

Retraction

Retracted: Prerelease Consumer Buzz: Current State of Research and Future Research Ideas

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Manipulated or compromised peer review

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] Q. Meng and Y. He, "Prerelease Consumer Buzz: Current State of Research and Future Research Ideas," *Journal of Sensors*, vol. 2022, Article ID 2948653, 18 pages, 2022.

Research Article

Prerelease Consumer Buzz: Current State of Research and Future Research Ideas

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Nowadays, merchants' marketing strategies have broken time and distance barriers, allowing consumers to interact with advertisements, and merchants can gather a large number of consumers' feedback at the same time. PRCB is proposed and used because it can engage and create consumers' interest prior to the release. Different from EWOM, PRCB is usually launched before product release, and such activities can be divided into three types: communication, search, and participation in experience activities. PRCB can accurately predict the development trend of products due to its dynamic nature, which was proven by introducing data on movie box office and movie trailer clicks. In addition, the VSM platform (HSX) is also introduced to show consumers' expectation and interest in new items by analyzing the evolving trend of the stock market. Finally, this paper discusses the universality of PRCB in different consumer groups and the research direction to further improve its prediction accuracy.

1. Introduction

Advertising has invaded people's lives like a virus.

Since commercial activities were invented, advertising has always surrounded us and affected our lives. No one is sure when advertising was invented and the form of it evolved from slogans, chants, and billboards to the best-sellers and celebrity recommendations online that can be seen everywhere on the Internet. With the rapid development of the Internet, people are much closer, and communication methods are no longer limited to face-to-face communication. Young people tend to express their opinions in other ways, such as by sending messages and posting blogs and comments; meanwhile, they can collect information from all over the world and follow friends' updates. On the other hand, the number of online commercials increases dramatically. Owing to the development of consumer data analyzing systems, companies can have a better understanding of their customers; thus, advertisements can

appear in the right place at the right time, which in turn improves the marketing effectiveness. The advertisements and related information are no longer restricted by time or space. Consumers can learn about product-related information immediately, and businesses can collect numerous consumer reactions and comments in a short time which help them improve products and marketing strategies.

However, only focusing on users' feedback and advertising impact are not enough to maximize the efficiency of marketing. Therefore, marketing experts and scholars are trying to find a new marketing method as a supplement to enable companies reach consumers earlier and arouse consumer interest and desire even before the product launch, in order to boost sales. That is when PRCB was invented.

However, the existing researches on PRCB are still very limited. There are even some articles that confuse the concepts of PRCB and WOM. Houston et al. [1] defined PRCB as a collection of noticeable expressions of consumers for upcoming products. This view was also quoted by

subsequent researches and used as the definition of PRCB in this article. In addition, there are several questions as follows: How to distinguish PRCB and WOM? What factors contribute to the spread of PRCB? Why do researchers adopt PRCB as a marketing method?

The main purpose of this paper is to summarize the current research situation of PRCB from the perspectives of theoretical background, the driving factors, and the role of PRCB by sorting out and analyzing the existing literature, combined with the above problems, and combining big data analysis tools to find the shortcoming of the existing research situation of PRCB, and suggestions can be provided for future research directions.

1.1. Thesis Structure. This article is divided into five chapters. The second chapter illustrates the relevant theories of PRCB. The dynamic characteristics of PRCB is the main focus of this chapter. In addition, this paper also clearly distinguishes PRCB and WOM, and at the end of this chapter, it introduces the applications in the film and automotive industries, especially the significance of big data analysis to the promotion of PRCB. The third chapter rules out the influence of the Internet and mainly concentrates on the driving factors, consumer motivation, and marketing strategies of PRCB. The fourth chapter demonstrates PRCB's prediction effect about upcoming products and its impact on the future performance of products. The last chapter will draw conclusions, discuss its impact, identify research gaps, and propose future research directions.

2. Theoretical Background

The search process of this paper: Firstly, define the research question of the paper, and determine the keywords and phrases. Secondly, set the limitations of literature search, such as year, language (English), and source reliability. In addition, synonyms and antonyms related to keywords are also included. For example, when searching PRCB-related researches, keywords such as Product Buzz, WOM, and EWOM should also be searched. Then, relevant journals and scientific articles are searched in the scientific database. Common scientific databases include EBSCO Host, Google Scholar, GBV, and so on. Finally, through reading relevant articles, the research themes and viewpoints are compared, analyzed, and integrated in this paper.

As shown in Table 1, the researches required in this paper are mainly from EBSCO Host. When prerelease buzz is typed in, there are 26 results, and by adding requirements (type, release date, and language), the search results are reduced to five. In addition, when searching for prerelease buzz and WOM, the results are 2. The number of studies related to WOM is huge; when searching WOM and Product, there are still 528 relevant journals even with research restrictions. When another important keyword Dynamic is added, the search results are 46. This paper discusses the current status, driving force, and influence of PRCB from three aspects, puts forward several main viewpoints, and demonstrates the relevant viewpoints in important studies. In addition, the list of references of several important journals also plays a great role in the literature search of this paper.

2.1. Prerelease Consumer Buzz. The sales of products always come along with the marketing methods. However, in the modern world, with the rapid development of the Internet, consumers can collect more product information from others except the company. Advanced technology provides consumers with purchase recommendations and guidelines by word of mouth.

In addition, marketers are seeking more accurate and more efficient marketing methods in order to further improve marketing efficiency and attract more consumers. PRCB is drawing more and more attention as a significant tool.

At present, there are not many relevant studies and documents on PRCB. As shown in the literature table (Table 2), many researches do not make a clear distinction between PRCB and WOM mentioning PRCB as a synonym for WOM. Broekhuizen et al. [2] refer to PRCB as a situation in which consumers know the existence of new products, but have no access to its quality. Even in such a situation, PRCB can still predict the prospects of new products and help companies make judgments in advance. Xiong and Bharadwaj [3] also regard PRCB as a reflection of consumers' interest level and purchase likelihood.

Furthermore, as shown in Table 2, Houston et al. [1] defined PRCB as a collection of noticeable expressions of consumers for upcoming products. They clarify the time of buzz that is before the new product release, and that is the main difference between WOM and PRCB. Generally speaking, PRCB is usually launched through the Internet, such as platforms, discussion forums, websites, and news groups. On the other hand, the role of offline PRCB cannot be ignored, such as various activities of fan groups and promotional activities.

The PRCB operates through a series of marketing methods, such as advertising on Internet platforms, social media, star live broadcasts, and movie trailers. The purpose is to increase the popularity of the product as much as possible before the product is released, so that more potential consumption people learn about the product, discuss it, and become interested. In this process, the customer data information processing function provided by big data plays a crucial role in improving marketing efficiency.

2.2. Three Types of PRCB Behaviors. PRCB can generally be divided into three categories: communication, search, and experience activities.

First of all, consumers can directly communicate and discuss with other consumers or marketers through various platforms and forums (car fan forums) or official product websites, social media updates (Twitter, Facebook), etc. Thus, they can acquire the product parameters of the upcoming products and other consumers' views and expectations [4].

In addition, search behavior is also an important part of PRCB [5]. Even Ho et al. [6] believe that only search behavior is the criteria for buzz. Consumers' search behavior is usually seen as a clear signal of interest on products and trends. There are many search ranking websites that are widely recognized and followed by the public such as MovieMeter and StarMeter rankings by the IMDb.

TABLE 1: Overview of partial primary journals search results.

Database	EBSCO host			
Fields	Prerelease buzz	Prerelease buzz and WOM	WOM and product	WOM and product and dynamic
Primary search results	26	2	677	49
Limit to				
Source types (academic journals)	5	2	554	46
Publication date (from 2000)	5	2	545	46
Language (English)	5	2	528	46

Source: own creation.

Finally, PCRb can boost consumer communication and active search behavior as well as encourage consumers to participate in product experience activities, like watching movie trailers on YouTube. Whether the audience clicks to view the trailer before the premier is an important indicator of success. The trailer of Marvel's Avengers 4 was played as much as 289 million times [7] within 24 hours after it was released. As expected, the movie finally achieved a box office of \$2.8 billion [8] after the release.

Apart from these online behaviors, offline activities also play an indispensable role. For example, a particularly common phenomenon in China is that the directors and celebrities will go to major cities across the country to hold movie conferences before the premier. The attention to the conference and the attendance in premier can also reflect the expectation level for the movie. For those adaptations of books and novels, the news of the movie can also increase the sales of books and the click numbers of the e-books [9]. These data can also reflect the popularity of the movies. In terms of the series movies produced by film magnates such as the animated movies of Marvel or Disney, the sales of related peripheral products are also worth noting.

2.3. Characteristics of PCRb. Researchers believe that PCRb has three characteristics: visible, positive, and dynamic.

First of all, PCRb is visible, both in behavior and impact. PCRb can be easily perceived by consumers through social observation [5, 10]. For example, observing the company's performance in the stock market before issuing a new product is a prevailing method. The stock market can act as predictions about the company's new products or services based on PCRb data, which would be reflected in the changes in stock prices. In the film industry, marketers would use the trend of certain data of the movie on HSX to understand consumers' interest and then predict the TV's reaction after it is released [11]. The specific content will be described in details in the next measurement and evaluation section.

Second, the value of PCRb is usually positive, but there are exceptions [12]. Based on the predication of PCRb, the enthusiasm of buzz is generally manifested as consumers' interest in the upcoming products [13]. The positive degree of interest is also closely related to the popularity of the brand and the intensity of PCRb behavior [14].

However, there are two conditions that may cause a negative impact from the PCRb. On the one hand, excessive

PCRb publicity would cause some consumers to have a rebellious mentality, who would then choose not to buy and try the product. Consumers have high evaluations of movie trailers and high expectations for the movie, but after the actual release, the audience feels deceived, which might immediately reverse the reputation of the product and have a negative impact on the subsequent product marketing [12].

The last feature that this article focuses on is the dynamics of PCRb. Elberse and Eliashberg [11] studied the short-term market of the film industry and believed that buzz is dynamic and its influence may disappear soon. Dynamic effects mean that a person's attitude towards a particular topic or product will be affected by the interest or support from their peers on the topic [15]. Buzz can quickly spread like a virus with the help of tools like social media. Its coverage and impact are constantly changing. The cumulative number of PCRb in the past can reflect the degree of viral effect, and the number of buzz in the past also influences and determines its future counterpart. This relationship confirms the dynamic feature of PCRb [14].

Past studies usually predict the prospects of a new product based on the number of PCRb, but the result is not accurate, if it is just based on the cumulative number of PCRb. Some products, such as a sequel to a well-known movie, may raise a heating buzz right at the beginning. However, people may have a negative emotion through deeper understanding of the movie (the cast, the feeling of the trailers), and there may be a downward trend in buzz. Such movies usually do not achieve a huge success. Therefore, apart from the total amount of PCRb, the dynamic trend of PCRb also plays an important role [3].

Xiong and Bharadwaj's research examines the relationship between the dynamics of buzz changes over time before product release and the performance of new products. Based on the data they collected, they drew the change curve of PCRb. They concluded that the current status of the PCRb curve significantly increased the ability to predict the performance of new products. Moreover, the increasing trend of purchase intention would indicate the increasing possibility of purchase [16].

Some sociological theories also provide theoretical support for the above predictions. For example, in the process of election campaigns, candidates with a downward trend in the poll usually lose, while candidates with an upward

TABLE 2: Literature table of the core literatures.

Study	Product	Data	Method	Dependent variables	Independent variables	Findings
Chen et al. [60]	Movies	Secondary data	Regression; event study	Firm valuation (stock price)	Third-party product reviews (TPR) for new products	TPR plays an important role in investor expectations for new products. TPR affects stock prices.
Divakaran et al. [26]	Movies	Secondary data from Fandango	Structural equation modeling	Market performance (box office sales)	Community variables (total member participation, total member comments, average rating and voting) and general variable	Four community variables have a positive and significant impact on box office revenue. Community variables have significant mediating effect on three generic predictor variables.
Elberse and Eliashberg [11]	Movies	Secondary data	Regression; dynamic simultaneous-equation model	Movie box office revenue	Drivers of PRCB and interrelationship of the behavior of consumers and retailers	Driving factors such as advertisements and reviews indirectly affect movie revenue by affecting the number of screens. Buzz is dynamic.
Hennig-Thurau et al. [49]	Movies	Secondary data	Auxiliary regression; simple slope analysis	Movie box office revenue	Consumers' and reviewers' perceptions; movie success factors	The correlations between reviews and box office success are positive; isolated reviewer quality perceptions influence long-term box office returns in a nonlinear way.
Hennig-Thurau et al. [67]	Movies	Secondary data	Regression; multistage sentiment analysis	Product adoption behaviors; movie box office revenue	MWOM (Twitter effect), drivers of film success	MWOM has a significant impact on the use of newly released products. Marketing tools such as advertising are important drivers for MWOM.
Houston et al. [1]	Movies	Secondary data for 254 new products (movies)	Interview; regression	Movie success (box office)	PRCB behavior of consumer	PRCB has three distinct types of behaviors (communication, search, and participation in experiential activities). PRCB data can predict and promote the future success of the product.
Liu [27]	Movies	Secondary data from Yahoo Movies website	Regression	Movie box office revenue	Buzz before and after product launch	The volume of WOM/buzz offers significant explanatory power for box office revenue, both in the aggregate and for the early weeks.
Srinivasan and Hanssens [61]	Free product	Secondary data	Empirical analysis; stock return response model	Firm valuation (stock price)	Marketing (brand equity, customer equity, customer satisfaction)	A company's management actions can increase or decrease shareholder value. Advertising directly affects stock returns.
Xiong and Bharadwaj [3]	Video games	Secondary data; functional data analysis; FDA method	Regression	New product performance	The curve of prerelease buzz evolution trajectory; firm stock returns before product release	The PRCB evolution track curve can more accurately predict the performance of new products. PRCB is reflected in firm stock returns before product release.

Source: own creation.

trend are likely to succeed in the end [17]. Hillary Clinton is such an example. In the US presidential election, Hillary Clinton's approval rating fell constantly after the exposure of scandals. In the end, she lost to Trump. Kenney and Rice [15] believe that an increasing trend can (1) generate infectious excitement; thus, people would provide support almost instinctively; (2) force people to follow the trend and obtain emotional satisfaction; (3) constantly improve the status of

the subject in people's minds; and (4) make people believe that the subject is bound to succeed. These also lead to the fact that when a person finds that more and more people support the candidate or are interested in the new product that is about to be launched, he would persuade himself to support the candidate or product, even if he does not understand the candidate's policies or the functions of the new product [18]. This also inspires people to put "Today's

Hottest Topics” on the homepages of social media sites. The rankings make it easier for people to spot the most popular topics over time and identify new products. In addition, the dynamics effect also shows that the upward trend of early buzz can indicate a further increase in consumer interest as the product is being launched.

The trend of PRCB can be divided into two types (here, the typical stable curve will not be taken into account), rising and falling trends. Merchants are pursuing the upward trend of buzz, because over time, the increasing trend of purchase intention would mean an increasing likelihood of purchase [16]. The opposite downward trend means that consumers have gradually lost interest in the new products. Even if it succeeded in attracting attention at the beginning, these products are less likely to succeed [3].

In order to capture and analyze the continuous evolution process of PRCB more accurately, the mathematical function FDA method is introduced. Its main feature is that the data of the continuous change of PRCB can be shown in a curve, and each curve can be analyzed as a single observation subject [19]. The advantages of FDA are obvious. It can use all relevant information and data of the PRCB behavior to integrate the entire process of buzz until the product is released. Therefore, FDA is more and more popular with statisticians. In addition, the FDA method is often used to check market penetration [20] and movie virtual stock price [21].

2.4. Two Evaluation Criteria of PRCB. PRCB is a general phenomenon, that is, a collection of individual consumers’ behavior on upcoming products. Because of the diversity of PRCB behaviors, the measurements of PRCB also need to be varied. It mainly involves two dimensions, the number of observable PRCB behaviors and the degree of dispersion of behaviors in consumers, which is also known as “popularity” [1].

Therefore, as an enterprise, the purpose of PRCB operations is to generate the most consumer responses in the widest possible range, and the number of PRCBs is also the easiest data to identify and count in actual research.

Currently, there are many methods to count the number of PRCBs; for example, before a movie is released, PRCB behaviors include comments on the trailer and stars, view times of the trailer, and the percentage of audience who are willing to go to the cinema [22]. In addition, the number and frequency of people searching or clicking to view popular content (Twitter and Weibo) can also be used to measure the level of PRCB [23]. Sharing online music streams on social media [24] and the high citation rate of journal articles [25] are also worth attention.

In the film industry, view times of the trailer is the most common data collected to measure PRCB. For example, according to Marvel’s official statement, the trailer of Avengers IV released in December 2018 had been viewed 289 million times in the first 24 hours, which successfully broke the record of 230 million times achieved by the last one “Avengers: Infinity War.” In addition, the discussion about the trailer was mentioned 549 thousand times on Twitter alone, which also surpassed the previous record held by “Avengers: Infinity War” (389,000) and “Black Panther” (349,000) (IMDb).

Many movie websites, such as IMDb, would specifically score and rank unreleased movies. And the trailer view times and the number of comments are important criteria for the website to score movies. It can not only recommend high-ranking movies to consumers but also play a role in predicting its box office success in the future. In 2021, there are quite a few big movies that have released trailers. For example, the Marvel movie “Spider-Man: No Way Home” starring Tom Holland and Benedict Cumberbatch is now ranked eighth on IMDb. The top one is another Marvel movie “Shang-Chi and the Legend of the Ten Rings” (IMDb).

Divakaran et al. [26] also conducted in-depth research on this: generally, marketers and experts use general variables such as production budget, advertising, awards, major stars, and word of mouth to predict the prospects of movies, but these variables cannot reflect consumers’ experience and the social recognition. Liu [27] found that a movie’s heat measured by the popularity of online discussions can effectively predict its box office. However, relevant studies mostly focus on the prediction and influence of variables on the further box office after the film is released. For a product with a relatively short life cycle, it is unreasonable to predict the success of the film only after release. More extensive community data which can reflect the PRCB have also been applied, that is, the community’s level of awareness, word of mouth, expectations, and willingness to adopt. These data appear and are collected before the movie is released [26].

- (1) The total participation rate of community members reflects the level of community awareness. The number of consumers with PRCB behavior can be used to measure the level of awareness in their community, and a higher level of awareness may lead to higher sales [27]
- (2) The number of comments about upcoming movies is used to measure the reputation of the community
- (3) Consumers can rate the upcoming movies on the website, and the average rating of each movie reflects the interest and expectations of community members for this movie
- (4) Community members would also vote to show their intention to watch the movie (positive or negative)

In addition, the “Awareness” variable and “Intent” variable can be used to measure the popularity of PRCB behavior in the film industry. The “Awareness” variable refers to the total number of views on movie websites and comments received. There are many websites doing such collection. For example, TrailerAddict (<http://www.traileraddict.com/>) would provide weekly play volume of trailers, while the website ComingSoon (<http://www.comingsoon.net/>) can display audience reviews of movies [22]. Moreover, the number of views and comments is a more important predictor than the content [28].

The second variable graph intends to show the percentage of people who intend to watch the movie. Compared

to “Awareness,” “Intention” focuses on the audience’s interest and motivation for going to the movie. On the Fandango website, consumers can buy tickets on each movie’s webpage, and they can also rate the movie on the user’s rating page to show their eagerness. Finally, the website will calculate the proportion of people who are eager to go to the cinema to the total number of reviews, which reflects people’s emotions and possibility of going to the cinema [22].

In addition to the number of PRCB behaviors, the prevalence of PRCB is also an important criterion for measuring and evaluating PRCB behaviors. As mentioned before, the spread of PRCB is viral. The degree of prevalence refers to whether PRCB behavior for new products can be spread to more different consumer groups. Under normal circumstances, an intensive PRCB would make consumers feel that the information about new products is ubiquitous in the entire world, rather than several consumer groups or specific channels [1].

The Internet not only provides abundant information to explore the world but also provides more diverse choices at material and spiritual levels. Besides traditional e-commerce, there are now countless niche markets that play a very important role [29]. Gone are the days when the Billboard Top 40 dominated the music market. In this new era, bands and musicians which play heavy metal, acid rock, and other nonmainstream music styles also have their own fan bases [30]. The niche products are gradually accepted by ordinary consumers which also confirms the popularity of PRCB.

According to whether they are interested in new products, consumers can be divided into two categories. For example, in the car industry, when a company releases a new model, the potential consumers are not limited to those who are already interested in the brand or model. The sales they can contribute are limited. Those who are not interested in car brands and new products may be affected by PRCB and choose to buy the new model. This phenomenon is also common in the film industry. For example, the number of fans of the Marvel movies or a particular star is limited. Whether ordinary consumers can be attracted to buy tickets and go to the theater determines the success of the movie box office [31].

Finally, in some researches, consumers would be divided into different age groups, collect the corresponding data, and analyze the acceptance and popularity of PRCB in different age groups [1].

2.5. Difference between PRCB and WOM. Since PRCB is a relatively new concept, many documents do not give a clear definition of PRCB; thus, PRCB and WOM are often mixed. In fact, there is a clear difference between PRCB and WOM.

First of all, word of mouth refers to consumers’ views and reputations about a company, product, or service. Marketers use advertisements and other publicity activities to enable the consumer to have a more comprehensive understanding about the products or services and generate interest, so that they may discuss about the products with others in their daily lives. In the past, the dissemination of WOM was usually advertising or face-to-face communication, and the scale of people’s influence was very small

[32]. However, with the development of the Internet, the explosive growth of social media has greatly changed the scale of word-of-mouth communication, and EWOM such as Twitter, Facebook, and Weibo also begins to play an increasingly important role. That is to say, the influence of WOM has been further expanded [12]. At the same time, PRCB behavior has also received more and more attention with the rapid development of social media; thus, how to distinguish PRCB and WOM has become a very important issue. The following figure describes the time of PRCB behavior and the WOM behavior when they occur.

As shown in the figure 1, consumer behaviors are divided into PRCB behavior, preconsumption behavior, and WOM behavior according to the release time and purchase time of the product. Before the product is released, Consumer A, as an innovator, participates in the PRCB activity out of anticipation of the new product and adopts the new product shortly after the product is released. After the product is released, two different groups of consumers engage in product-related communication and other behaviors: Consumer B purchases the product shortly after the product is released and writes comments after experiencing it. Consumer C makes the final decision based on the user experience and reputation of the product.

According to the difference time in information, content, and consumption behavior as shown in the picture, the basic conclusions are as follows:

- (1) The PRCB of a product usually has a positive impact on consumers’ buying behavior, prompting consumers to buy the new product as soon as possible
- (2) After consumers use the product, they would form user experience which constitutes WOM. In return, this WOM would affect the purchasing behavior of other potential consumers [32].

The available information sources before and after the product release are different: before the release, only the basic product information released by the company and the evaluation of the product by some reviewers are available. Therefore, in the PRCB marketing process, good brands represent good quality assurance, which will make consumers have positive expectations. Also, during the product prerelease period, the successful and personal consumption experience about the product is not available, but these experiences play a crucial role in the later WOM [3].

In addition, Griskevicius et al. [13] pointed out that consumer emotions play an important role before and after product launch. Before the product is released, consumers have a great interest in the unreleased product. Anticipation would stimulate an unsatisfied and continuous desire which is a positive emotion. This sentiment would prompt consumers to take further PRCB behavior, which in turn enhances their expectations for the product. And their PRCB behavior would increase the popularity of new products.

Then, the different consumer behaviors before and after the product release would cause different results during dissemination. Houston et al. [1] divided consumers into

innovators and imitators. PRCB behaviors would affect the purchase trend of innovators when new products are released. But WOM occurs after the product is used; imitators would decide whether to buy the product based on the comments of other consumers who have already used the product.

2.6. AIDA Model. The AIDA model identifies the cognitive stages an individual goes through in the process of purchasing a product or service. It is a purchasing funnel where buyers go back and move through each stage to support them in making their final purchase [33].

- (i) *Awareness*: creating brand awareness or affiliation with your product or service.
- (ii) *Interest*: generating interest in the benefits of your product or service, and sufficient interest to encourage the buyer to start to research further.
- (iii) *Desire*: for your product or service through an “emotional connection,” showing your brand personality. Move the consumer from “liking” it to “wanting it”
- (iv) *Action*: CTA—move the buyer to interact with your company and taking the next step, i.e., downloading a brochure, making the phone call, joining your newsletter, or engaging in live chat, etc.

It is no longer purely a buyer and company relationship, as social media has expanded to achieve AIDA’s different goals through information added by other customers through social networks and communities [34].

In the PRCB marketing strategy, the AIDA model is also regarded as an important means to evaluate the marketing effect of PRCB, that is, to attract the attention of consumers (using trailers or web advertisements), so as to generate interest in consumers and actively participate in the next steps of the merchants. For prerelease products, the action here is mainly to preorder the product and buy it first.

2.7. Industry Characteristics

2.7.1. Film Industry. With the development of Internet technology and the stability of society, the entertainment and media industry has achieved rapid development compared with the traditional industry. As the representative of the entertainment industry, film plays an increasingly important role in people’s life [35].

In the 21st century, social media has gradually become part of everyone’s life, and streaming platforms like YouTube have become an important way to distribute movies and related videos [36].

When it comes to the commanding heights of global films, the first name would be “Hollywood.” Hollywood is located in the suburb of Los Angeles, west coast of the United States. It is the world’s largest film production base and becomes synonymous with the film. Nowadays, superhero movies make a great contribution to Hollywood movies. In 2020, the superhero movies “The Birds of Prey,” “Joker,” and “Wonder Woman

1984,” among others, collected a combined box office revenue of nearly 141 million U.S. dollars. Furthermore, 2019’s “Avengers: Endgame” set a box office record of 2.8 billion dollars worldwide [8].

As a global distribution system, the domestic box office only accounts for about 30% of Hollywood’s total box office, with nearly 70% coming from the global market.

As shown in Figure 2, the global film market is divided into four major markets: North American market, European and part of African markets, Asian market, and Latin American market. Revenue in the world film market was on a steady upward trend until 2020, but these figures went down sharply from previous years due to the coronavirus pandemic. Thousands of cinemas were forced to close down worldwide throughout most of 2020. The 2019 global box office revenue was \$42.2 billion which was a great achievement compared with \$12 billion in 2020. Among them, due to the early resumption of the film industry, China’s box office revenue in 2020 exceeded 20.417 billion Yuan (3.1 billion US dollars), surpassing North America (2.1 billion US dollars) and becoming the world’s largest film market [38].

2.7.2. Characteristics of the Film Industry. Many characteristics of the film industry make it an ideal subject when people study PRCB. First, the film industry is extremely profitable, with its global box office reaching over \$42 billion in 2019 [39]. A successful film not only draws a huge fortune from the box office but also gathers fans of the film companies and the series movies. Therefore, movie sequels often get great attention and PRCB before they are released and finally make considerable income.

Secondly, films are typically a product with a short life cycle, as they usually achieve most of their sales in the first few weeks after release but plummet afterward [40]. Typically, movies are first shown in theaters, then sold or rented by DVD, then released on VoD/pay-per-view services on the Internet or cable, and finally aired on television. The life cycle of a film in cinema is short and never really goes beyond three months [41].

Third, movie exhibitors, namely, cinemas, often have great power and can exert a great influence on the box office. Exhibitors determine the number of screens each day, and ticket sales are largely dependent on it. In addition, the publicity effect of theaters starts far before the release, and a potential movie can display its own huge poster in the theater foyer, which also greatly increases the exposure.

The great risk is also an important feature of the film industry. Risks can be broken down into several aspects: high budgets, low odds of success, and the difficulty of prediction.

Only a very small percentage of films can succeed, and failures are common, especially for films made by small studios. Even in Hollywood, successful hits are not the norm, but the exception. In fact, according to Insider, 279 Hollywood movies have a 1 : 1 ratio of profits to losses. Based on data from another 4,526 films, 37% are likely to make big profits, 4% are likely to make small profits, 9% are likely to lose, and 50% are almost certainly to lose [42].

Moreover, there is no way to accurately pick out the successful one out of hundreds of films, and the difficulty of

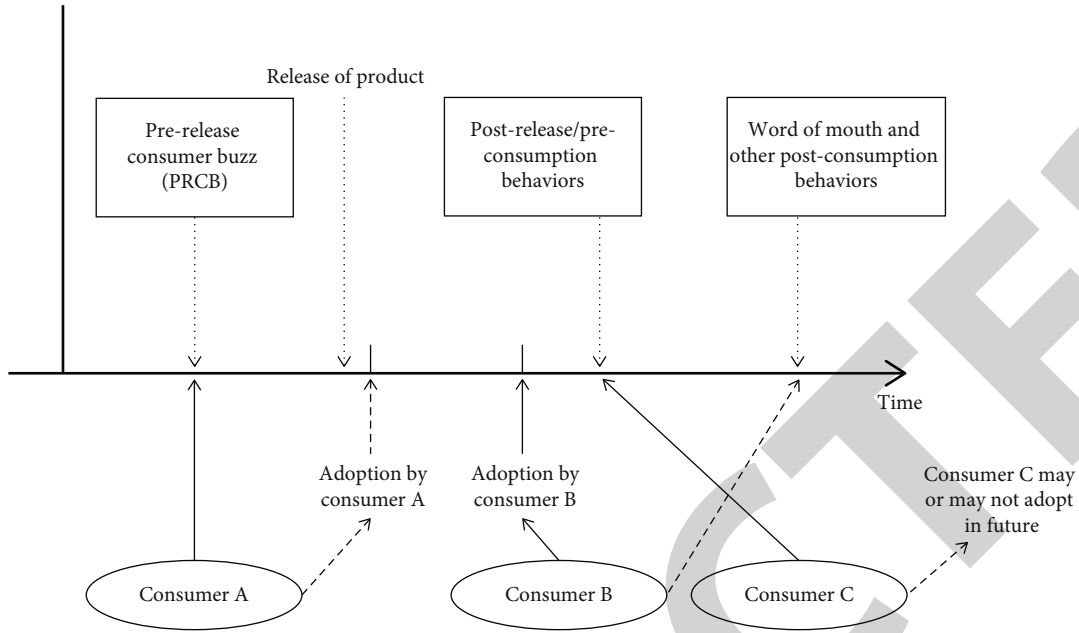


FIGURE 1: Difference between PRCB and WOM. Source: Houston et al. [1].

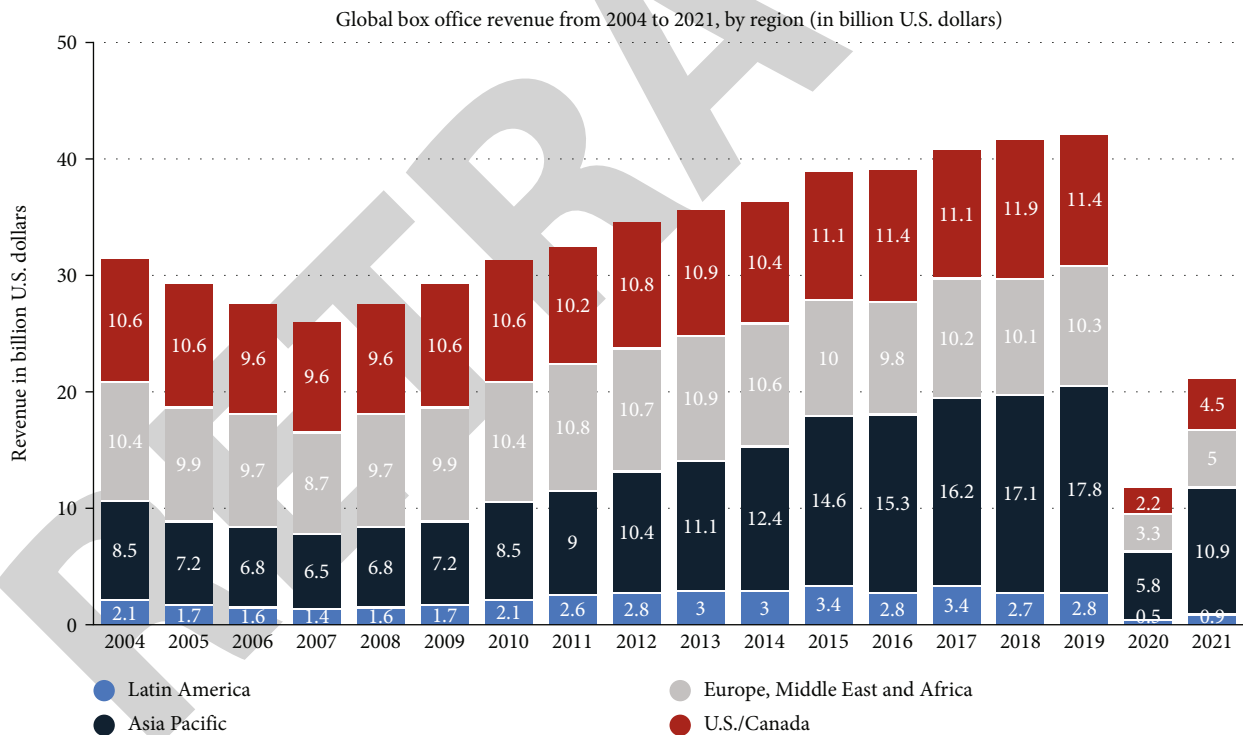


FIGURE 2: Global box office revenue by region from 2004 to 2020. Source: Statista [37], <https://www.statista.com/statistics/264429/global-box-office-revenue-by-region/>.

predicting has always been a headache for investors. As a result, PRCB research has become increasingly important in the quest to better predict the future of movies [40].

2.7.3. *Car Industry.* In the current automobile market, there are many brands of vehicles, and the models are complex and diverse, and consumers are caught in serious selection dif-

ficulties. In this complex marketing environment, many 4S stores of car dealers take this opportunity to discover the problems existing in PRCB and optimize them, attract consumers through their own PRCB system that is ahead of their opponents, gain a certain market advantage, and attract consumers.

The presales marketing of automobiles mainly includes market promotion, customer data collection, analysis and

maintenance, sales reception process, test drive, and auto financial services.

Problems with PRCB are as follows:

(1) PRCB marketing methods are too single

Generally speaking, 4S stores use radio broadcasts, car websites, large billboards, car conferences, etc. These traditional marketing methods lack innovation, are difficult for arousing the interest of consumers, and have not produced enough BUZZ.

(2) The role of WeChat marketing and live video platform marketing is ignored

WeChat realizes one-to-one communication. While serving as an information push tool, WeChat can also become an important channel for maintaining customer relationships. In addition, many companies, such as a Lexus 4S store in Dalian, did not provide basic company profiles, model introductions, and other information on their WeChat public accounts. Consumers want more attention from companies, rather than simple information pushes.

(3) Lack of CRM

This Lexus 4S store has been established for 7 years and has accumulated more than 4,000 customers, but has not yet established a dedicated Lexus car owner club, ignoring the emotional communication between the company and customers, and failing to improve customer satisfaction and loyalty, and also, a large number of potential car buyers around the car owners have been lost.

(4) Problems with customer data analysis

The customer big data analysis and maintenance system of this Lexus 4S store uses the customer relationship integration system (I-CROP system). The I-CROP system is a system provided by Lexus manufacturers to all Lexus marketing stores across the country to input customer information for data mobile and maintenance.

The I-CROP system has a single analysis function and can edit and input limited information. Only some basic information can be input, such as customer name, intended model, date of visit, contact number, follow-up date, and standing information of consultant notes, but it can be used for big data analysis. Information on customer characteristics, such as customer age, gender, occupation, birthday, existing vehicles, and hobbies, cannot be entered. This will cause the I-CROP system to be unable to segment customers, which will affect the 4S store in adopting appropriate marketing strategies.

The optimization strategy is as follows:

(1) Traditional advertising, price concessions, and promotional activities have been unable to meet the current marketing needs. It is necessary to increase investment in PRCB strategies, establish stable target consumer maintenance channels, increase consumer education means, and conduct regular lectures and

targeted marketing campaigns. Many activities are used to strengthen the interaction and trust between enterprises and customers

(2) Vigorously promote the network effect and use WeChat, Weibo, live broadcast platforms, and other means to increase the scope of advertising information. For example, the most widely discussed online marketing method is WeChat marketing, which now has 900 million active customers. Then, it is an important task for enterprises to make good use of WeChat groups and WeChat public accounts, do a good job in the dissemination of PRCB, and arouse the interest and discussion of potential consumers as soon as possible

(3) Influencer marketing is also a marketing method that cannot be ignored at present. Many companies promote new products through live broadcasts or recorded promotional videos by sponsoring well-known Internet bloggers. This is also very common in the automotive industry, and the promotion of the Internet celebrity PRCB even started six months before the launch of the new model

(4) Customer big data analysis and optimization

Efficient PRCB marketing puts forward high requirements for the classification of customer groups; that is, different types of PRCB content and methods need to be adopted for different consumer types. This requires the establishment of a customer file table, according to the consumer's consumption records, browsing records, gender, consumption habits, and consumption ability information to establish personalized customer files, which can be used together with the I-CROP system.

2.7.4. Music Industry. In addition to the film industry, the music industry has also contributed greatly to the study of PRCB, with a total industry value of \$21.6 billion in 2020. Different from the film industry, the biggest characteristic of the music industry is the high proportion of streaming media. In fact, most music is listened to and transmitted through the Internet, and the traditional record market has been unable to meet the daily needs of consumers. According to figures of 2019, streaming accounted for 62.1% of the music industry's revenue, followed by 19.5% of physical music and 10.6% of Performance rights. And streaming revenues continued to grow and increase by 18.5% in 2020 [43].

In 2018, Americans spent more than four hours a day listening to music, ordering more than 1.2 trillion songs, and nearly 90 percent of their social media activities were music-related [44]. Both movies and music are entertainment products that can provide people with pleasure and benefits. In addition, the PRCB behaviors of e-books and video games also receive increasing attention. Therefore, the application of PRCB in the entertainment industry is ubiquitous.

3. Drivers of PRCB

After the definition of PRCB is clearly defined, the driving factors are on the top list that many scholars and marketers are

eager to find out. This paper integrates previous studies and divided the driving factors of PRCB into objective factors and subjective factors. Among them, objective factors refer to factors that exist objectively and can influence the spread of PRCB, including network effect and virus effect. In contrast, subjective factors refer to the factors that can influence PRCB behavior based on people's will and behavior, such as consumer motivation and marketing methods [1].

3.1. Social Network Effect. Firstly, with the rapid development of Internet technology, people's lives have changed greatly. This means people can obtain information from more diverse sources, and the face-to-face communication has gradually been replaced by messages on social media. Therefore, communication breaks through the limitation of time and space and can be immediately delivered to the right target no matter when and where. According to Global Webindex, there are 4.48 billion active social media users worldwide (56.8% of the global total), and the number is growing at a rate of 13.1% per year. In particular, DataReportal specifically made a report to identify the trend of social media users during the COVID-19 lock-in period in July 2020. Overall, people's online activity significantly increased, compared to the data of January 2020. The number of active users in beauty and apparel sections alone increased by 490 million (13.2 percent) in one year. To be more specific, 54 percent of users spent their time on watching more videos or movies online, 43 percent on social media, and 36% on other apps and 35% play longer video games and so on [45].

Social media has promoted the development of various social platforms. Currently, the world's most popular social networking platforms include Facebook, YouTube, WhatsApp, etc. From the data of Facebook, males and females aged 18 to 34 are the largest user group [45].

For many teenagers, cell phones have become an important part of their daily life. 89% of American teenagers have their own cell phones, and the average time they use cell phones is more than two hours [46]. And almost all American teenagers (95%) say smartphones help them to connect with others, kill time, and learn new things [47].

The rapid development of social media, especially mobile phones, provides PRCB with great spread channels, enabling PRCB to reach a wider customer base at a faster speed.

3.2. Viral Effect. In addition to the convenience brought by the development of the Internet, another objective driver of PRCB is the viral effect of buzz. The transmission modes of PRCB and viruses are similar. With the aid of the Internet, so many customers could be infected through contact-relevant information (usually online communication, search, or other activities), and these consumers would further promote PRCB via email, website bulletin board, news, chat rooms, blogs etc. Therefore, the previous number of buzz is decisive to the total number in the future. For marketers, the viral effect of PRCB can be described by its accumulated number of buzz in the past [48].

3.3. Motivation of Consumers. Through social media, consumers can share their opinions and expectations about

new products with others. The motivation of PRCB behavior is a major topic in this paper.

Through the study of EWOM, Hennig-Thurau et al. [49] put forward ideas on the motivation of consumers to spread EWOM. Some ideas are also applicable to the motivation of PRCB behaviors: caring for other consumers, helping companies, social interests, and exerting rights.

To be more specific, consumers' desire for social interaction, economic incentives, self-promotion, and the attention for others are the main reasons leading to PRCB behavior [49].

First, the gradually improved online platforms provide consumers with opportunities to pose questions and seek help. For many film lovers, online platforms allow them to discuss their preferences. And some consumers would offer suggestions for upcoming releases out of empathy, such as "Next month's 'Interstellar' might satisfy your sci-fi needs."

The emergence of a bombshell in the car market, namely, the new BMW X5L which will be released in early 2022 and achieve mass production, raises expectations among customers. Countless numbers of potential customers begin to actively participate in the relevant PRCB behavior: comment on the related data and appearance of the car, put forward opinions, and make forecast on sale price, and so on. These behaviors help potential consumers to learn about new products to a large extent. At the same time, consumers' PRCB behavior is an important part in merchants' marketing activities for new products. The motivation behind such consumers' behaviors mainly originates from the company's reputation and recognition of previous products [50].

In addition, consumers establish an enormous amount of online communities through comments and other ways. For reasons such as social recognition, strengthening the connection within virtual communities can increase the community interests of consumers [4]. Consumers can comment, blog, watch trailers, and rate on the platforms which would further enhance the community's benefits.

The consumption experience would be either extremely positive or negative, so there are two motivations that lead consumers to participate in PRCB transmission: expressing positive emotions and venting negative emotions. On the one hand, the positive experience would cause psychological tension and desire to share the pleasure; thus, consumers may actively implement PRCB behaviors to share their experience with others and reduce this psychological tension. For example, last month's "Spider-Man: Homecoming" trailer, which featured Doctor Strange and a host of villains from previous films, was well received, with Marvel fans rushing to the Internet to share the trailer and comment on it. On the other hand, consumers may vent their negative emotions of dissatisfaction through online platforms, and this can reduce their frustration and anxiety. Therefore, sharing negative news about products by posting online reviews can help consumers reduce their dissatisfaction related to their negative emotions. As a result, consumers can use PRCB behavior as a tool to impose influence on new products [49].

As the most active group in social media, teenage consumers may actively participate in PRCB experience

activities, receive buzz about new products or services, and actively comment on them, because they hope to establish connections with potential social networks and become part of their peer community [51].

3.4. Publisher's Marketing Tools. During prelaunch, buzz was driven primarily by the vendor, as consumers had no experience with the product. Suppliers can develop targeted marketing strategies to encourage consumers to engage in PRCB behaviors according to the motivation of consumers' PRCB behaviors mentioned above [52].

First, buzz can be used to attract consumers and generate interest and curiosity about new products by publishing advertisement [52]. In the film industry, some companies would invest heavily in advertising before the release to increase the recognition of the film, so as to ensure that there would be large number of audiences buying tickets after the release. Thus, high awareness of upcoming films may simply reflect higher levels of advertising spending [22].

Second, new product alliances are common among video game publishers. Partners pull their customer base together to provide a larger one for the new product. The previously separate customer groups are integrated into one united community, so consumers can communicate with more people, and the network effect of PRCB is enhanced [53]. The expanded fan base leads to an increase in buzz during prelaunch. However, if the fan bases of partners in the alliance are highly similar, the overlapping customer base would reduce the opportunities for broader interaction and information sharing among more customers [54]. Therefore, repeated partnerships may reduce the positive impact of the number of alliance partners on buzz [3]. Third, buzz before new product launch is also influenced by the behavior of movie stars. Celebrity buzz refers to a star's ability to attract consumers and get them interested in new products. Usually, celebrities would create news in public or private lives before the release of a new movie to generate consumer discussion about it and generate buzz. Then, the heat can be used to promote the new movie. Some stars often do take advantage of various PRCB campaigns to raise consumers' interest. Industry insiders measure resulting star buzz by the intensity of Internet searches (e.g., using the Yahoo! buzz factor). In a word, stars can generate publicity for new films through their behaviors and events (stars can interact with fans on social media and actively participate in film release events, etc.), which promotes the spread and development of PRCB [10].

Finally, the nature and type of product itself also determine the popularity of PRCB. Products that bring consumers a more enjoyable experience tend to earn more PRCB than practical products, such as movies. Eight of the top ten grossing films in the world are franchises, such as "Avatar" (\$284.7 billion), "Avengers: Endgame" (\$2.798 billion), and "Star Wars: The Force Awakens" (\$2.068 billion). Six of the eight films are sequels, and a sequel to the top-grossing "Avatar" is set to be released in 2022. Based on the success of sequels in the past, it is assumed that sequels to "Avatar" would also be successful. And movie-related PRCB has already spread among movie lovers. In addition, Craig et al. [22] studied con-

sumers' preferences for movie types and proposed that "action" movies can stimulate higher interest through better buzz among consumers.

Next, this article will introduce a marketing tool commonly used by major movie companies, the Super Bowl advertising.

In fact, Super Bowl ads have become phenomenal in their own right. A 2020 survey shows that 79 percent of viewers regard ads as entertainment, while nearly 71 percent say they enjoy watching them. The Super Bowl draws such a large audience that the game and its commercials remain constant hot topics for some time even after the game. So advertisers see the Super Bowl as a way to raise awareness of their products. But they also pay a good price for it. As Figure 3 shows, the average price of a 30-second TV ad during the Super Bowl is about \$5 million since 2016 and has risen further in the past few years. In 2021, advertisers paid an average of \$5.6 million to play a 30-second ad during the Super Bowl [55].

The hype around the Super Bowl and its commercials starts months before the team takes the field. But when the Super Bowl ends, the conversation does not stop. Advances in social media and the proliferation of peer-to-peer communication channels result in these postmatch conversations lasting longer than ever before. The Internet, in particular, provides a growing forum for consumers to interact online, discuss, and even voluntarily view, download, and share Super Bowl ads [23].

Some consumers may complain that too much advertising disturbs their lives, but there are hundreds of thousands of consumers who search and watch ads online. During the 2019 Super Bowl, consumers spent 641,000 hours watching Super Bowl ads on YouTube, which increased by 58% over the last time [57]. Consumers not only review ads digitally, they also write blogs and read other people's comments.

4. Impact of PRCB

In this chapter, the paper will integrate and analyze the role and influence of PRCB in previous researches. First, PRCB includes not only important information about the upcoming new product itself but also information about how consumers are likely to react to the new product. Then, PRCB can predict the success of products and influence consumers' purchase [1].

Similarly, Houston et al. [1] also explored that Prediction is a basic element of PRCB, which combines two aspects: first, PRCB is forward-looking and can predict things that have not yet happened; second, the object of PRCB prediction is generally the positive mood of consumers. For car lovers, this may be the launch of a new car, and for movie lovers, this may be the release of another Marvel movie.

Although PRCB's predictions are usually associated with positive sentiment, PRCB may also predict negative sentiment in some situations, such as when consumers are worried that an upcoming product may be disappointing.

However, negative sentiment generally does not exist independently but is mixed with positive interest. It is a mixture of expectation and fear of disappointment [1].

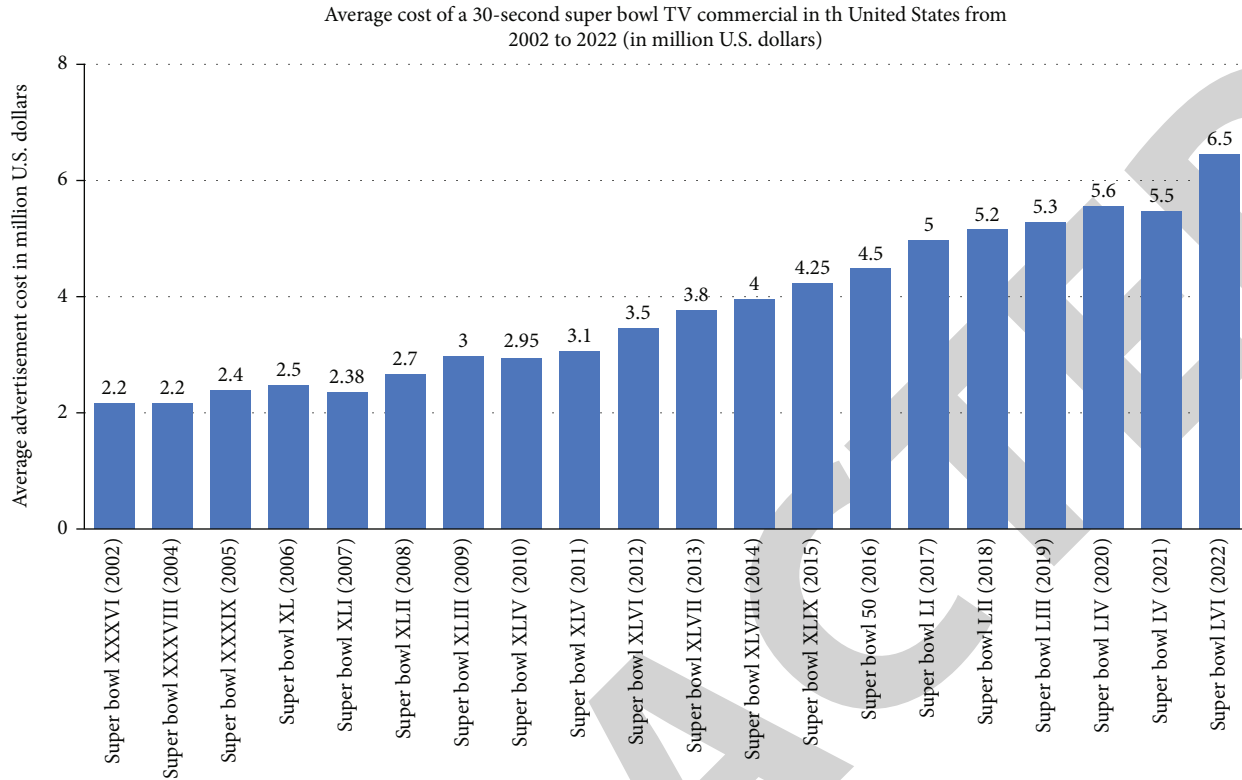


FIGURE 3: Super Bowl average costs of a 30-second TV advertisement. Source: Statista [56], <https://www.statista.com/statistics/217134/total-advertisement-revenue-of-super-bowls/>.

The accuracy of PRCB's behavior prediction is an important basis for whether merchants can successfully invest and develop the market. There are two prediction tools at the current stage, namely, the company's stock price and the virtual stock market.

The prediction function of PRCB behavior is also reflected in the change of the company's stock price; that is, it affects the price of the company's stock. According to a survey by the Brunswick Group, many stock analysts and investors now take buzz on social media into account when making investment decisions. There is little information about the product before it hits the market, and investors do not have data such as actual sales to judge its value to the company. So investors begin to pay attention to PRCB. Xiong and Bharadwaj [3] mentioned that many companies start to present their upcoming new product PRCB to investors. For example, on a conference call, Activision Blizzard present RCB information of the new game "Call of Duty: World at War" to investors.

A company's future cash flow determines its stock price, while the expected performance of upcoming new products affects the company's cash flow. According to efficient market hypothesis, if a company's new product information is made public, investors in the stock market would react to it quickly and adjust their expectations of the future performance of the product, so as to determine the future cash flow which is finally reflected in the stock price changes [58]. Actual sales after a product is released would directly

affect and be reflected in the company's stock price. However, prior to the release, the product does not bring actual sales, thus excluding the impact of actual sales on the stock price. In this case, the stock price only reflects the influence of PRCB [3].

Depending on the level of details that investors know about unannounced new products, two extreme assumptions can be made. First, investors fully master PRCB information and data of the new product in detail and understand the scope of potential consumers and their expectations for the new product, so as to accurately predict the future performance of the product. In this case, the pre-launch stock price already reflects the true value of the product. Stock prices should not fluctuate significantly after the launch. This is a perfect model for investors to successfully predict the future value of products using information such as PRCB [59].

In the second case, there are few PRCB about new products in the market, so it is difficult for investors to accurately predict the future value of the products before they are released. The price reflected in the stock may not be accurate, so the stock price may fluctuate greatly after the product is released [60].

The comparison of the two situations shows that the more and wider the PRCB is, the more accurate the company and investors would be in predicting the future value of new products based on PRCB. When the new product is launched, the stock market would not have large abnormal

stock price fluctuations (abnormal stock price fluctuations include abnormal rise and abnormal fall) [11].

The reduction of abnormal changes in the share value would benefit the company. First, the time value of money says that shares are more valuable if they are cashed in earlier than later. Due to the influence of PRCB, stock prices can well reflect the real value of prerelease products before they enter the consumer market, so investors can get returns on new products earlier before they are released. Secondly, the large fluctuation of stock price would increase the risk of the company, which is harmful to the company. PRCB can reduce the degree of abnormal changes in stock prices and thus reduce the impact of emergencies on the stock market when products are released [61].

Moreover, virtual stock markets are an emerging method for predicting the success of new products. It can accurately assess the future sales of new products by integrating market information and consumer preferences. VSM provides a platform for game participants, converting ideas or products into stocks and shares, so that they can trade these shares based on their own values and willingness [62]. In addition, to encourage consumer participation, VSM also provides incentive mechanisms. At the end of the game, participants are compensated based on their predictions and trading results [63].

Compared with the traditional method of measuring PRCB, the advantages of VSM are obvious: unlike the traditional method, which requires hundreds of respondents, VSM can also exert a great of influence with fewer participants [62]. Moreover, the concept of trading and winning is very attractive for consumers [63].

HSX is a good example of VSM, a common tool used by marketers to predict the success of new products such as new movies. Many studios (e.g., MGM, Warner Bros., and Lionsgate) study the data of HSX. HSX is free to play and open to all online participants. Participants are given \$2 million in HSX coins as soon as they sign up for the game. The aim is to manage their portfolios by strategically buying and selling stocks. Players use virtual currency to buy and sell shares in different blocks such as actors, directors, upcoming movies, and movie-related products. This clearly show people's expectations for various movies. The stock exchange stops on the day of the film release, and the price at which it stops represents the latest prediction for the movie prior to its release [11].

The dynamic trend of PRCB is also an indispensable part in predicting the future development of products. If PRCB increases steadily over time, that means the discussion of product is still on the top list. As in many social media websites, the rolling of "today's hottest topic" and "hot topics" from day to day can offer people a way to learn and participate in the heated discussion, and then, the relevant products would become more popular. On the contrary, the downward trend of PRCB means that there may be serious negative news or reviews for the product, causing consumers to become impatient and less interested with the launch of the new product. As consumers have less and less interest and expectation for the product, the declining trend of PRCB may mean that the product is less likely to be the best seller after its future release [3].

Considering Kotler's model of purchase decision process, the influence of PRCB on future sales on new products can be divided into cognition, interest, purchase desire, and postpurchase feedback.

Consumers' awareness of the new product is the first step to get them to buy the product; that is to say, consumers have to know the product first. A large number of PRCB intend to improve consumers' knowledge of new products [27]. Secondly, people's PRCB behaviors, such as discussion of new products on social media, blog posts, and active activities, would help consumers themselves and others increase the understanding and interest of new products, thus increasing their possibility to purchase products in the future [64]. PRCB reflects consumers' interest in the new product itself and related activities and communications prior to product launch. Such strong interest and expectation for new products would raise consumers' strong desire to buy products which cannot be satisfied. Because the products are not released and cannot be purchased and used, consumers' demand for products is developed [1]. Consumers' awareness of the new product, their interest, their expectation of the release, and their desire level also depends on the brand. People generally have higher trust degree in well-known brands, and a good brand usually equals to good quality, good appearance design, good use experience, and better after-sales service [65]. This is reflected in many industries. The famous enterprises usually own a large number of fans, who trust almost all the products released by the company because of their reputation. For example, some Apple fans would buy any product released by Apple: apple computer, mobile phone, etc.

Except the brand, information about a product during prelaunch is usually limited, so PRCB can be used as an indicator of its popularity. PRCB can increase consumers' expectations of the product and persuade them to buy it in the future [64, 66].

Thanks to PRCB, consumers often immediately buy and use long-awaited products right after they are released, such as watching a movie's premier. On the one hand, if the product quality or experience does not meet consumers' expectations, high PRCB would often lead to greater negative emotions among consumers. These emotions may lead to an increase in complaints in the market. The spread of negative emotions would influence the purchasing decisions of other consumers and even affect the sales of other products under the same brand. On the other hand, PRCB behavior for new products would also promote consumers' opinions on actual consumption and use experience. When consumers actively participate in PRCB behaviors before the product launch and have expectations for the new product launch, their consumption experience and enjoyment after the product launch would be enhanced. Therefore, PRCB behavior would not only have an impact on the sales of new products but also improve the enjoyment of consumers in their future consumption and use of products [59].

In general, the impact of PRCB on initial sales is generally positive. However, overwhelming positive excitement also reduces consumers' interest in the product and thus inhibits sales; i.e., there may be a saturation point when

PRCB is too large [1]. When the news of an upcoming product release makes a stir, many people would express their anticipation of the new product, such as a new music record, through PRCB behavior. While the buzz is likely to bode well for future record sales, too much buzz can be annoying and upset people who aren't interested in the product. This is especially true in the music industry, where the bigger the PRCB is for a new album, the more likely that some people would refuse to buy it. The herd mentality can sometimes be counterproductive. However, in general, the more PRCB there is, the higher the likelihood that consumers are to be exposed to PRCB, which increases the social impact, and consumers may buy the product or service based on the herd psychology.

In addition to the direct impact of PRCB on product development mentioned above, community variables proposed by Divakaran et al. [26] can not only predict the future development of movies but also indirectly affect the box office. Some universal variables such as star cast and film production budget are decisive factors to the box office. Audience perception of a film is influenced by its budget. Consumer awareness and intention before release are important predictors of a film's performance in its opening week. Big-budget movies generate more buzz before they are released. Generally speaking, the higher the budget is, the more consumers are willing to watch the movie. Another factor is movie sequels. A successful franchise would establish a good reputation and attract a large number of loyal fans. In terms of series films, the number of fans lay a foundation for the box office of the following sequels, and fans would spontaneously promote and spread the films even without deliberate incentive mechanism. Therefore, films as sequels often cause a larger spread of PRCB, thus generating a greater willingness to watch [22].

Therefore, many famous movie studios would spend numerous production costs and invite many famous stars to participate in the movies to attract audiences and thus achieve the purpose of increasing the box office. In the meantime, the PRCB of the consumer community can further facilitate the influence on the film's box office, besides the stars and the film budget. Film companies can create topics and arouse consumer discussion on social media with the advantage of star line-up. Stars themselves may also actively participate in the discussion on social media, thus having a positive influence on the future box office of movies [26]. Karniouchina [10] also explained the relationship between stars and box office. The influence of stars on revenue mainly depends on their large fan base, so they are able to create a sensation before the film is released and last to the opening week. The positive PRCB behavior of their regular audiences can arouse other consumers' interest in the film and encourage consumers to go to the cinema as soon as possible after the film is released.

5. Conclusions

In recent years, PRCB has become an increasing interesting topic for marketers and researchers. Also, the big data analysis also provides a lot of help for PRCB's customers to find

and accurately locate them. By collecting and analyzing the information of potential consumers, such as age, consumption ability, and consumption habits, it can formulate the most appropriate advertising and marketing methods. Through the analysis and integration of relevant researches, this paper objectively discusses the topic from three perspectives: the theoretical background of PRCB, the driving factors, and the impact of PRCB on product performance, and answers the questions mentioned at the beginning of the article. First of all, in the theoretical background part, the definition of PRCB is clarified; that is, PRCB is the integration of observable behaviors of consumers to the upcoming new product to reflect consumers' interest in the new product. This also allows the article to distinguish PRCB and WOM in terms of time horizon, with the former occurring before product release and the latter occurring after product release and consumer experience.

PRCB behaviors are divided into three categories: communication, search, and participation in experiential activities. And two dimensions of measurement are defined for these three behaviors: quantity and scope. The introduced AIDA model closely integrates the PRCB effect with the process of consumers from paying attention, generating interest, and purchasing desire to action, which plays an important role in the subsequent evaluation of the PRCB effect. In addition, the dynamic of PRCB is one of the main focuses of this paper. Based on the dynamic nature of buzz, the researchers found that the dynamic trend of PRCB can be used to predict the future development of the product more accurately, and the evolution curve can be used to represent the change of consumer interest.

In the subsequent study on the driving factors of PRCB, the driving factors of PRCB are divided into objective factors and subjective factors. The objective factor is the convenience provided by the rapid development of the Internet for the spread of PRCB.

In addition to the above objective factors, the spread of PRCB is also affected by the motivation of consumers and adopted marketing methods. On the one hand, consumers' desire for social interaction, economic incentives, and concern for other consumers and self-improvement are the main motivations leading to PRCB behavior. On the other hand, suppliers often develop corresponding marketing strategies for different consumer groups to encourage consumers to carry out PRCB behaviors. As a special case, this article also explains why and how Super Bowl ads as a marketing tool affect the future sales of new products.

Finally, the role of PRCB is mainly reflected in two aspects: predicting and influencing the future performance of products. It is worth noting that the predictive effect of PRCB can be shown as the change of the company's stock price. Study found that PRCB impact on product performance is generally positive. Consumers' awareness of new products is the first step of purchase. A lot of PRCB raise the awareness of new products. Because PRCB behavior can increase the understanding about new products and customers' interest, it can increase the likelihood of their future purchase. However, PRCB may also bring negative effects. Excessive positive excitement would reduce consumers' interest in the product, thus inhibiting sales.

6. Discussion

6.1. Managerial Implications. The findings of this paper have many implications for marketers and managers in industries such as film and automotive, providing them with practical information to guide decisions about future consumer needs. Early forecasting enables managers to prepare for post-launch sales before the product is launched and obtain information about consumer expectations, which gives them the opportunity to improve products or other marketing strategies as early as possible, especially for products with short life cycles, such as movies and video games. Because sales of these products are concentrated in the first few days or weeks, there is not time to improve products after launch. The prediction behavior based on PRCB becomes more important.

6.1.1. Appropriate Information Collection Methods. The target consumer market for the upcoming launch of the new product can be divided into ordinary consumers and niche enthusiasts. According to the universality of PRCB, if the company only collects and analyzes limited PRCB behaviors in pursuit of lower cost, the data obtained would be insufficient to accurately predict the future sales status of the product. Therefore, it is suggested that merchants target a wider audience and carefully track different behaviors of consumers in the process of collecting PRCB and other consumer information.

6.1.2. Appropriate Marketing Tools. According to the above analysis, a large number of PRCB would have a positive impact on the future sales of new products. Therefore, before product release, suppliers should adopt appropriate marketing measures to improve the number and scope of PRCB.

First, a sound social media platform is the basis for consumers to communicate online. The company shall provide as many platforms or websites as possible to consumers so that consumers can comment, communicate, or participate in other PRCB activities. In this regard, the company can provide corresponding incentives to encourage consumers to carry out PRCB behaviors, such as issuing product discount coupons.

The film industry is the main industry involved in the study. In real life, film companies would release trailers of films in advance and provide professional platforms for consumers to watch trailers, rate, and comment. If the new film is less well known, the studio may spend more on advertising or encourage more consumers to participate in the discussion through membership reward programs. In addition, studios can take advantage of celebrities and sequels. As the PRCB played a decisive role in the success of the new film, in the late stages of the film development, film companies should attach importance to social media, such as comments on the websites, and adjust the content of the movie according to the opinions, such as deleting an unpopular part of the movie. Such measures would exert a great deal of influence on the box office for new movies due to its prediction, maximizing the profits of enterprises,

and reducing the risk of film failure. This paper also discusses the feasibility of Super Bowl advertising.

6.1.3. Dynamic Trend of PRCB and Others. The dynamic nature of PRCB provides a new idea for suppliers, that suppliers should pay attention to the influence and forecasting ability of PRCB trend to predict the future sales of new products. In addition, this paper introduces two forecasting tools, company stock price and VSM/H SX. The former shows consumers' interest and expectation of the new product and investors' expectation of the prospect of the product. The latter, by contrast, is a virtual stock market. Both of these tools are relatively effective at predicting product growth prospects [62].

6.2. Limitations and Further Research. Through the study of the current researches, it is found that the current studies still have their limitations, which provides direction and opportunity for future research on PRCB.

First, the universality of PRCB in the population can be a direction of future research. The consumer market can be divided into the general consumer market and the niche market (the niche hobbyist market). If the marketer wants to predict the future product development by collecting PRCB information of the niche hobbyist, the result is usually not accurate enough. That is because studies of niche hobbyist interests can only be done on niche products not general mass products like the iPhone. In the future, there would be more specific studies on how PRCB information predicts and influences the sales of these two products.

Existing studies have used the DYNAMIC evolution trend diagram of PRCB to predict the prospects of new products, and the possible influence of endogeneity of the model has been taken into account. However, relevant studies are mainly limited to the film and video game industries. In future studies, PRCB's dynamic research can be applied to other industries to verify its feasibility.

In addition, the researchers try to use the change of stock price to predict the sales after the release. Since the price of the stock after the release depends on the actual sales of the product, stock price prior to release can effectively avoid the influence of the product sales. However, there are other influencing factors; as a result, the stock cannot truly reflect and accurately predict the future sales volume of the product through PRCB data, which also provides opportunities for future research.

Finally, teenagers, as the biggest beneficiary group of Internet development, play an extremely important role in social media. Therefore, future studies on PRCB can focus on the sensitivity of teenagers to the buzz of new products, such as movie trailers, and PRCB behavior and whether their PRCB heat into purchase rate is really higher than consumers of other age groups.

Abbreviations

AD/ad:	Advertisement
COVID-19:	Coronavirus disease 2019
DVD:	Digital video disc

e.g.:	Exempli gratia
e-book:	Electronic book
et al.:	Et alia
etc.:	Et cetera
EWOM:	Electronic word of mouth
FDA:	Functional data analysis
HSX:	Hollywood Stock Exchange
i.e.:	Id est
IFPI:	International Federation of the Phonographic Industry
IMDb:	Internet Movie Database
MGM:	Metro-Goldwyn-Mayer
MWOM:	Microblogging word of mouth
NBC:	National Broadcasting Company
PRCB:	Prerelease consumer buzz
RIAA:	Recording Industry Association of America
TPR:	Third-party product review
TV:	Television
VCR:	Video cassette recording
VoD:	Video on demand
VSM:	Virtual stock market
WOM:	Word of mouth.

Data Availability

All data included in this study are available upon request by contact with the corresponding author.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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