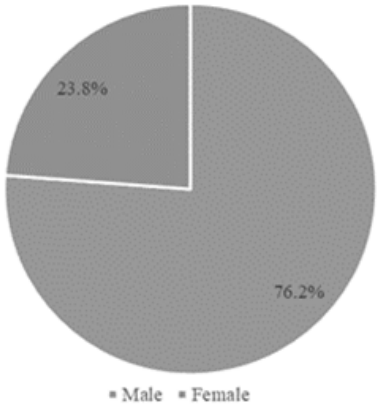

Figure 9. Q15: Gender

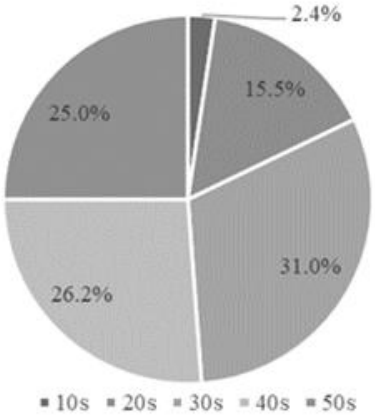

Figure 10. Q16: Age

6. Bayesian Network Analysis

6.1 Causal Model Building

A Bayesian network is a model structure for predicting the future of events in which a wide variety of factors are intricately intertwined, such as the optimization of human behavior and the matching of products with those sought by consumers. Bayes' theorem is used to model in the network structure uncertain and ever-changing phenomena by expressing the causal relationships of "Nodes with probabilities," which are the nodes of the network, in "Directed acyclic graphs" between the nodes. A directed acyclic graph is a graph that starts from a node at a certain vertex and follows the nodes with arrows but does not return to the vertex (Motomura & Iwasaki, 2006).

Bayesian networks have been studied in many fields. In consumer behavior analysis, PC purchasing behavior analysis (Murakami et al., 2004) and Internet sales forecasting of jewelry (Chie et al., 2013) have been conducted. In product development and marketing strategies, research has been conducted on the application of the design of vanilla ice cream cups (Haga & Motomura, 2005), the development of lotion for sensitive skin (Haga et al., 2008), consumer electronics demand surveys that incorporate user preferences (Takahashi et al., 2008), and research applied to purchasing behavior and product display methods (Masuda et al., 2007); (Tateoka et al., 2008). Research dealing with huge sets of data that are difficult to record, store, and analyze with conventional database management systems, which are described as "Big data," has been applied to algorithms for large-scale Web recommendation systems (Yamazaki et al., 2007), and has also been used in Web content recommendation methods (Ono et al., 2004) (Ono et al., 2005).

For example, the study by Takahashi et al. (2008) was the requirement survey and its analysis in advance of the development of home appliances, based on a questionnaire survey of Kansai Electric Power Company users. The questionnaire survey asked about gender, occupation, age, region of residence, family structure, relationship, housing type, energy such as gas and electricity use, values (e.g., importance of environment, comfort, etc.), and desired home appliances, etc. According to the results of the analysis based on sample data obtained from a little over 1,000 cases, detailed results were obtained for potential customers, such as, for example, "Most people in their 30s who work in administrative or technical positions in households with children under 20 years old are looking for home appliances that can be used for inventory control" (Takahashi et al., 2008).

Thus, Bayesian network analysis has been applied in many fields, such as efficient marketing with clear targets.

In this paper, a causal model was constructed and analyzed in detail by Bayesian network to examine in detail the attributes, the animals to be seen in an online zoo, and the price of viewing. The model construction reflects the findings of a member of KAI Inc. and the deputy director of the Shirotori Zoos.

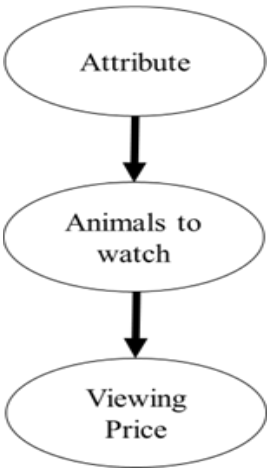

Figure 11. A Built Model

From the model in Fig. 11, a network was constructed based on the attributes (age), the 10 animals that the respondents most wanted to watch (top responses), and the price at which they wanted to watch (one terminal).

6.2 Sensitivity Analysis

A sensitivity analysis was performed by setting evidence for each item. Prior and posterior probabilities were compared to capture changes in the animals that the respondents wanted to see. This time, we focused on the four nodes with the highest number of responses: Elephants, Tigers, Japanese macaques and Lions. Tables 3 and 4 show the results of calculating the posterior probability for each item by setting the evidence. The posterior probability minus prior probability (difference in probability) was calculated in order to grasp the degree of change more clearly.

The results of the sensitivity analysis extracted the items for which the difference in probability increased significantly. Those in their 50s were willing to pay 300 yen for elephants (Table 3), and those in their 30s were willing to pay 100 yen for tigers. It was also revealed that those in their 30s were willing to pay 500 yen to see Japanese monkeys, and that those in their 50s are likely to be willing to pay 300 yen for a viewing of Lions (Table 4).

Table 3. Posterior probability - prior probability (Elephant, Tiger)

Node	Parameter	Prior probability	Elephant		Tiger	
			Posterior Probability	Difference	Posterior Probability	Difference
Animals to watch	Elephant	0.09	1	–	0	–
	Tiger	0.153	0		1	
	Japanese monkey	0.098	0		0	
	Lion	0.183	0		0	
Attribute	10s	0.034	0.032	0.002	0.032	0.002
	20s	0.157	0.147	0.01	0.159	-0.001
	30s	0.303	0.336	-0.033	0.298	0.005
	40s	0.258	0.283	-0.024	0.261	-0.002
	50s	0.247	0.202	0.045	0.25	-0.003
Viewing Price	100 yen	0.212	0.188	0.024	0.056	0.157
	200 yen	0.114	0.09	0.024	0.053	0.061
	300 yen	0.264	0.091	0.173	0.485	-0.222
	400 yen	0.064	0.059	0.005	0.035	0.029
	500 yen	0.244	0.464	-0.221	0.275	-0.031
	800 yen	0.047	0.052	-0.005	0.031	0.016

Table 4. Posterior probability - prior probability (Japanese monkey, Lions)

Node	Parameter	Prior probability	Japanese monkey		Lion	
			Posterior Probability	Difference	Posterior Probability	Difference
Animals to watch	Elephant	0.09	0	–	0	–
	Tiger	0.153	0		0	
	Japanese monkey	0.098	1		0	
	Lion	0.183	0		1	
Attribute	10s	0.034	0.036	-0.002	0.026	0.008
	20s	0.157	0.167	-0.01	0.159	-0.001
	30s	0.303	0.275	0.028	0.329	-0.026
	40s	0.258	0.239	0.019	0.256	0.002
	50s	0.247	0.283	-0.035	0.23	0.017
Viewing Price	100 yen	0.212	0.173	0.039	0.372	-0.159
	200 yen	0.114	0.083	0.031	0.089	0.025
	300 yen	0.264	0.504	-0.241	0.135	0.129
	400 yen	0.064	0.055	0.01	0.029	0.035
	500 yen	0.244	0.086	0.158	0.321	-0.078
	800 yen	0.047	0.048	-0.001	0.026	0.021

When preparing a business plan for venture capitalists and others in the future, we believe that the feasibility of the plan can be asserted by considering the viewing price of 300 yen for the lion, which was the most popular animal to watch, as the admission fee to an online zoo. In addition, videos are non-verbal and can be delivered worldwide. For example, a video of a hippopotamus eating a watermelon at Nagasaki Zoo was released on YouTube in August 2014 and had 160 million views as of November 2022 (Nagasaki Zoo, n.d.).

7. Conclusion

This study used the case study of a seed-stage venture company, KAI Inc. 's Pivot, to conduct a questionnaire survey on online zoos as a basis for creating a business plan. In order to analyze the obtained responses in detail, a causality model was constructed, and a Bayesian network sensitivity analysis was conducted. In the author's experience, it is very difficult to provide a rationale for the pricing of a venture company's main products and services.

The following four objectives for creating a business plan have been identified (Hasegawa, 2018).

1)To make it easier to obtain funds, human resources, and other management resources by clarifying the business and its attractiveness.

2)To create a foundation for cooperation among founding members by clarifying the nature of the business.

3)To increase the likelihood of business success by identifying problems and obstacles in the business by the entrepreneurs themselves.

4)By establishing a base for managing the status and progress of the business, to serve as a springboard for considering possible adjustments and changes in response to subsequent changes in the business environment, etc.

In other words, the creation of a business plan is not only to seek the understanding of funders and business collaborators, but also to promote the business with the entrepreneur's own peace of mind.

The results of the Bayesian network analysis added persuasiveness with respect to the pricing of the unit price of admission to the online zoo, which is the basis for sales. We believe that this case can contribute to the creation of business plans using Bayesian networks for pivots of venture companies and even for new businesses.

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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Appendix

	Questionnaire survey on online zoos, etc.
April 2021	
Shirotori Zoo in Higashikagawa City, Kagawa Prefecture and KAI Inc. are planning to implement an "Online Zoo" as a new trial during the Corona disaster. You will be able to view the animals in the Shirotori Zoo from your smartphones or PCs while staying at home. Furthermore, we are considering a service that focuses on universal design, such as allowing people to enjoy the animals without having to move around the zoo. We are also considering a system to feed the animals in real time. We are also planning to implement an online pet service called KAI Nushi. When you hear the word "Pet, " what usually comes to mind? Dogs and cats are probably the standard. However, when you use our "KAI Nushi" service, you can have an unprecedented simulated experience of owning an animal such as an elephant or a lion. This survey will be used as basic research for marketing and research of Shirotori Zoo and KAI Corporation. Your answers will not be used to identify you personally. All survey responses will be processed in such a way that individuals cannot be identified before being used. Please allow 5 to 10 minutes to complete the survey, and we appreciate your cooperation.	
We have a question about the online zoo.	
Q1	How much would you be willing to pay for admission to the online zoo on one device (e.g., one smartphone)? ： (1) 100 yen, (2) 200 yen, (3) 300 yen, (4) 400 yen, (5) 500 yen, (6) 600 yen, (7) 700 yen, (8) 800 yen, (9) 900 yen, (10) 1,000 yen or more, (11) Do not want to use the online zoo】 *If you selected "Do not want to use the online zoo," please go to Q7 and answer the following questions as well.
Q2	If you are able to use the online zoo, for what purpose(s) (multiple responses allowed)： (1) To get a wider view of animals, (2) To see animals from angles not usually seen, (3) To feel like an online tourist, (4) To enjoy viewing with family, (5) To use on a date, (6) For education/learning, (7) Other ( )
Q3	Animals you would like to see in the online zoo (within the Shirotori Zoo) (multiple responses allowed)： 【(1) Tiger, (2) Lion, (3) Cat, (4) Dog, (5) Elephant, (6) Giraffe, (7) Zebra/Thoroughbred, (8) Duck, (9) Pelican, (10) Llama, (11) Otter, (12) Deer, (13) Japanese monkey, (14) Hippopotamus, (15) Raccoon dog, (16) Donkey, (17) Lemur, (18) Wallaby, (19) Capybara, (20) goose, (21) Condor, (22) Black crested ibis, (23) Peacock, (24) Goat】
Q4	Which of the animals in Q3 would you most like to see? ：【 】
Q5	We are planning to collaborate with other zoos and aquariums. What animals not listed in Q3 would you like to see (please write, multiple answers allowed)? ：【 】
Q6	If you are able to feed the animals online in real time during the feeding experience, how much would you to pay the feeding experience? ： 【(1) 100 yen, (2) 200 yen, (3) 300 yen, (4) 400 yen, (5) 500 yen, (6) 600 yen, (7) 700 yen, (8) 800 yen, (9) 900 yen, (10) 1000 yen or more, (11) Not used】
Q7	Please indicate the reason(s). Why you do not want to use the online zoo (free answer): 【 】
	I have a question about the KAI Nushi.

Q8	How much would you be willing to pay for KAI Nushi per animal per month? ：【(1) Less than 300 yen, (2) 500 yen, (3) 800 yen, (4) 1000 yen, (5) 2000 yen, (6) 3000 yen, (7) 5000 yen, (8) 8000 yen, (9) 10000 yen or more, (10) don't want to use KAI Nushi】*If you chose (10) don't want to use KAI Nushi, please go to Q14 and answer the following as well.
Q9	If you can use KAI Lord, for what purpose(s) (multiple answers allowed)： 【(1) I want to pay for my favorite animal, (2) I want to brag to friends, family, etc. that I have a rare animal, (3) I want to support the zoo, (4) Other（ ）】
Q10	Animals you would like to keep at the Shirotori Zoo for KAI Nushi (multiple answers allowed)： 【(1) Tiger, (2) Lion, (3) Cat, (4) Dog, (5) Elephant, (6) Giraffe, (7) Zebra/Thoroughbred, (8) Duck, (9) Pelican, (10) Llama, (11) Otter, (12) Deer, (13) Japanese monkey, (14) Hippopotamus, (15) Raccoon dog, (16) Donkey, (17) Lemur, (18) Wallaby, (19) Capybara, (20) Goose, (21) Condor, (22) Black crested ibis, (23) Peacock, (24) Goat】
Q11	Which of the animals in Q10 would you most like to have? ：【 】
Q12	We are planning to collaborate with other zoos and aquariums. What animals not listed in Q10 would you like to keep (free answer, multiple answers allowed)? ：【 】
Q13	What would be your favorite KAI-only benefit, if any (multiple answers allowed)： 【(1) Free admission to the zoo, (2) Priority feeding at your convenience, (3) Invitation to the zoo at night, (4) Regular animal videos provided, (5) Gifts of animal droppings, (6) Others（ ）】
Q14	Please indicate the reason(s). Why you do not want to use the KAI- Nushi (free answer)：【 】
Ask a question about yourself.	
Q15	Gender：【(1) Male, (2) Female】
Q16	Age： 【(1) 10s, (2) 20s, (3) 30s, (4) 40s, (5) 50s, (6) 60s, (7) 70s, (8) 80s and older】
Q17	Profession: 【(1) Student, (2) Public employee, (3) Company employee, (4) Faculty/staff, (5) Group employee, (6) Self-employed, (7) Temporary employee, (8) Part-time employee, (9) Unemployed, (10) Other（ ）】
Q18	What prefecture do you live in? ：【 】
Q19	Are you married：【(1) Married, (2) Single】
Q20	Number of children ：【 】
Q21	Are you proactive or passive? ： 【(1) Proactive, (2) Somewhat Proactive, (3) Neither Proactive nor Passive, (4) Somewhat Passive, (5) Passive】
Q22	Do you like to play with a lot of people? ： 【(1) Very much agree, (2) Somewhat agree, (3) Neither agree nor disagree, (4) Not really agree, (5) Not at all agree】
Q23	How do you spend your holidays? ： 【(1) Outdoor, (2) Indoor, (3) Can't say either】
Q24	Please choose the one thing you value the most.：【(1) Affection, (2) Safety and security, (3) Honor, (4) Food, clothing, and shelter, (5) Self-realization, (6) Social contribution, (7) Approval, (8) Others（ ）】