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The Development of Marketing Plan for a Virtual Cycling Application: A Case Study of China (Beijing)

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Abstract

Background and Aims: Due to the COVID-19 pandemic, people's social activities have been greatly affected, so online activities have seen rapid development and user growth. become the norm. In cycling, the China Cycling Association canceled or postponed several races, affecting cyclists across the country. This is because the mass gatherings and high crowd density associated with such events increase the risk of virus transmission. Because of this, bicycle virtual riding software has developed rapidly, and users have increased rapidly. In addition, the evolving metaverse concept has prompted increased investment in bicycle virtual riding software development. This study explores and analyzes the operation plan of bicycle virtual riding software in China (Beijing) and analyzes the specific needs of Chinese people.

Methodology: The main research methods include SWOT analysis, user stories, and population research. Use competitive product analysis such as SWOT analysis to study the specific reasons why other products cannot be promoted and popular in China (Beijing). Collect the main channels for users to obtain information and determine product promotion plans. And conduct user demand research, establish user portraits, and finally propose feasible solutions.

Results: The main findings are the difficulties in promoting virtual bicycle riding software in Beijing, China, the reasons why the currently popular software is difficult to promote, the travel habits and consumption willingness of residents, and a complete promotion plan.

Conclusion: The study sheds light on factors impeding the adoption of popular software already in use and clarifies the travel habits and consumption attitudes of the locals in Beijing, China. It also highlights challenges in promoting virtual bicycle riding software in Beijing. It provides insights into creating a strong promotion strategy to overcome the obstacles found and increase the adoption of virtual bicycle riding technology through in-depth analysis.

Keywords: Virtual Cycling; Metaverse; COVID-19; User Behavior; Market Analysis; Marketing Plan; Application

Introduction

Bicycle virtual riding software is software that simulates real riding on a computer. Users transmit riding data to the computer in real time through sensors. This type of software has developed rapidly in recent years, and different software has different focuses. This software uses the concept of the metaverse, allowing users to meet and ride together in the virtual world. The metaverse refers to a 3D virtual space based on the future Internet that has the characteristics of link perception and sharing, which enhances physical reality through virtuality and presents the characteristics of integration and physical persistence. This paper mainly studies software marketing solutions suitable for Beijing, China.

Due to the COVID-19 pandemic, people's social activities have been greatly affected, so online activities have developed rapidly, and online work has gradually become the norm. In cycling, the China Cycling Association canceled or postponed several races, affecting cyclists across the country. Around the world, sporting events are suspended or without fans in attendance.

Although there is no study on cycling, even with small groups of cyclists, if there is a potential symptomatic carrier in front of the group, this individual could cause droplet transfer to the others (slipstream of the leading person). This issue could be worse than walking or running due to the traveling speed during cycling, which requires more distance between the cyclists. It is no small matter, as the risk

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of an accident is intrinsic to cycling. Falls, for example, are a serious issue for cyclists. In this context, the recommendation for outdoor activities may need to be carefully evaluated, because hospital beds must be prioritized for patients with COVID-19. (Dominski & Brandt, 2020)

A prime example is the 2020 Olympic Games in Tokyo, which were postponed to 2021 due to the COVID-19 pandemic. There are indications that global events may be further postponed given the recent surge and increase in infections. This is because the mass gatherings and high crowd density associated with such events increase the risk of virus transmission. Because of this, bicycle virtual riding software has developed rapidly, and users have increased rapidly. In addition, the gradual maturity of the metaverse concept has led more and more companies to invest in developing bicycle virtual riding software.

Beijing and Shanghai are the two most popular cities in China for cycling and can provide a large amount of sample data. Therefore, this paper selects cycling enthusiasts in Beijing as the research object. In recent years, due to epidemic prevention, cycling activities have been seriously affected. Some cycling enthusiasts choose to exercise at home on riding platforms, so bicycle virtual riding software has broad room for development.

Due to the above reasons and actual circumstances, virtual bicycle applications have developed rapidly, but currently popular products do not have marketing plans for China (Beijing), and marketing plans applicable to other countries cannot solve the needs. Therefore, it is necessary to conduct research and analysis and formulate targeted marketing plans. The study will involve members of cycling clubs and enthusiasts in the Beijing area and sports and fitness enthusiasts on social media.

Objectives

Analyze the marketing strategies, advantages, and disadvantages of mainstream bicycle virtual riding software.

Obtain the demand analysis of the population that can be used for domestic marketing.

Establish marketing strategies for virtual cycling software in line with domestic commercial demand analysis.

Literature Reviews

What is Virtual Cycling?

Traditional cycling indoor training usually involves repeated pedaling on a fixed cycling platform, and people get bored during long repetitions. However, scientists have found that monotonous activities are easier and more motivating for users if they involve game elements. In technical terms, it's called "gamification." With new technology like power meters or smart indoor trainers, boring indoor training can be turned into a game.

The essence of virtual riding is to transfer the user's performance on the bicycle into the virtual world. At the same time, different functions are added to the virtual world to meet the different needs of users, such as different scenes and customized avatars. A virtual ride can provide a different riding experience than the real world.

1. What are Smart Trainer and Power Meter: If the user has a power meter on the user's bike in addition to the user's smart trainer, the user will not only increase accuracy. A power2max NG or NGeco will also automatically transmit the user's cadence. Additionally, a power meter in Virtual Cycling enables users to use the same cycling power data outside on the road. (NEEF, FEBRUARY 24, 2022)

2. How Virtual Cycling Works: Users can access preplanned routes or workouts using virtual cycling applications. To be able to ride in the digital world, the watts per kilogram of the user are calculated. Each workout is programmed with either a gradient or a target wattage for each meter. This application can calculate the speed of a rider based on the terrain on which the rider is traveling. As an example, a user of 80kg and 180 watts pedaling on a flat surface will reach a speed of 30 kilometers per hour if the user weighs 80kg.

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Considering a gradient of 8% and consistent performance, the user's virtual speed is 8.5 km/h. As it would be outside in the real world.

Figure 1 virtual cycling
Source from internet.

Advantages and Disadvantages of Virtual Cycling

1. Advantages

Realistic Simulation of Many Different Racing Situations and Conditions

Continuous development of new routes and training environments is underway, with recent advancements incorporating simulated representations of many stages of the renowned Tour de France, notably featuring the highly acclaimed sprint finale along the iconic Champs-Élysées. At present, there exists a wide array of over 70 racing courses, including various distances, with some being short sprints measuring less than 5 kilometers, while others are classified as endurance courses, exceeding a length of 100 kilometers. Virtual reality technology allows for the realistic simulation of renowned climbing routes, including iconic ascents such as the Alpe d'Huez and Mont Ventoux. The flexibility of this activity enables a higher degree of training specificity compared to conventional indoor cycling methods.

In addition, virtual cycling platforms can replicate drafting effects, which replicate the energy-saving phenomenon of riding behind another cyclist in an outside setting. The drafting effect facilitates fundamental adjustments including variations in the cyclist's height and mass, the weight and model of the bicycle, wheel selection (in the context of the Zwift simulation), the size of the riding group, and inclines, including even mild ascents of up to 3 degrees. During downhill cycling, riders can sustain speed while assuming various positions, with the most notable being the "super-tuck" position. This stance is highly aerodynamic and is adopted by all cyclists when freewheeling at or over a specific speed threshold. Freewheeling is a frequently seen phenomenon during real-world riding on diverse terrains. Consequently, virtual training platforms replicate a wide spectrum of cadences. Furthermore, virtual cycling platforms simulate many types of road conditions, such as tarmac, gravel, and mud, each possessing distinct levels of resistance and providing unique riding encounters. Therefore, by possessing only a single type of bicycle,

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the athlete can engage in a wider range of training and competition scenarios or categories that would otherwise be unattainable.

The latest advancement entails the implementation of a steering platform affixed to the bicycle at one's residence, enabling a heightened degree of engagement inside the virtual setting.

The utilization of feedback loops frequently found in video games has resulted in a wide range of interactive applications that promote participation in the indoor riding experience, a phenomenon known as the gamification of indoor cycling. The virtual training platform offers incentives for excellent performance in the form of special currency, experience points, and levels. These rewards can be utilized to make in-game purchases, such as bike frames and wheelsets, which possess certain features that can enhance performance, such as improved aerodynamics or reduced weight. Numerous studies have demonstrated that rewards have the potential to serve as a motivating factor for individuals engaging in exercise tasks. These prizes can incentivize users to increase their exercise intensity, elevate their climbing distance, or prolong their activity duration, hence enabling them to earn more substantial rewards.

Moreover, the gaming nature of this program may attract new participants by including music and social interactions (e.g., multiplayer options that allow friends to be included or guidance to be received from experienced players), as well as reducing frustration due to poor-quality graphics and overly complex controls and display functions that may evoke motion sickness. (Faric et al., 2019)

Safety

China has more than 400 million bicycles, ranking first in the world. As an everyday traveling mode, about 6 million bicyclists ride on roads daily. (Yan et al., 2011). According to police data, road traffic mortality peaked at a very low level of motorization (0.06 motor vehicles per person) in 2002. Since 2002, road traffic mortality dropped gradually but substantially, indicating China has successfully managed road traffic crashes and safety is improving substantially (Fig 2). On the contrary, health data show that road traffic mortality did not reach a peak until 2012, and at a much higher level of motorization (0.174 motor vehicles per person). These results suggest road traffic mortality in China remains at a high level and safety is poor (Fig 2). (Huang et al., 2016)

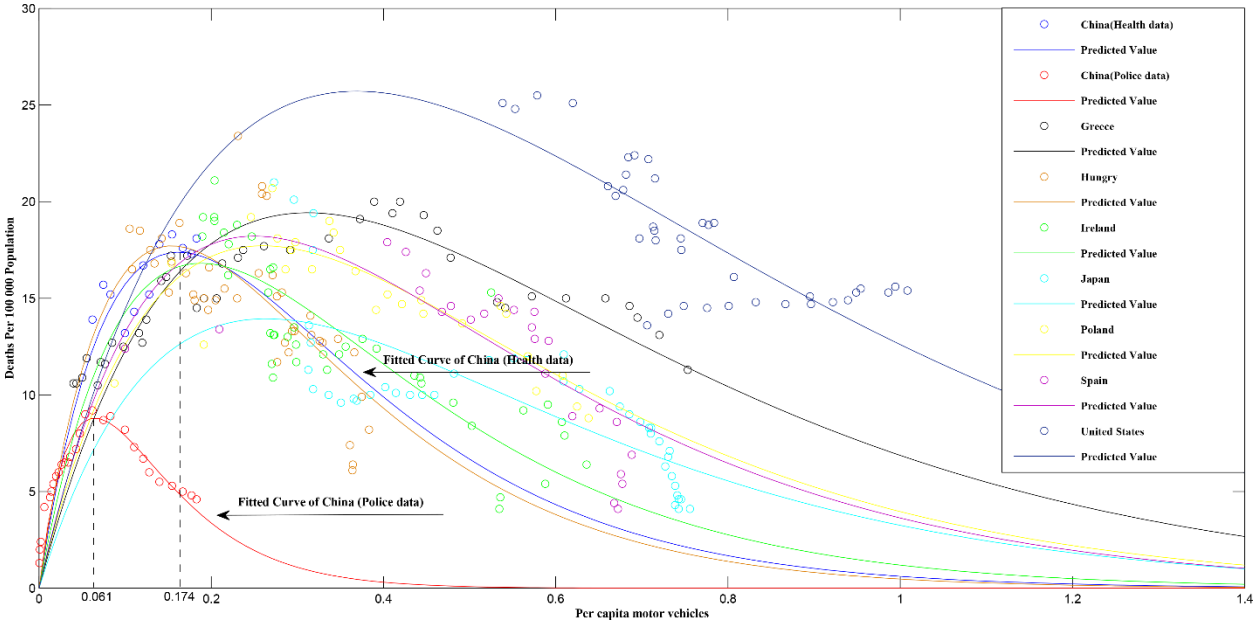

Figure 2 Fitted curves between road traffic mortality and per capita motor vehicles based on modified Smeed equation

Source: doi:10.1371/journal.pone.0153251.g001

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Moreover, the presence of many factors such as heavy traffic, darkness, adverse weather conditions, the potential threat of encountering strangers, and the risk of bicycle theft frequently act as deterrents to individuals' participation in cycling.

The application of simulated races in various fields, along with participation in large group races without the fear of accidents, offers significant benefits for individuals undergoing injury rehabilitation or suffering anxiety while riding in groups. Individuals with little confidence and competence in cycling might engage in race participation through virtual cycling platforms, therefore circumventing the potentially intimidating features associated with visiting an outdoor event and navigating the initiation of a large-scale race.

Athletes can engage in high-intensity training sessions without the hindrance of traffic or interruptions such as traffic lights, so enabling them to maintain standardized training loads. Indeed, the experience of pressure and urgency that can be generated by virtual cycling has the potential to enhance both the intensity and enjoyment of high-intensity interval cycling among those who lack training.

2. Disadvantages

System Failure: One additional limitation of the Zwift system pertains to dropouts, which refer to instances of temporary or prolonged disruption in Bluetooth or Ant+ connectivity between power meters, trainers, or computing equipment utilized for simulation purposes. These events are commonly referred to as "cyber mechanicals" within the racing community, drawing a parallel to the mechanical failures observed in traditional, non-virtual bicycle races. Instances of dropouts are infrequent, sometimes of short duration, yet their occurrence at any given moment can significantly affect observable performance, particularly in the context of a race. Various factors can contribute to dropouts, including hardware malfunctions, software issues such as bugs or hosting problems, and human errors such as neglecting to charge devices. Irrespective of the underlying factors, the occurrence of dropouts presents a potential risk that sponsors and/or athletes may perceive as unfavorable.

The Human Component: The inherent characteristics of the simulation may diminish the requisite proficiency in technical skills and bicycle control that are necessary for achieving success in competitive non-virtual events at an elite level. How maximal sprinting is executed on an ergometer differs from outside sprinting due to its unique construction. The platform effectively replicates the process of cornering, hence eliminating the necessity for the user to engage in this activity. Moreover, comprehending body location during descent or braking, as well as effectively managing distances among a collective of cyclists, is not seen as required. The presence of onscreen avatars and power statistics introduces a level of complexity that hinders the ability to accurately predict the outcomes of attacks or alterations in tempo. The absence of crowds eliminates the potential for emotional support and the feeling of gratification that they can bring in moments of accomplishment. This may potentially diminish the level of enthusiasm among both the competitors and sponsors. In addition, it is worth noting that the collective performance of professional cyclists can be influenced by the abilities and attributes of their fellow teammates. For instance, it is common for cyclists to prioritize supporting the team leader's victory, even if it means sacrificing their prospects (Frey and Torgler, 2007). In general, virtual racing may attenuate the intuitive feelings of real-life racing. (McIlroy et al., 2021)

Is Virtual Cycling Better than Outdoor Cycling?: Virtual cycling is an indoor cycling sport that is convenient, flexible, and suitable for various indoor environments. Users can quickly prepare and start training. Indoor cycling is a convenient and efficient way to exercise, with many benefits for those who lead busy lives. With indoor cycling, you don’t have to worry about finding a safe and suitable route to cycle outside or dealing with unpredictable weather conditions. This means that you can easily fit a cycling workout into your schedule, whether it’s before work, during your lunch break, or after dinner. (CycleMasters, 3 February 2022)

Outdoor cycling usually requires a long period of preparation, such as sportswear, helmets, computers, and other equipment. Outdoor cycling is more engaging and usually takes longer.

Virtual Cycling Helps Improve Training

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With the development of virtual cycling in recent years, many cyclists and cycling teams have chosen to use virtual cycling for daily training and have achieved good results. Interactive cycling games can be a valid alternative to conventional exercise as they result in a higher exercise intensity than conventional cycling and a distraction from aversive cognitive and physiological states at and above the ventilatory threshold (Monedero et al., 2015)

Social Media

Social media is a very important step in product marketing, and the visibility of a brand often depends on marketing. Especially for high-tech products, it is necessary not only to have excellent products but also to pay attention to market demand. Take DJI as an example. The company initially provided UAV flight control system solutions and now provides solutions for geographic surveying, security patrols, agricultural management, etc. The company's products are reliable, and it has also established a DJI community to communicate directly with users.

DJI's Drone Company achieves above-average returns by emphasizing user-oriented, where marketing, products, ease of obtaining products, and after-sales / warranty are all stressed to make it easier for consumers to find the information they need. Then aside from the website, Product and purchase information can quickly be searched on the internet and e-commerce. (Khofiyah et al., 2020)

The Internet provides sufficient communication channels for communities, such as Weibo, WeChat, forums, QQ space, etc. The choice of social channels should not only be “big and comprehensive” but also “small but beautiful”. In other words, the community must fully establish a wide range of communication channels, understand the characteristics of various channels, and be able to fully and rationally utilize them.” (Yang & Lisi, 2015)

Methodology

Product marketing strategy: According to the analysis of the main marketing methods, it is difficult to promote foreign products directly in China. The reason is that the consumption habits of user groups are different, the support of third-party platforms is not in place, and users are more willing to choose products that can find relevant information.

Service marketing strategy: There are obvious differences between service marketing and product marketing, which are formed based on the intangible, heterogeneity, inseparability, and non-storage characteristics of the service itself. Excellent service marketing should form users' perception of service quality, concept, responsibility attitude, and so on. Virtual reality technology requires not only strong technical support but also high-quality customer service. Therefore, it is necessary to strengthen internal management, improve service quality, provide service quality commitment to customers, and formulate high-standard service rules.

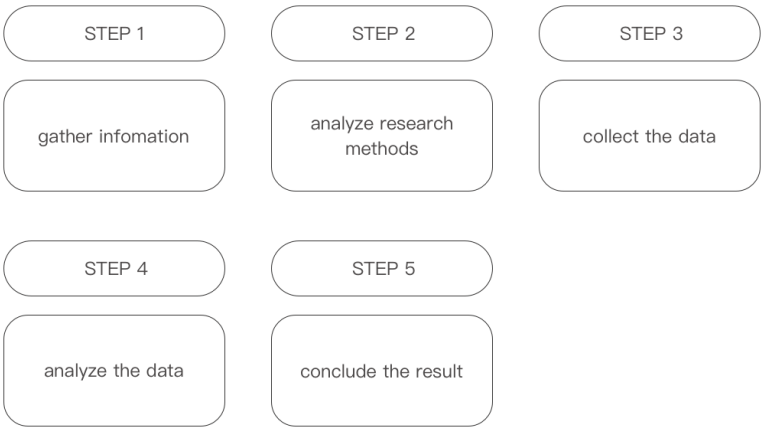

Figure 3 research process: Source by author

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Based on the research questions, the marketing plan of virtual riding software in Beijing, China is analyzed. Mainly used research methods such as SWOT analysis, user stories, and questionnaires.

User stories: Select a survey group. Establish user stories through interviews with Beijing Bicycle Club members and cycling enthusiasts. Create task questions. Questions that will be asked during the interview include riding habits, purpose of riding, who you ride with, riding time and distance, why you insist on riding, what you get from riding, etc. Build user stories. By building user stories to understand what people need and reduce potential risks

SWOT analysis: SWOT is an abbreviation of the four words: Strengths, Weaknesses, Opportunities, and Threats, which guide us to approach our analysis from the perspectives of strengths, weaknesses, opportunities, and threats. Analyze internal and external factors that may affect the business plan through SWOT analysis. This study uses SWOT research to analyze the influencing factors of virtual cycling marketing in Beijing, China. Combined with the analysis of local actual conditions, such as the development of social media and the consumption concepts of residents, the data was obtained through population research and questionnaires.

Population research: The research will be conducted among cycling clubs and cycling enthusiasts in Beijing. Through qualitative analysis, we collected the cycling habits, consumption concepts, and values of different groups of people. Cycling Habit: Ride every day; I will participate in outdoor cycling activities on the weekends. I only ride freely when I am busy at work; I am used to riding with friends; I like to explore different routes on my own

Sample size: The study will be carried out among bicycle clubs in Beijing, and 200 people will be sampled to collect data through questionnaires and other methods. Perhaps the minimum expected difference that has been specified is unnecessarily small, and a larger expected difference could be justified, especially if the planned study is a preliminary one. The results of a preliminary study could be used to justify a more ambitious follow-up study of a larger number of individuals and a smaller minimum difference. (Eng, 2003). Beijing has a good cycling environment, so there are many cycling clubs. Surveying cycling enthusiasts in Beijing can yield diverse results. The size of the Beijing Cycling Club is usually 100 people. Take Beijing's largest cycling club "Beijing Seven Fire Club" as an example. According to the target calculation with a confidence level of 95% and an accuracy of 5%, the club currently has 421 members. The sample size is 202.

1. Analysis of the global virtual cycling software market. Analyze the development situation of the global virtual cycling market. Analyze the main types of global virtual cycling software and their market share.

2. Comparative analysis of advantages and disadvantages of major virtual cycling software. Analysis of the global promotion and application. Country, region, and population analysis. Promotion in Beijing. Analyze the main reasons for the slow rollout. Analysis of the status quo of the virtual cycling market in Beijing, major virtual cycling software, and their market shares. The demand structure of Chinese consumers or consumer groups at different levels for virtual bicycles; and demand for virtual cycling product functions.

3. According to the survey and analysis results, the marketing plan of bicycle virtual riding software should be designed to meet the different needs of Chinese people and highlight the characteristics of the software.

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Results

Result analysis

Through the ranking chart of the most important motivations for using social media in China, it can be found that connecting with friends and family is the most important motivation. Nearly 30% of people browse hot topics and more than 20% watch live broadcasts. Therefore, by creating hot topics and live broadcasts, people can discover new products.

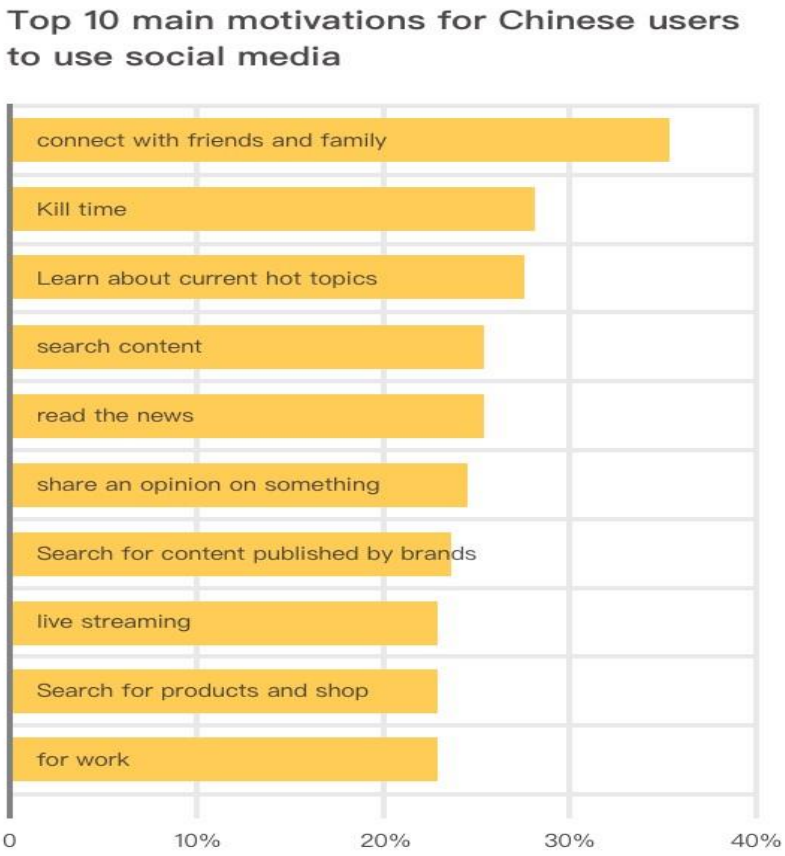

Figure 4 Main motivations for using social media
Source by author

Chinese people are keen on sharing information with friends. WeChat is one of the most popular social software in China, and Moments is a function in WeChat that focuses on sharing information. The visible scope of Moments is people who are friends with the user. It is more accurate to promote cycling products through moments. WeChat also has a service account open to everyone. Various brands usually create accounts to promote products and post-event inquiries.

As far as cycling is concerned, the publicity method should be closer to the habits of cycling enthusiasts. Here are a few ways to advertise.

Invite cyclists to experience and publish videos before the application is launched to attract new users.

Create hot spots on major social media, such as holding offline virtual bicycle riding experience activities.

Enter the live broadcast platform and invite cyclists to experience virtual bicycle riding.

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Advertisement placement in bicycle races.
Promote products according to the ranking of social media platforms most used by Chinese people.

SWOT analysis

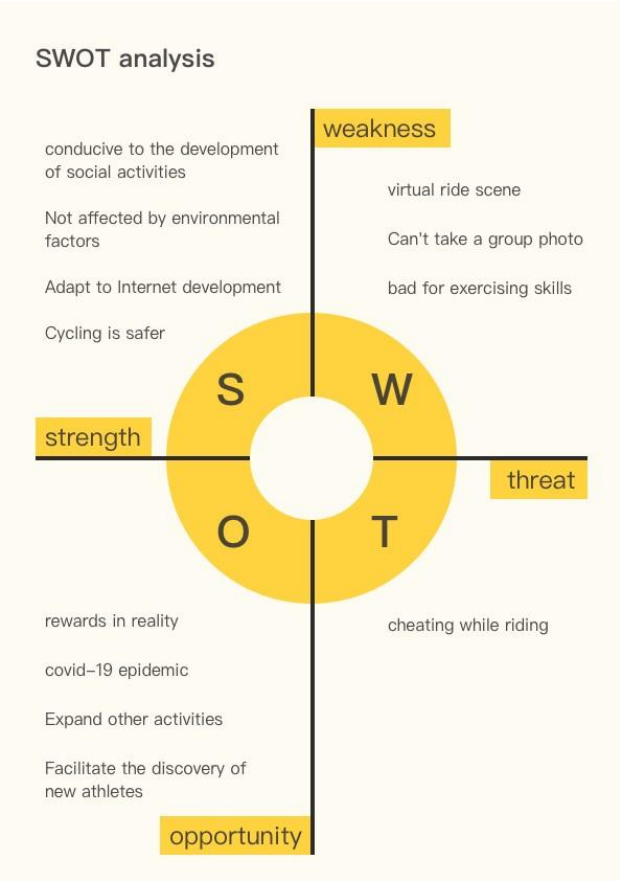

Figure 5 SWOT analysis
Source by author

Strength:

It is conducive to the development of social activities

At present, outdoor cycling activities are mainly divided into regions, and it is difficult for cyclists in different regions to ride together. Virtual cycling allows cyclists in different areas to connect via the Internet and ride online. Communicating with each other through the virtual cycling platform is conducive to promoting cycling activities.

Not affected by environmental factors

Outdoor riding is usually affected by traffic, weather, temperature, air quality, and other factors, and online virtual riding software can avoid these problems.

virtual programming erases transportation barriers and opens up adaptive sports opportunities to rural populations who may not otherwise be exposed, as well as international populations. (Blauwet et al., 2020)

Adapt to the development of the Internet

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Thanks to the rapid development of the Internet, provides good support for virtual reality technology. At present, China is promoting the construction of digital cities and applying virtual reality technology to some technical fields. As a kind of virtual reality technology, virtual bicycle riding software can be promoted quickly.

It's safer to ride a bike

Cycling is popular in China, and officials encourage people to use bicycles for travel or commuting, but the number of bicycle accidents and deaths has been rising every year, from 16,270 accidents and 187 deaths in 2016 to 22,308 accidents and 245 deaths in 2020, according to the Ministry of Transport.

In addition, COVID-19 is more likely to be spread during exercise. According to the research mentioned in the introduction, the risk of spreading COVID-19 during cycling is higher than running. This is because of the airflow of the bike in front of the people.

The above information comes from the statistics of China's Ministry of Communications, which shows that there are certain dangers in cycling. Due to the inconsistent level of road construction in different regions, it is more likely to lead to bicycle accidents. Online virtual bike riding can avoid bicycle accidents to some extent.

Weakness:

Virtual bicycle scene

The virtual reality riding scene has two sides, which can bring a novel riding experience, but also make riders unable to feel the riding scenery in the real environment.

No group photo's

Because of the virtual reality technology, users can not get face-to-face experience, and cannot take photos with friends. This problem can be avoided to some extent by customizing characters in virtual reality.

Not conducive to the practice of real riding skills

Because virtual riding is not on the real road, it is not conducive to training real riding skills. Virtual cycling can play a role in assisting physical exercise.

Opportunity:

The covid-19 epidemic

Because of the COVID-19 epidemic, some people do not want to reach large crowds, so indoor virtual cycling can meet the needs of this group of people.

Expand other activities

In the long run, use virtual bike riding assets to precipitate

Promote the discovery that virtual cycling products can be quickly expanded to other sports.

Promote the discovery of new athletes

With the permission of the user, the virtual bicycle riding product can quickly collect the user's cycling data indicators, and the data analysis can quickly find the crowd suitable for the training of professional cyclists.

Various indices of every chosen youth and child are tested and the entire data even the gene index is inputted to create a virtual body that is trained in the virtual world and grows with various supposed indices. Then by the research on the index after the action, future body enginery level and kinetism can be evaluated, which tells us the prospect. (Wang, 2012)

Threat:

Cheating on a bike

Because it is an online virtual bike ride, some users will use software loopholes to cheat, which is unfair to other riders.

Through SWOT analysis, the virtual bicycle riding application benefits from the rapid development of the Internet. Since activities can be performed at home, it not only reduces the risk of outdoor cycling injuries but also is not affected by weather and environmental factors.

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The new crown epidemic has led to the rapid development of Internet services, which is conducive to the development of virtual bicycle rides. Because the riding data will be saved and published, potential athletes can also be quickly discovered through the app.

When the number of users is sufficient, other sports modes should continue to be launched to cover a wider user group.

Through social media. Especially with the unique creativities that make social media especially Instagram the most widely used for medium to small businesses. With the ease of technology now becoming instant by shopping online buyers can order and interact anywhere, make transactions by transfer and goods arrive at home. (Soegoto & Utomo, 2019)

At the same time, the virtual bicycle riding application also has some disadvantages, such as cheating and not being able to take pictures. Therefore, the development of the anti-cheating system should be strengthened, and functions such as custom appearance should be developed to increase the user's sense of substitution.

Travel modes

This picture shows the proportion of one-day travel structures in the Beijing area in 2022. The data are 40.3% for non-motor vehicles, 27.5% for cars, 15.5% for buses, 13.2% for subways, and 3.4% for others.

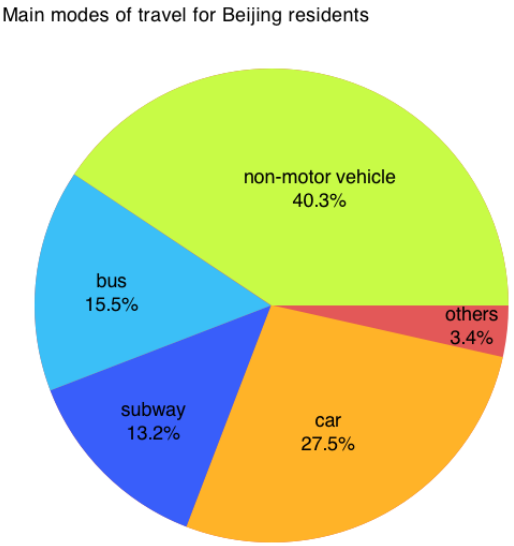

Figure 6 Main motivations for using social media
Source from zhihu.com

According to the statistical chart of the main travel modes of Beijing residents, nonmotor vehicles are the most important travel mode, and the number of people interested in cycling is larger. Therefore, the promotion of virtual bicycle riding applications can achieve better results.

Marketing Strategy

Citation
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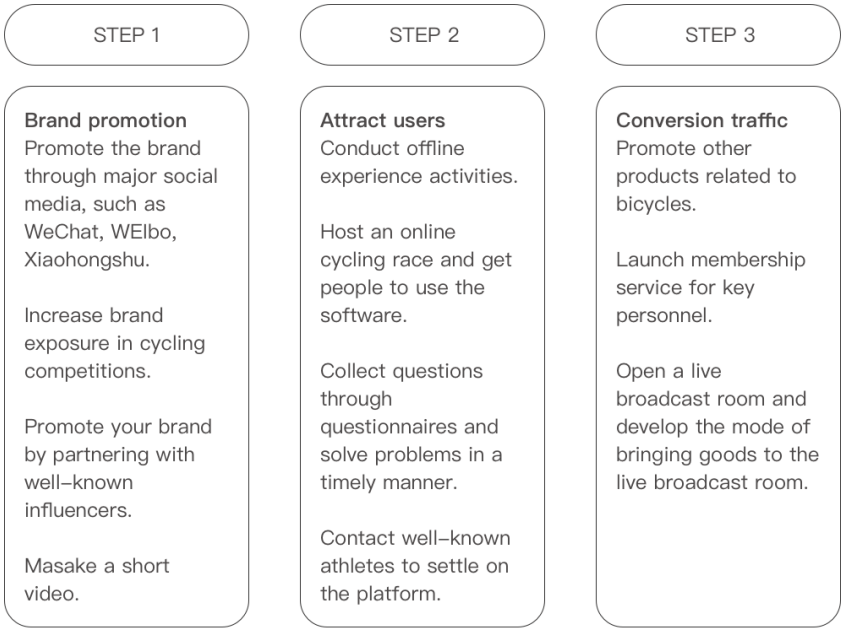

Figure 7 Marketing strategy
Source by author

Marketing Plan

Options	Quantity percentage
BUSINESS SUMMARY	The Development of Marketing Plan for a Virtual Cycling Application: The Case of Beijing China
BUSINESS OBJECTIVES	Explore and analyze the operation plan of bicycle virtual riding software in China (Beijing), and analyze the specific needs of Chinese people.
THE PROBLEM	How to create a bicycle virtual riding application suitable for Chinese people? What kind of strategies can help us solve the shortcomings of the software?
OUR SOLUTION	Invite cyclists to experience and publish videos before the app is launched to attract new users. Create hot spots on major social media, such as holding offline virtual bicycle riding experience activities. Enter the live broadcast platform and invite cyclists to experience virtual bicycle riding. Advertisement placement in bicycle races. Promote products according to the ranking of social media platforms most used by Chinese people.
COMPETITIVE ADVANTAGE	It is conducive to the development of social activities Not affected by environmental factors Adapt to the development of the Internet It's safer to ride a bike
TARGET	Cycling enthusiasts in Beijing

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Options	Quantity percentage
MARKET	
MARKETING STRATEGY & OBJECTIVES	Product marketing strategy According to the analysis of the main marketing methods, it is difficult to promote foreign products directly in China. The reason is that the consumption habits of user groups are different, the support of third-party platforms is not in place, and users are more willing to choose products that can find relevant information. Therefore, the promotion plan should be designed from the above three aspects. Service marketing strategy There are obvious differences between service marketing and product marketing, which are formed based on the intangible, heterogeneity, inseparability, and nonstorage characteristics of the service itself. Excellent service marketing should form users' perception of service quality, concept, responsibility attitude, and so on. Virtual reality technology requires not only strong technical support but also high-quality customer service. Therefore, it is necessary to strengthen internal management, improve service quality, provide service quality commitment to customers, and formulate high-standard service rules.

Discussion

The marketing strategies, advantages, and disadvantages of mainstream bicycle virtual riding software

Virtual bike riding is a safe way to ride and exercise, and there are already several companies around the world offering this service. His advantages are very significant, safe, and not affected by the weather environment.

Zwift has built a fitness world that is "part social media platform, part personal trainer, part computer game." This unique combination makes Zwift's APP appealing to both recreational riders and professionals who want to train outdoors.

One of the conditions for the company's success is that it can reach a wide range of users, from casual players to professionals, and provide excellent technical support, such as cycling milestones, professional post-race analysis, and open cycling clubs.

The demand analysis of the population that can be used for domestic marketing

Through the analysis of the application development of virtual bicycle riding, the analysis of the usage habits of Chinese Internet users, and the analysis of the travel mode and fitness willingness of residents in Beijing, China, a virtual bicycle ride suitable for residents in Beijing, China is obtained. How the app is marketed.

As can be seen from the user story research, being able to communicate with friends is one of the main needs, in addition to participating in club activities and the sense of accomplishment of completing bicycle riding are also the needs of most users. However, the existing virtual bicycle riding software services abroad cannot meet these domestic needs.

Establish marketing strategies for virtual cycling software in line with domestic commercial demand analysis

Through SWOT analysis, virtual bike riding applications benefit from the rapid development of the Internet. Since the activity can be carried out at home, the risk of injury from outdoor riding is reduced, and

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it is not affected by weather and environmental factors. In recent years, due to the pandemic, the rapid development of Internet services has been promoted, which is conducive to the development of virtual bicycles. Since riding data will be saved and published, potential athletes can also be quickly discovered through the app.

In the case of a sufficient number of users, continue to launch other sports models to cover a wider user group.

Virtual bicycle riding applications have not yet been popularized in China, and people know less about this new way of cycling, so it is an opportunity to develop such applications. By promoting virtual bike rides users can also spread the word about cycling and get more people to join.

However, in the background investigation, virtual reality technology is now widely used in various fields. Applying virtual reality technology to cycling allows people to complete cycling training indoors. In addition, based on different purposes, some software allows users to ride in different places around the world. It can bring a realistic visual experience. When virtual reality technology is integrated into cycling competitions, cycling enthusiasts can experience the cycling routes of athletes first-hand.

Promotion method

As far as cycling is concerned, the publicity method should be closer to the habits of cycling enthusiasts. Here are a few ways to advertise.

Invite cyclists to experience and publish videos before the application is launched to attract new users.

Create hot spots on major social media, such as holding offline virtual bicycle riding experience activities.

Enter the live broadcast platform and invite cyclists to experience virtual bicycle riding.

Advertisement placement in bicycle races.

Promote products according to the ranking of social media platforms most used by Chinese people.

Through SWOT analysis, the virtual bicycle riding application benefits from the rapid development of the Internet. Since activities can be performed at home, it not only reduces the risk of outdoor cycling injuries but also is not affected by weather and environmental factors.

The new crown epidemic has led to the rapid development of Internet services, which is conducive to the development of virtual bicycle rides. Because the riding data will be saved and published, potential athletes can also be quickly discovered through the application.

When the number of users is sufficient, other sports modes should continue to be launched to cover a wider user group.

Through social media. Especially with the unique creativities that make social media especially Instagram the most widely used for medium to small businesses. With the ease of technology now becoming instant shopping online buyers can order and interact anywhere, make transactions by transfer and goods arrive at home (Soegoto & Utomo, 2019)

At the same time, the virtual bicycle riding application also has disadvantages such as cheating and the inability to take pictures. Therefore, the development of the anti-cheating system should be strengthened, and functions such as custom appearance should be developed to increase the user's sense of substitution.

According to the statistical chart of the main travel modes of Beijing residents, nonmotor vehicles are the most important travel mode, and the number of people interested in cycling is larger. Therefore, the promotion of virtual bicycle riding applications can achieve better results.

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Conclusions

Through a survey in China (Beijing), we obtained the social software usage habits of people in the region and obtained data on news methods, consumption habits, travel habits, and other data. Based on this analysis, practical marketing plans can be designed. However, due to social development and changes, this marketing plan should be improved at any time according to social development and changes. For example, the SWOT analysis method determines the basic direction of enterprise development or product design based on the analysis of things at a certain moment. However, when the external environment changes, it needs to be re-evaluated, and future developments cannot be predicted. This study is mainly based on specific regions in the post-epidemic era. Future research can conduct statistical studies on future development trends.

Recommendation

The SWOT analysis method is based on the analysis of things at a certain moment and determines the basic direction of enterprise development or product design. However, when the external environment changes, it needs to be reassessed, and it is impossible to predict future development. This research is mainly based on specific regions in the post-epidemic era. Future research can make statistical research on future development trends.

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