

Research on Cloud Printing Technology Based on LBS and Knowledge Sharing

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Abstract: In cloud print, this paper USES block chain as the underlying technology, the implementation of large database to ensure the safety of mass data storage, and based on this foundation to carry out knowledge sharing service, easy to play article includes more than five thousand specialization vocabulary and its derivative data table, auxiliary ai machine training, in order to provide the knowledge in knowledge sharing service type map search, Expand the search range and precision by plane search, and build intelligent large screen. Cross-domain services result in a 40% conversion rate and a 4 times gross profit margin.

Keywords: Cloud printing; Knowledge sharing; Block chain

1. Introduction

According to incomplete statistics, in 2020, the 500,000 college students in Shanghai will print about 80 pieces of paper on average every semester, which is equivalent to 40 million pieces of paper. It is equivalent to consuming 13,340 12-year-old trees to make paper. And the traditional printing shop rent, labor, water and electricity costs increase, in recent years, the single page black A4 printing price rose from 0.15 yuan/sheet to 0.3 yuan/sheet; Double-page black A4 printing price increased from 0.25 yuan/sheet to 0.5 yuan/sheet, Shanghai colleges and universities a year for two semesters of 8 million printing volume generated by the cost of about 2.4 million yuan, this is still based on incomplete statistics. [1]

Through market research, it is found that with the implementation of college enrollment expansion policy, the number of college students has increased sharply. Colleges and universities undertake the task of cultivating higher talents, which also determines that most of their people have high cultural quality and are in great demand for products and services related to cultural knowledge industry. In particular, students, who account for the vast majority of the campus population, have a considerable demand for printing. On the other hand, in recent years, with the widespread development of mass entrepreneurship and innovation, small and medium-sized enterprises have developed extremely rapidly. In 2015, the number of newly registered market entities reached 12.93 million, with the number of newly registered enterprises increasing by 45.9 percent. The number of newly registered businesses increased by 21.6 percent in 2016, or an average of 12,000 new businesses per day. In 2017, the number of newly registered businesses increased by 24.5 percent, or an average of 15,000 per day. Including self-employed businesses, the number of market entities of all types increased by 45,000 per day. The growing campus market and small and medium enterprise market have a huge demand for printing. However, in today's highly networked development, the printing market is still in the stage of ordinary store printing, causing a lot of troubles for users. Although several online printing platforms have been launched in individual regions, they lack customer base, single service, low popularity among customers, have not developed to a certain scale, and have little market influence. Therefore, there is still a considerable market gap in network printing[2]. The number of students enrolled in previous college entrance examinations is shown in Figure 1. Figure 2 shows the number of market entities in past years.

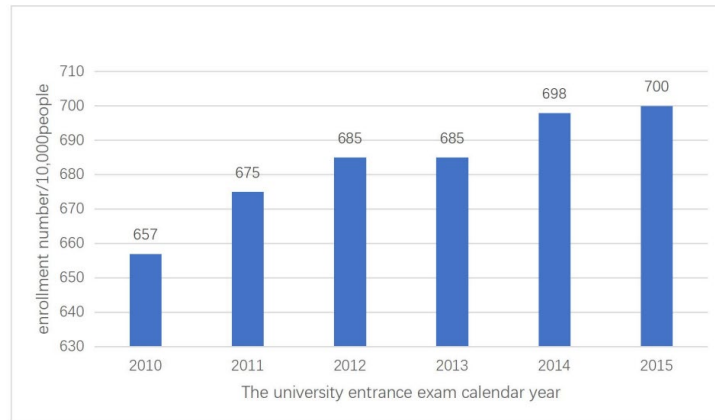


Figure 1: Enrollment chart of previous college entrance examinations

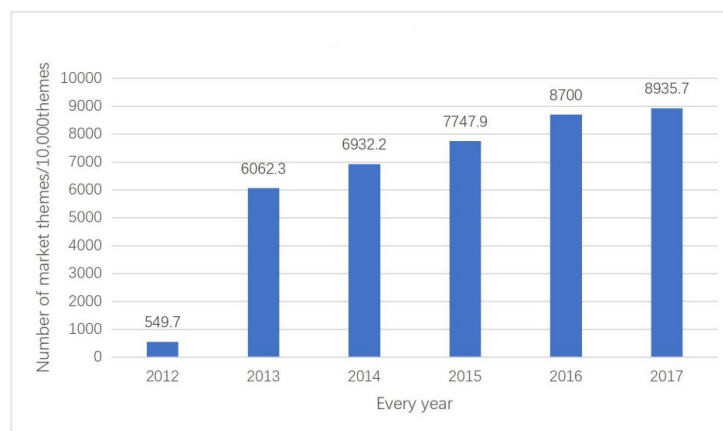


Figure 2: Quantity chart of market players in past years

With the development of "Internet +", big data, cloud computing and other technologies, sharing economy has penetrated into more fields and created more value in order to optimize resource allocation and meet market demand. The emerging sharing industry of cloud printing based on cloud computing and the Internet has gradually come into people's view. In April 2010, Google released its cloud printing plan and began to occupy computer terminals. In November of the same year, HP released its cloud printing technology (HP ePrint) and planned to occupy printing terminals. The two jointly promoted the rapid development of cloud printing industry. As a product of the cloud era, cloud printing can effectively improve printing efficiency and people's work efficiency, and reduce consumption costs. For the printing industry, the rise of cloud printing is not only a new challenge but also a development opportunity. This is especially true when prices are higher at print shops[3].

2. Brand building process

2.1 Introduction to operation Mode

This article choose low cost low operational campus as a cut scene, at the same time created a virtual integral joint trading second-hand exchange and a new mode of knowledge sharing, and using "near abroad economy" with social knowledge, improve profitability, try their best to for demonstration at present there are some obstacles in cash in second-hand transactions provide feasible solutions and knowledge sharing. At the same time, flexible business mode is adopted to establish offline membership card mechanism and point system, so that consumption can obtain points, which can be directly printed or exchanged for gifts and stationery. Through cooperation with second-hand trading organizations, the point system is connected to improve the value of the point system. In each festival, carry out marketing, launch literature and printing souvenirs and printing discounts related to the festival;Set up group purchase packages, for class printing exercises, student organization leaflets printing discount. Online, membership card in each holiday will receive in addition to the original benefits, will receive new

gifts; Establish community feedback system, users have any comments and suggestions, we can timely feedback improvement; In each festival, push festival activities[4].

Through machine training, to achieve file level AI intelligent classification, intelligent retrieval, intelligent recommendation and so on, greatly saving the operation of the labor cost, in addition, in the operation of the actual combat process also produced the province of toner drum, printer automatic paper module and other new characteristics of technology. Fully absorb practical experience, concentrate on practical technology, fundamentally improve product quality and user experience. To establish a more stable and secure background: through APS and cloud technology to make the background more stable and secure, improve system compatibility, so as to enrich functions and compatible equipment, so as to increase the use of scenarios; At the same time to complete a more convenient and beautiful, more compatible front desk: although the numbering points, but the system upgrade is always! More convenient operation, beautiful, highly compatible front desk, not only to meet the necessary elements of obsessive-compulsive disorder people, but also the key point of full user portrait. On the basis of the high number of users, do a good job in connection with the topic: through the introduction and establishment of points system, operation goal, punch in and other communities, hold topic tea, users and users to increase the adhesion, and try how to connect life. Connected life: on the basis of the above, it can be easily hit so that users meet, work and live.

The current market ability, can be summed up in 2 + x + 1 and 3, two is two stability, the stability of the software and hardware technology and the stability of the site resources, a series of high, is now operational and efficient product xuan living community, the community coverage lingang town more than 12000 people, communities reached more than 1500 people, and there is still a growth number of average daily living as high as 20%; Campus activities launched by the community have enriched the recreational life of more than 40,000 people, radiating to 10 universities in Shanghai. In the brand co-signing activities, the team has extensive channels and high quality, and has brought ten thousand person-time exposure, transformation and realization for 12 brands such as Vivo, SF Express, Shanghai Telecom, Hujiang. com and Suning[5].

The 2 + 1 advantage, make the printing business as well as the other two directions are expanding, second-hand business transactions and knowledge sharing, easy to obtain, high-energy campus network effects, making it possible to both business, including second-hand trading makes revenue increased by 30%, the overall conversion rate rose to 40%, the knowledge sharing the team of the user is not limited in yangpu campus, Moreover, it greatly improves the continuous flow and heat of the basic self-help printing business, making the repurchase rate as high as 97%.

In terms of product marketing, the brand strategy, product strategy and price strategy as the starting point, in the brand strategy, brand awareness is a key step in the development and competition, "more efficient, lower price" as the brand creed, to create a real campus students like the brand.

2.2 Brand building methods

To sum up, we mainly establish the brand through the following ways:

(1) Establish our own community, relying on wechat public account and QQ group, to create exclusive circles for our users, which is also the path for us to reach users in the first time;

(2) Brand activities in the freshman season: cooperated with relevant student organizations through freshman group and Baidu Post Bar

And other means to obtain students into the school's first good impression;

(3) Cooperate with student organizations and classes in the university by providing sponsorship in many aspects, such as group construction costs and printing costs

It is possible to establish long-term relationships and thus achieve "person-to-person" effects;

(4) Sometimes cooperate with brands that young people outside the school like, such as Vivo and Pepsi, etc. , through lianhe

Name activities to enhance their brand value, and gradually create a new tone in line with young people.

2.3 Product Strategy Description

In terms of product strategy, our strategy is as follows:

The products and services provided mainly cover: black and white, color printing; CD burning, etc. ;

(1) Product features based on cloud printing technology, break the long queue, printing time inflexible problems;

(2) Pay attention to service, aiming at more efficient and cheaper printing services.

2.4 Price Strategy description

In terms of price strategy, our strategy is as follows:

(1) At present, the pricing in Shanghai printing industry is uniform, black and white single-sided printing 0.2 yuan/sheet, double-sided printing 0.3 yuan/sheet, color single-sided printing 1 yuan/sheet, double-sided printing 1.5 yuan/sheet;

(2) Compared with competitors, the printing price can be further reduced by introducing advertisements. Students who accept advertisements can get discounts or even free.

(3) After one year of actual offline operation, various financial conditions of project operation are analyzed as shown in Figure 3 and Table 1.

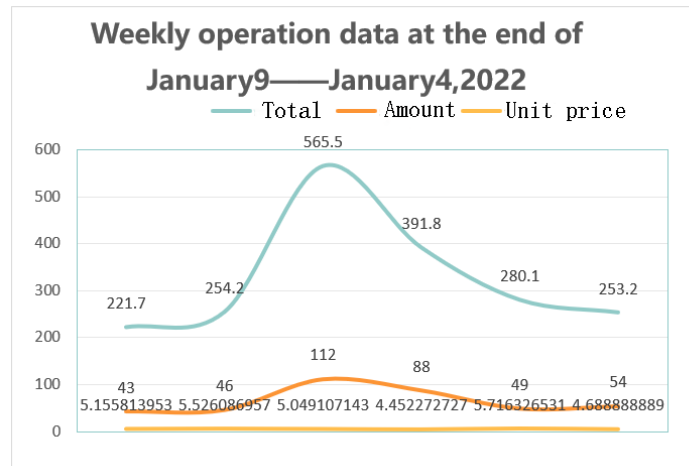


Figure 3: Business data trend chart

Table 1: Business data table

classification	project	Cost detail	Total (yuan)
Management fees	Server rent	Server rent	10000 / year
	Buying office equipment	Office supplies, stationery, service tools, printers	10000
	The electricity and water	0 / month	0
	Broadband fee	0 / year	0
	Office rent	700 / month	8400 / year
Advertising costs	Offline advertising medium	200 / year * 100 6000	20000 6000
	Staff training costs	50000	50000
Fixed expenses	Allowance for meals	5000	5000
	Personnel salary	3000 / person/month	130000 / year
	Credit margin	10000	10000
	Website, software development funds	190000	190000 (Not yet available)
	Website, software maintenance funds	5000 / month	60000
The total amount			49940

3. Summary of advantages of cloud printing

At present, Internet printing is still a new thing for most people. Although there are some platforms, there are only a small number of them, and only a few competitors coexist. There is no absolute advantage of competitors. Most online printing platforms are based on the campus market, ignoring the huge demand for printing outside of campus. At present, the main body of campus printing is still physical printing shops. There are some online printing platforms on individual campuses, such as campus printing, suimi, V-printing cloud printing and new printing, but these online printing platforms have not been started for a long time, and the popularity rate is far from reaching expectations.

Through the analysis of the above market players of cloud printing, it can be concluded that in terms of cloud technology, cloud printing technology makes the use of printers more efficient. Students can upload files and pay online, which greatly saves the offline operation time, avoids queuing congestion during printing peak hours and improves the life efficiency of students. From the perspective of business model: Self-sufficiency and the opening of work-study positions can ensure the good operation of the project and the intergenerational inheritance.

Advantages of cloud printing are as follows:

(1) Higher printing efficiency

Through Internet information technology, students can send the documents to be printed in advance on the cloud printing platform, avoiding the queuing peak in traditional printing. Cloud printing businesses can make full use of idle resources, arrange printing reasonably, and improve the printing efficiency while improving profits.

(2) Higher quality of printing service

On the one hand, because it is not limited to equipment, working time, personnel and site, cloud printing can provide higher quality printing; Cloud printing, on the other hand, effectively avoids customers' long wait at a print shop and offers optional home delivery after printing. At the same time to provide after-sales service and feedback channels to fully meet customer demand, to provide high quality printing services.

(3) More favorable prices

The cloud printing platform effectively reduces the cost of idle resources and the labor cost of specific waiting work. Relying on Internet informatization, the cost required is lower when the printing products are the same, so the printing price is also more preferential, which is more in line with the consumption habits of college students.

(4) User privacy and data security are guaranteed

The cloud server will automatically encrypt and process the printed document information uploaded by different customers, thus fundamentally ensuring user privacy and data security.

With advantages at the same time, cloud printing projects also have certain risks, this paper from the two aspects of technical risk and market risk, technical risk and market risk analysis and countermeasures. In terms of technical risk, cloud print is still facing the problem of poor compatibility, not very good and the integration of other traditional printing technology development, achieve the freedom of all kinds of scenarios using switch, at the same time, the behavior of the customer self-service printing makes some personal information, and also print document content such as leakage, information security concerns. To solve this problem, we can improve and upgrade the self-printing system through technical means, continuously improve the background procedures, and constantly improve the development, so as to improve the stability, compatibility and security of the system. Secondly in terms of market risk, cloud printed at a lower price to compete with traditional print shop, after the introduction of advertising fee reductions for willing to accept advertising clients, even provide free services, it will lead to the project by free to increase the charge excessive problems, aiming at this problem, puts forward the countermeasures, namely tougher user agreement, At the same time, coordination should be carried out gradually through investigation, community and guidance.

In this information age, based on the development of cloud printing, the disadvantages of traditional printing are analyzed, and the meaning and advantages of cloud printing are described. Later, through rigorous market research and team cooperation, we successfully established a cloud printing platform on campus, and achieved certain stage results through operation. At the same time, through the promotion of cloud printing platform, most customers say that it reduces personal time cost and printing cost,

provides different consumption experience from traditional printing shops, and is more in line with the printing needs of colleges and universities.

The Internet sharing cloud printing industry in colleges and universities has just started, service system and operating system still need to be improved and innovated, theoretical knowledge needs to be expanded and supported, and technical equipment needs to be studied and reformed constantly. Through the practice of cloud printing platform in colleges and universities, we find that the Internet sharing cloud printing industry is still facing some challenges, such as the low degree of development of cloud printing market in colleges and universities, heavy resistance to cloud printing subversion and insufficient promotion, lack of effective profit methods, lack of customer stickiness and so on. However, it is certain that the Internet sharing cloud printing service based on cloud computing is an inevitable trend of the development of social informatization. With the development of the Internet, the market prospect of cloud printing is bright. Cloud printing technology based on LBS knowledge sharing is the "afterwave" of cloud printing, which makes cloud printing more stable, safe and highly compatible in different application scenarios. Cloud is connection, printing is life, and cloud printing connects more people's lives.

4. Conclusion

Based on LBS and knowledge sharing cloud printing technology to explore, through research found that the current cloud print market there exists a big gap, although individual regions have launched several online printing platform, but the lack of customer base, a single service, in the customer profile is low, no development to a certain size, market influence is small, lack of penetration. And the current colleges and universities as well as small and medium-sized enterprises demand for cultural knowledge industry is very big, in this case, with a lower operational cost and new mode of "neighbor economy" to enter the university and small business market, supplemented by social knowledge, knowledge sharing, improve profitability, demonstration to at present there are some obstacles in cash in second-hand transactions provide feasible solutions and knowledge sharing. Secondly, through the training to the machine, to realize the intelligent classification file level of ai, intelligent retrieval, intelligent recommendation, cost savings, at the same time, can fundamentally comprehensively improve the quality of products and user experience, and establish more stable and safer background, compiling by the APS and cloud technology makes the background is more stable, safe, and improve the system compatibility, thus enriching function and compatibility devices, In order to increase the use of the scene, depicting a richer user portrait. Finally, in the era of information, the Internet sharing cloud printing service based on cloud computing is an inevitable trend of the development of social information. With a novel and reasonable business model, supplemented by the new technology of Internet +, its prospects are bright.

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