

Research on the Investment Value of Bilibili Based on Discounted Cash Flow Model

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Abstract: Bilibili is one of the most influential video websites in China. Among the video sites in China, there are few video sites similar to Bilibili that use ACG culture as the main platform culture. Users are constantly sharing what they think while also attracting more users to join in. As a platform, Bilibili can allow the groups with the same hobbies to have their communication platform, but also attract more users through the communication platform. Over the years, Bilibili, as an emerging company, has achieved a very high level in just a few years. Bilibili has achieved its goals in a period, has more users and expanded its business scope, and has successfully become a large-scale video-sharing website in China. This paper uses the discounted cash flow model to evaluate the value of Bilibili company, concludes that it fits the current market value.

1. Introduction

Bilibili is a large-scale video-sharing website headquartered in Shanghai, China. Their name was "Mikufan" in the beginning, and then renamed "Bilibili". In the beginning, most of their main users were users of the ACG group, and the video-sharing focused on animation, manga, and various stories created by the users themselves. With the change of time, the number of platform users has gradually increased, and the number has been continuously expanded, which has also attracted more people who are interested in the platform to join.

Bilibili is a large video-sharing website headquartered in Shanghai, China. Their initial name was "Miku fan" and later changed their name to "Bilibili". In the beginning, most of their main users were users in the ACG group, and video sharing was mainly focused on animation, comics, and various stories created by users themselves. As the times change, platform users have gradually increased and the number has continued to expand, attracting more people who are interested in the platform to join. From the beginning, the animation has gradually affected all other aspects. Rui Chen, the CEO of Bilibili, said in his speech in September 2021: Our average monthly active users are now 237 million, of which 78% are young people aged 18-35. So according to these statistics, one out of every two young people in China is a user of Bilibili. At the same time, he also mentioned the contribution of young people in Bilibili. "There are many talented creators on Bilibili, who create 8.4 million videos every month, and 2.4 million of them are active in Bilibili every month. The main component of these people is called Z Generation. I use four words to describe these young creators---young, talented, creative, and positive."

Liu uses data analysis and user experience data. After reviewing Bilibili's research results, he found that a large part of the user's loyalty to Bilibili is due to his unique community. This community allows users to stay in Bilibili. People can discuss what they like and dislike under different videos. The data will provide you with the types of videos you like, making users more willing to communicate on the Bilibili platform. At the same time, Bilibili also has a considerable position in different fields such as online teaching. Liu's article wrote that user experience is always the first in the video industry. With the rise of the video industry, the user experience will become an important part of attracting customers and retaining original customers. Station B collected a large amount of user data through questionnaires. Then use the data to analyze the impact on the user experience. The results show that

variables such as the content and functions of the bullet screen video website have a significant impact on the user experience [1].

In Zhang's article, he put forward a point, he believes that Bilibili's unique barrage culture allows people watching the video to communicate in the barrage, making the video more interesting. The article wrote that in the early days of Bilibili when there were few people, people would use barrage to share online viewing, and use barrage to exchange views on the video or chat together to keep users online. Screen. The love of Bilibili, now, although they have a lot more people watching movies, there used to be no way to watch online, but now there is no point in adding fun [2]. At the same time, Yue went a step further and surveyed 248 Bilibili users in 2021 to collect users' motivations and obstacles to viewing the barrage. The results show that people watch barrage videos for information, entertainment, and social connections. Introverted young people who are highly open to new experiences prefer to watch barrage videos, because barrage methods are very new and popular for them, and they may not see so many likes in real life. People, but you can find many people who like the same things on the Internet, anime, or anchors, which gives users a reason to continue using Bilibili, and Bilibili also maintains its number of users in this way [3].

Mei's research also supports this view. The research believes that these activities gradually become a ritual as the number of people watching the video gradually increases, an interesting ritual that can attract many Bilibili users. This sense of rituals will increase the connection of these Bilibili users, but users who originally didn't know laughed together, increasing the possibility of more users and users staying on this platform [4]. Wu's research also mentioned that active users posted more positive comments, even though they were anonymous; more language memes were used in the barrage, indicating that it was used to promote community building. In addition to their effectiveness in promoting social interaction, their results also show that barrage and forum design play a complementary role in knowledge sharing, and barrage comments involve more explicit (know-what) knowledge sharing [5]. At the same time, Bilibili provides an anonymous chat platform. You do not need to use your real name to communicate with others on Bilibili. This is also described in Li's article. He studied the benefits coordination mechanism of the cloud platform, which directly affects the competitiveness of platform enterprises and plays a vital role in the sustainable development of enterprises. According to analysis, these community functions not only allow people to see their favorite videos but also allow people to let go of their identities and continue to communicate [6].

Chen's article is also a further supplement. His article believes that Bilibili also reflects the attitude of young people. Chen believes that there is a neglected, subtle but poetic, and strategic process of admiration on Chinese social media. The article wrote that Bilibili can also show young people's thoughts and attitudes towards life [7]. Chinese is not the only language of Bilibili. Zhang conducted a lot of investigation and research and wrote about the widespread use of Japanese on the Bilibili website in his article. These parts are used as honorifics or interjections. At the same time, since most of the animations are made in Japan, users of station B have a higher acceptance of Japanese, not only Japanese, but many people watch and love various languages on Bilibili [8].

Lin's article wrote that in many cases, Bilibili uploaders will also forward other videos (similar to youtube, TikTok) to Bilibili with permission to make it more diversified and attract more users to use Bilibili., Become a member of Bilibili users [9]. In the field of learning, Bilibili takes a different approach to helping users. Wang also mentioned this novel point of view in his article. First, they adopted a live broadcast method. These findings indicate that the SRL community can provide lonely learners with cognitive and social-emotional support to persist in long-term learning. The activity and the host's practice inspired the host's efforts to focus on contemplation [10].

The purpose of this article is to analyze the current profit model of Bilibili and its future development possibilities. The current Bilibili continues to fall after experiencing the stock rise at the beginning of the year. From the initial US\$159 to the current US\$45, these changes have occurred in just one year. This article analyzes his current profit model, and at the same time uses Discounted Cash Flow's valuation method to judge the company's intrinsic value and future value, including a comparison with the same type of company.

2. Basic status of Bilibili

2.1 Games, value-added, and e-commerce

Most of the games are based on the age group as the main audience. Turnover, but in a large number of games, most of the income comes from limited games, such as "Fate/Grand Order (FGO)", "Princess Connect" and "Azur Lane" These three games contributed 24% of the total turnover, and 16 games were released at one time at the Bilibili game new product launch conference in 2021.

Bilibili's value-added services mainly refer to major members, live broadcasts, or services such as MissEvanFM that require Bilibili users to pay separately. In the third quarter, Bilibili's value-added service business revenue increased by 95% year-on-year to 1.91 billion CNY, accounting for revenue. At 36.7%, replacement games became Bilibili's most profitable project. The e-commerce at Bilibili is based on membership purchases and the acgn group is the main service target. In the beginning, the main products are mostly hand-run novels or posters that are sold in cooperation with merchants or are sold exclusively. Now they are also sold. Something like electronics.

2.2 Basic benefits of Bilibili

Bilibili's main business now includes games, value-added services, e-commerce (membership purchase), and advertising. According to the Bilibili financial report for the latest quarter, value-added services reached 1.91 billion (CNY), accounting for 37% of the total. Advertising revenue reached 1.17 billion (CNY), accounting for 23% of the total. E-commerce and other businesses reached 730 million (CNY), accounting for 13% of the total, and the gaming business revenue reached 1.4 billion (CNY), reaching 27% of the total. Total revenue reached 5.21 billion (CNY), which reached the historical high.

Bilibili has 267 million monthly active users and 72 million monthly active users. The number of users' submissions is also increasing. Undoubtedly, they all guided Bilibili in a good direction. But at the same time, it is undeniable that the losses of Bilibili continue to expand. The financial report shows that in the third quarter alone, the net loss reached 2.668 billion, and a loss of 1.1 billion in the same period last year. Although this year's revenue continued to grow and reached a record high, the growth rate of the loss has far exceeded Revenue growth. According to Bilibili's financial report, revenue sharing is the largest component, including incentives to uploaders, live streaming, game sharing, and so on. At the same time, with the increase of up hosts and anchors, this part may be more divided. At the same time, marketing and sales are also, to attract more users and advertisements, in the second quarter, sales and marketing expenses also reached 14.1 billion (CNY) they have indeed paid off. Their monthly life has increased a lot, reaching 267 million (CNY). At the same time, the quarterly R&D cost is 788 million (CNY). Operating losses exceeded 1.8 billion. At the same time, the investment loss of Bilibili has reached 724 million. This part seems to be due to the weakening of the entire market due to the epidemic. However, the investment of Bilibili has not worked so far. According to incomplete statistics, Bilibili is currently So far, more than 100 companies have been invested abroad, but there is no return in the short term.

3. Comparison with related industries and challenge

Bilibili is not the only company doing related types of websites in china, Now Bilibili has become an anime website in the minds of Chinese people. The vast majority of people who mention Bilibili subconsciously think that this is an anime-based website, but it is not. Although Bilibili initially focused on animation sharing, as the number of users of Bilibili increased, it gradually became dissatisfied to continue to use anime as its main industry website. Their current purpose is to continue to expand in other video fields, such as variety shows, TV shows, anchors, and video sharing, to expand their business. At the same time, in their field of expertise: video sharing, some companies have also opened a new round of competition with them.

3.1 Competition in the related two-dimensional market

Bilibili was launched in June 2009. In the beginning, it was mainly based on two-dimensional animation. Secondly, because of the interactive nature of bullet chat, Bilibili was quickly loved by young people. At the same time, users are encouraged to upload their works and let some of their content get richer. In the early days, many two-dimensional websites were competing with it, and the biggest opponent was acfun. In the beginning, acfun was still a website that could compete with Bilibili, and it was established longer than Bilibili. However, due to the problems of acfun's operations, soon he could not continue to compete with Bilibili.

3.2 Video companies

In addition to watching fan dramas, users on Bilibili often enter specific sections according to their interests to watch videos uploaded by other users. Compared with other companies, the audience will be less. In addition, Bilibili starts with the second dimension, and much of its content is produced around the second dimension. Even if there are many types of videos later, it gives a lot of people's impressions. It is still a two-dimensional website, so the increase of new users is relatively slow. Bilibili is now constantly producing other types of works to attract more users. For example, for 90 dating agencies, the sixth season has more than 100 million views. But the number of works over 100 million is still not as many as others, such as Tencent Video or iQIYI.

3.3 Challenge

Although Bilibili grows very fast, just like people, growing too fast will always bring some negative effects. It can occasionally see a few students who are higher than high school students in junior high school, but their thinking is not as sharp as that of high school students. The same goes for Bilibili, their execution ability has not kept up with their growth rate. At the beginning of 2021, the uploader "lexburner" that Bilibili valued was met with dissatisfaction from many people for the anime "Mushoku Tensei: Jobless Reincarnation", which is one of the proofs of Bilibili's poor execution.

"Mushoku Tensei: Jobless Reincarnation" is the most recommended anime at Bilibili in January 2020, and has received a lot of official traffic. In principle, the content operation and review team should make a detailed risk analysis and determine risk countermeasures in advance. In the current Internet environment, it is impossible for any popular animation to not cause controversy. The key is how to deal with it. But from the results, Bilibili's content operation team seems to be completely unprepared.

For an uploader like LexBurner with the largest number of fans in Bilibili, Bilibili should have a dedicated person to do so, and even more, than one person handles all aspects of affairs. After making the controversial remarks, Bilibili did not find a way to control the impact and reduce the loss. Instead, he simply and rudely wrote the matter and issued a controversial announcement. It's hard to imagine any professional content platform will make such a response. Not only will it not solve any problems, but it will also make this matter more difficult to solve and more responsible.

In the process of communicating with angry fans, Bilibili's public relations and marketing team did not do anything worth remembering, but it also caused most people's dissatisfaction. Since they want to ban lexburner's account, there is no need to do other things that will irritate the public, but they still banned the anime "Mushoku Tensei: Jobless Reincarnation". It is lexburner's own mistake, but Bilibili has to ban users who have made negative comments on lexburner.

4. The evaluation of Bilibili

4.1 DCF Model

The discounted cash flow model is one of the most widely used pricing models in the field of corporate financing and investment, and it plays a huge role in both academic and practical fields. As shown in Equation (1), The discounted cash flow model is to estimates future cash flows. Discounted cash flow is a method used to assess the attractiveness of an investment opportunity. Refers to the

conversion of cash receipts and expenditures in a certain future year into current values. The present value of future cash flows must be determined through recalculation (conversion). In this way, a company or planned project can be accurately valued. The process of discounted cash flow models is usually a 4-step formula. In the first part, this paper needs to assess their existing cash flow. After that, this paper needs to determine their growth rate and finally set a discount rate. In this way, find his ultimate value to determine whether he is undervalued or overvalued.

$$P = \sum_{t=1}^n \frac{CF_t}{(1+r)^t} \quad (1)$$

Where, P is the evaluated value of the enterprise, n is the life of the asset, CF_t is the cash flow generated by the asset (enterprise) at time t, and r is the discount rate reflecting the expected cash flow.

4.2 Evaluation

The discounted cash flow model is a model proposed by American scholar Rabaport in 1950 to estimate the intrinsic value of a company as a whole or a department. For example, some companies may be divided into different departments, and they have different growth rates and discount rates. Therefore, it will integrate them into the internal value of the computing department and integrate different company departments to obtain a company's overall value. And they all have different theories based on the model. They set the same discount rate in the model, a discount rate that slowly decreases to produce different growth rates, plus the company's cash flow in 2020 to value him. And explore how many years he has already had the market value after the possible sum. The model is expressed as follows. Among them, g represents the free cash flow growth rate during the forecast period, and FCF represents the free cash flow in a certain year in the future. Therefore, it set FCF_5 on the formula to represent his cash flow after five years and calculate his final value. The final value we calculated is 12.9 billion,

Table.1. The estimated value of Bilibili calculated by the DCF model (unit: CNY)

Item	FCF0	FCF1	FCF2	FCF3	FCF4	FCF5	Termmial Value
	115	172.5	258.8	388.1	582.2	873.3	-
DCF	Operating cash flow in 2020	156.8	213.8	291.6	397.6	542.2	11387.0
Growth rate(G)	50%	45%	40%	35%	30%	25%	5%
Discount rate(R)	10%	10%	10%	10%	10%	10%	10%
Finial value(P)	¥12.9billion	Conclusion: current situation		50% is a reasonable growth rate estimate			

4.3 Discussion

Valuation is the best way to estimate the company's future development. Although some people think that stock price is the most direct investment factor, from the peak of Bilibili's stock price of \$159 last year to the current price of \$46 per share, this paper uses the discounted cash flow method to judge whether the company's future success can continue. Development, whether there is investment significance. This article uses the discounted cash flow method to evaluate the industry of Bilibili, and the results show that Bilibili is now in a good development situation. The previous stock price can only be said to be caused by the high price of the speculation. The original price Should be kept on this line.

5. Conclusion

This article explores whether there is still value in continuing to invest despite the rapid decline of Bilibili stock. At the same time, it made an analysis and research on the challenges Bilibili itself faced, and came to the following conclusions: Bilibili is developing at a constant speed. Although they are facing many challenges, Bilibili has a large number of loyal users and is Constantly expanding outwards. Bilibili is a relatively young company. It was founded and operated in 2009, and it has become a well-known video company in China. If it can continue to develop constantly and continue to expand externally, then its future valuation will be more. Furthermore, this study uses the method

of Discounted cash flow, showing that it was an overvalued business before, but it can still reach new heights if it continues to grow.

References

- [1] Liu, Weilin, Zhaoshuang He, and Mengxin Liu. "An Empirical Study of the Influencing Factors on User Experience for Barrage Video Website—A Case Study of Bilibili." *International Conference on Human-Computer Interaction*. Springer, Cham, 2021.
- [2] Zhang, Leticia-Tian, and Daniel Cassany. "Making sense of danmu: Coherence in massive anonymous chats on Bilibili. com." *Discourse Studies* 22.4 (2020): 483-502.
- [3] Chen, Yue, Qin Gao, and Pei-Luen Patrick Rau. "Watching a movie alone yet together: understanding reasons for watching Danmaku videos." *International Journal of Human-Computer Interaction* 33.9 (2017): 731-743.
- [4] Mei, Feixue. "Bullet chats in China: Bilibili, language, and interaction." *Transformative Works and Cultures* 36 (2021).
- [5] Wu, Zechen, and Eisuke Ito. "Correlation analysis between user's emotional comments and popularity measures." *2014 IIAI 3rd International Conference on Advanced Applied Informatics*. IEEE, 2014.
- [6] Li, Yueying, Guoyin Jiang, and Wanqiang Yang. "The Benefit Coordination Mechanism of Cloud Platforms for Rural Cultural Tourism Based on a Case Analysis of TikTok, AAuto, and Bilibili." (2021).
- [7] Chen, Zhen Troy. "Slice of life in a live and wired masquerade: Playful prosumption as identity work and performance in an identity college Bilibili." *Global Media and China* 5.3 (2020): 319-337.
- [8] Zhang, Yi. "Adopting Japanese in a popular Chinese video-sharing website: heteroglossic and multilingual communication by online users of Bilibili. com." *International Multilingual Research Journal* 14.1 (2020): 20-40.
- [9] Lin, Xi, Mingyu Huang, and Leslie Cordie. "An exploratory study: using Danmaku in online video-based lectures." *Educational Media International* 55.3 (2018): 273-286.
- [10] Wang, Ge, and Yanxiang Zhang. "From "study with me" to study with you: how activities of Study with Me livestream on Bilibili facilitate SRL community." *arXiv preprint arXiv: 2108.00637* (2021).