

Problems and Countermeasures in the Development of China's Cosmetic Industry

Haoran Fu^{1, a}, Huahui Li^{2, b, *} and Nana Wang^{1, c}

¹School of Economics, Anyang Normal University, Anyang, China.

²School of Mathematics, Anyang University, Anyang, China.

^ahao3681@foxmail.com, ^b853391460@qq.com, ^c798818768@qq.com

Abstract

In recent years, with the continuous development of China's economy, the people's material wealth and living standards have been significantly improved, the demand for cosmetics and other non-essential necessities is also increasing, and the cosmetics industry is also showing a relatively rapid development trend. This paper analyses the basic situation of the development of the cosmetics industry, and puts forward some improvement measures based on the current development opportunities, aiming to promote the development and progress of the cosmetics industry.

Keywords

Cosmetic industry; Opportunities for development; Improving countermeasures.

1. INTRODUCTION

The development process of China's cosmetics industry can be roughly divided into the following stages. The first stage is before the reform and opening up. At this stage, China's cosmetics mainly serve a small number of high-income classes, with a single product category. The second stage is the decades after the reform. During this period, China's cosmetics market sales increased year by year, which greatly stimulated the growth of the national economy. The third stage is after the "12th Five-Year Plan". At this stage, China's cosmetics industry mainly focuses on transformation and upgrading, and is committed to creating high-quality local brands and achieving "Mind in China".

From the perspective of regional distribution, first-tier cities with higher per capita income and consumption level occupy a larger share of the cosmetics market, for example, Guangdong, Shanghai, Shenzhen and other cities. Although other regions cannot compare with these big cities, their sales are also rising continuously, with obvious room for improvement. From the perspective of product characteristics, the high-end market is occupied by foreign brands. Chinese local brands are mainly concentrated in the middle and low-end fields, relying on low prices to seize the market.

2. PROBLEMS IN CHINA'S COSMETIC INDUSTRY

2.1. Industry Management System Is Not Standardised

(1) Imperfect laws and regulations

As a miniature of the tertiary industry, the cosmetic industry's development level is closely related to economic development and is easily affected by relevant laws, regulations and national policies. However, in recent years, China has paid more attention to heavy industry and emerging high-tech industries, which is vital to the national economy. Due to the lack of

attention and support for the development of cosmetics, there is no perfect legal restriction and policy support for the cosmetics industry, which is easy to breed some behaviours that disturb the market order, such as tax evasion, tax avoidance, forgery, counterfeiting and other phenomena, seriously affecting the industry order and hindering the development of the cosmetics industry.

(2) Low awareness of intellectual property

On the one hand, the overall education level of our country's citizens is low, and the society has little guidance on the protection of intellectual property rights, resulting in the lack of public awareness of intellectual property rights and the low ability to identify authenticity. On the other hand, cosmetic enterprises in our country started late. Most of them are still small and medium-sized enterprises with short operation time and insufficient management experience. They do not have a complete set of management mode and pursue interests excessively. This has led to a serious phenomenon of fake and shoddy cosmetics in our country, and gradually spread from the high-end well-known cosmetics field to the low-end field. In the development and marketing of enterprises, to pursue high profits, they ignore the industry ethics, blindly imitate or even forge famous brands, which has no guarantee of quality. It not only damages the reputation and public praise of enterprises, but also poses a threat to the personal safety of consumers. Some even violate the law, resulting in the neglect and resistance of China's cosmetics in the international market, thus affecting the export of the entire cosmetics industry in China.

(3) Imperfect after-sales service system

In the development of cosmetics, having a perfect after-sales service system has the prospect of sustainable development. Cosmetics is a kind of high-end consumer goods, consumers not only buy the goods themselves, but also buy the service system of cosmetics enterprises, which requires our enterprises to do a good job in the construction of after-sales service system before entering the market. However, there is a clear gap between China's cosmetic enterprises and foreign enterprises in terms of after-sales service. On the one hand, the phenomenon of enterprises shirking responsibility is serious. When many enterprises encounter feedback and complaints, the first thing they do is not to find problems and appease consumers, but to find ways to clear themselves and evade responsibilities, seemingly avoiding compensation in the short term, but in the long run, it leads to a decrease in consumers' trust in the brand and is not conducive to maintaining the reputation of enterprises. On the other hand, failed to establish a nationwide chain of after-sales service system. For most cosmetic enterprises in our country, the task of establishing a nationwide chain of after-sales services is arduous, let alone overseas markets. After many consumers buy products, there is no solution to the problems they encounter. In the long run, consumers will give up this enterprise, causing a serious loss of customers.

2.2. Insufficient Investment in Technology Research and Development

(1) Weak technical strength

At present, we are in an era of knowledge economy. The core competitiveness of a brand is particularly important, which greatly affects the development of an enterprise. Compared with some countries with developed cosmetics industry, China's cosmetics industry started late, and the R & D awareness of enterprises was weak. Most enterprises could not realise the importance of R & D innovation, and enterprises invested less in R & D, resulting in low R & D ability and innovation level of enterprises. According to the relevant data, P & G company in the United States and L'Oreal Group in Paris have dozens of technology centres, and even the giants in the cosmetics industry in China still have a considerable gap compared with them. So far, the low investment in R & D and the weak innovation ability

directly lead to the poor quality and the lack of attraction of cosmetics products in China, which has become the obstacle to the development of cosmetics enterprises in China.

(2) Lack of human resources

Human beings are the main body of market economic activities. The development of enterprises cannot be separated from human beings, and the cosmetics industry is no exception. However, at present, China's cosmetics enterprises lack relevant technical personnel and human resources. There are two main reasons: first, our country does not know enough about the development prospect and importance of the cosmetics industry and few colleges and universities in our country set up relevant professional courses, thus the personnel training is not in place. Second, enterprises lack attention to talents, and some high-end talents cannot give full play to their knowledge and realise their value in domestic enterprises. Enterprises cannot retain talents, and a large number of related talents flow into foreign companies, resulting in fewer research and development personnel engaged in cosmetics research and development in China, which restricts the development of cosmetics industry.

2.3. Unclear Market Classification

(1) Unclear positioning of cosmetics enterprises

If an enterprise wants to develop, it first needs to find its orientation. Only with a clear and correct orientation can it have its direction and goal. However, China's cosmetics industry often lacks this kind of awareness. A large number of enterprises imitate each other. Many enterprises devote themselves to hot or low-end fields in an attempt to win by price, but ignore what they are suitable for and good at, resulting in crowded markets in low-end fields. The results are often counterproductive and even lose their original advantages. However, careful observation shows that in recent years, some local brands such as "Family Lady" and "Herborist" have developed rapidly in our country. One of the key reasons is to find the correct market position, give full play to the advantages of enterprises and aim at the medium and high-grade fields to make up for the shortage of foreign products and local brands. To quickly find their customer groups in the market, occupy the market share, and have achieved great success, and also provided successful experience for other enterprises.

(2) Consumers lack correct understanding

As a non-daily necessity, good publicity and guidance have great promotion effect on the cosmetics industry, and the media, as a link between consumers and producers, has great influence. As the final link of market production, consumers often lack a correct understanding of the products they buy, do not know what they are suitable for, and are vulnerable to advertising and publicity. However, in this respect, compared with domestic enterprises, many powerful foreign-funded enterprises have a clearer understanding and can cater to consumers' psychology and guide consumers to buy their products. They often invest a large number of advertisements in the Chinese market and use consumers' psychology of blindly following the trend to guide consumers to make irrational choices following advertisements. However, due to insufficient funds and awareness of publicity, China's cosmetics enterprises cannot compete with foreign enterprises in this respect. Under this background, the development of China's cosmetics industry is not easy.

2.4. Brand Building Needs to Be Strengthened

(1) Historical factors

Compared with China's cosmetics industry, which started late and has a weak foundation, some well-known foreign cosmetics brands have been established as early as last century, with a long history and rich development experience. For example, Chanel was founded in 1910 in Paris, France, with a history of more than 100 years. Dior was founded in 1946 with a history of

several decades. These internationally renowned brands have formed their unique styles in long-term development, with wide popularity and stable consumer groups. However, China's cosmetics enterprises started late and began to develop in recent years. Compared with some established enterprises, there is a big gap in popularity, and relatively stable customer groups have not yet been formed. The competitive advantage is not obvious enough.

(2) Low brand awareness

As an important component of products, brands have high added value. A good corporate brand can often attract fixed consumer groups and achieve stable development. The cosmetics industry is no exception. Good cosmetics brands often have stable fan customers. However, most cosmetic enterprises in our country often do not have this awareness, do not pay attention to brand building, pay too much attention to immediate interests, and have no long-term plans. This leads to serious homogenisation of products, low brand awareness, difficulty in forming influence in consumers' minds, and no competitive advantage compared with other countries, thus greatly hindering the development of the international market.

2.5. The Characteristic Development of Products Is Not Obvious

(1) Lack of cosmetics with Chinese characteristics

In an atmosphere of increasing calls for global environmental protection, the cosmetics industry is no exception. Consumers are increasingly calling for cosmetics that are environmentally friendly, free of additives and degradable. In the future, more natural and safer cosmetics will be more and more popular with people. In this trend, Chinese herbal medicine cosmetics came into being. For example, in recent years, "Herborist", which is very popular among people, follows the concept of "modern Chinese herbal medicine ancient prescription personal care experts", adheres to the concept of "beauty comes from the root and balance has its way", combines the Chinese herbal medicine culture that has been passed down for thousands of years with modern scientific and technological research and development, and creates products suitable for various skin uses of beauty lovers all over the world. In a short period, it enjoyed a good reputation overseas and realised the real Chinese creation. However, in this trend, most enterprises in our country cannot seize the opportunity and give full play to their advantages just like "Herborist". They are only used by large foreign companies as raw material import places and processing factories. They use advanced foreign technologies to extract ingredients from Chinese herbal medicines, and then label their products with international brands, thus achieving the effect of being worth hundreds of times, while Chinese enterprises can only earn a small number of raw material export fees and processing fees. Therefore, in the face of this situation, Chinese enterprises should actively participate in the research and development of green products, give full play to the advantages of Chinese herbal medicine research with a long history, and walk out of their "green cosmetics" road.

(2) Potential of men's cosmetics have not been explored

In traditional society, men are often considered masculine and seldom use cosmetics and skincare products. However, with the development of society and the change of people's concept and consciousness, in order to meet the needs of social activities and the requirements of improving their image, men pay more and more attention to their image, so they start to try various new things. Men's cosmetics have long been regarded as a gold mine yet to be developed. Various brands are gradually looking for men as spokesmen. More and more men's cosmetics are beginning to appear on the terminal shelves, and even many stores have set up special men's cosmetics counters. However, there are few brands of R&D investment in these products, most of which come from foreign enterprises. Most enterprises in our country have not changed their minds, have not realised the potential of the men's cosmetics market, and have not paid

attention to research and development and investment in this area, leading foreign enterprises to occupy the men's cosmetics market ahead of time.

3. OPPORTUNITIES FOR DEVELOPMENT OF COSMETIC INDUSTRY

3.1. More Supportive Policies for the Development of Cosmetics Industry

Cosmetics industry is an industry with great development potential. Its development has a great impact on China's economic development. In recent years, the sales volume of cosmetics industry in China has been increasing. The government has issued a series of policies for its sustainable and healthy development. In the past few years, the cosmetic industry has fully released the policy dividend, providing a lot of convenience for the development of the cosmetic industry. At the same time, the national supervision and management of the cosmetics industry has also continued to develop, and a series of policies have been issued:

Table 1. Chinese government's policies to support the development of the cosmetics industry in 2018

Year	Policy	Specific measures
April 2018	Official Reply of the food and Drug Administration on the naming of domestic non Management requirements for sunscreen identification of	Products newly applied for filing shall not be named cosmetics using the relevant terms such as "doctor". For sunscreen cosmetics applying for administrative license, the identification of sunscreen index shall be based on the actual SPF value of the product.
May 2018	Opinions on promoting innovation and transformation of physical retail Technical code for safety of cosmetics (2015 Edition)	We will promote the integration of online and offline physical retailing, encourage retail enterprises to integrate resources, and step up efforts to support the introduction of well-known foreign brands The safety technical requirements for cosmetics are specified, including general requirements, prohibited and restricted components requirements, quasi-used components requirements, inspection and evaluation methods, etc.

The introduction of these policies has effectively standardised the development of the cosmetics industry, improved the channels of information disclosure, facilitated people to strengthen their understanding of cosmetics-related information, maintained market order, purified the environment for the development of the cosmetics industry, and promoted the development of cosmetics in China.

3.2. Increased Demand in Emerging Markets

In recent years, under the background of economic globalisation, many developing countries have been rising continuously, their economic strength has been significantly improved, people's living standards have been improved, and the number of middle class has been

expanding. Under such conditions, more and more people are more willing to consume, invest money in skin care, and spend more money to buy cosmetics of different grades. So in this situation, the cosmetics market in many countries began to flourish and the sales of cosmetics surged. In particular, Latin American countries have become one of the fastest growing regions, among which Brazil is an important country to promote the growth of skin care products in Latin American countries. Secondly, European countries are also the main market of cosmetics consumption, making a great contribution to global cosmetics sales every year. More importantly, China is also a huge market that can not be ignored. In recent years, the ranking of skin care products sales in the Asia Pacific area is rising, and the market share is also growing rapidly. Therefore, we should actively explore emerging markets, build our brand value in these emerging areas, and seize the market.

3.3. E-commerce Enriches Development Channels

With the development of Internet and information technology, e-commerce has become increasingly active in economic development and has become a key factor in stimulating economic growth. It also plays a great role in promoting the development of cosmetics industry. This is mainly manifested in two aspects: first, in stimulating domestic demand for cosmetics. Compared with the real economy, e-commerce has the advantages of convenience and quickness. Consumers can purchase goods directly on the Internet, which greatly stimulates consumer demand. Second, overseas markets can be expanded. Cross-border e-commerce breaks through the distance between time and space, breaks the time and space restriction between enterprises and overseas consumers and can promote foreign consumers to buy cosmetics from China and expand overseas market share.

4. COUNTERMEASURES AND SUGGESTIONS FOR THE DEVELOPMENT OF COSMETIC INDUSTRY

4.1. Improve the Management System of Cosmetics Industry

Cosmetics, as daily consumer goods for the public, because of its direct contact with skin, its product quality is of vital importance to consumers and can affect their health. However, in recent years, unsafe cosmetic incidents often occur in society. The main reason is that some cosmetic enterprises, to pursue high profits and disregard the safety of consumers, illegally add some banned ingredients to their products. Therefore, in order to strengthen the supervision of the cosmetics industry, the relevant departments of our government have successively revised and promulgated the "Regulations on the Administration of Cosmetic Marks" and other regulatory programs, aiming at more strictly standardizing the cosmetics market in our country and maintaining the market order. The most important thing is that enterprises should pay attention to quality, strengthen self-discipline of the industry, establish corresponding prevention and crisis handling mechanisms, and strengthen the quality and service awareness of the industry personnel. Government departments should strengthen market supervision, supervise and control every link of product production, and strengthen punishment to enterprises violating the rules, to make an example and prevent harmful products from entering the market. Consumers should also improve the ability to identify authenticity, know what they are suitable for, and do not blindly follow the trend.

4.2. Increase Investment in Technology Research and Development

Cosmetics is a kind of product with high requirements for technology and quality. Its quality, innovation and large-scale application of technology are important reasons for enterprises to win. In this respect, some foreign cosmetics enterprises can provide valuable experience for our country. For example, Unilever, Estee Lauder, P & G and other companies pay great attention to product innovation and research and development. They have established a large

number of research institutes, trained and absorbed a large number of top professionals, and conducted a large number of research on products. In China, many enterprises in other fields also regard the Research Institute as an important symbol to show the status and product level of enterprises. However, China's cosmetics industry has not paid enough attention to this aspect of the problem. It is always unable to timely adjust products according to the needs of the market and consumers, resulting in products that are not novel enough to adapt to changes in the market environment. Therefore, China's cosmetics industry should pay more attention to product research and development, increase capital investment in product science and technology research and development, pay attention to the development of new products according to market changes, and continuously improve the quality and grade of export products. To strive to occupy the markets of emerging countries, enhance the export capacity of cosmetics and win a place in the international cosmetics market.

4.3. Clear Market Classification

As the R & D and creator of products, enterprises should be clear about their positioning in economic development. Accurate positioning can make enterprises occupy an advantage in the fierce competition and avoid detours. Generally speaking, the quality of cosmetics in China is good, but the positioning of many cosmetics enterprises is not very clear, which has become a major obstacle to the development of cosmetics enterprises in China. Therefore, it is a key factor for Chinese enterprises to define the position of cosmetics. In this context, Chinese enterprises should do the following: first, we should combine the characteristics, functions and attributes of products to locate and target customers. For example, INOHERB is a successful case. In its development process, inoherb fully upholds the concept of "Herbal skin care", aims at creating natural and safe products, and adheres to the management concept of only skin care products, leaving a deep impression on consumers. This is especially true of "Herborist", which is a classic example of differentiation strategy. Its success is mainly due to clear market division. Its products are mainly extracted from pure plants and focus on natural skin care. Due to its irreplaceability, Herborist quickly gained fame in the market and became a top cosmetics company. It also brought extremely considerable returns to itself, and the profitability of the company increased rapidly. Second, it is necessary to position the products according to their prices and define the target markets of different grades. Price is a key factor for consumers to choose commodities. The price range of products directly affects consumers' judgment on their quality. If the price is too low, consumers will doubt the quality of products. If the price is too high, products will not have competitive advantages. For example, Pehchaolin, as an enterprise with a long history, the quality of Pehchaolin has been recognised by many people. However, due to its low price, many consumers classify it as a low-end product, which affects consumers' choices. In the long run, the brand of the enterprise has also been seriously affected. This shows that if an enterprise wants to win in the fierce competition, it must find the correct product positioning, pay attention to price strategy, give full play to its characteristics, highlight the irreplaceable nature of products, and avoid homogenisation. To create a specific image of the product in the minds of customers and form their unique advantages that cannot be duplicated.

4.4. Strengthen Brand Construction and Build Brand Advantage

In the 21st century, the world has entered a competitive era of brand internationalization. The establishment and development of well-known brands has become an inevitable development strategy for enterprises, especially in the cosmetics industry. In modern marketing, cosmetic enterprises in China can only seek survival and development in the fierce market competition by combining brand building strategies. However, most cosmetic enterprises in our country started late, and their managers lack brand awareness, which still leaves a big gap compared with international famous cosmetic brands. In this context, China's cosmetics enterprises urgently need to create their brands, establish long-term strategies and

concepts, and form their brand characteristics. First of all, we should form a correct understanding of the international outstanding cosmetic enterprises and learn from their development experience. For example: Estee Lauder, Clinique, etc., in the long development process, they have formed a set of perfect systems and concepts for brand creation. As a new cosmetics enterprise, we should be good at learning from successful experiences. However, reference does not mean blind imitation. Chinese enterprises should combine the actual local situation and different characteristics of enterprises to perfect them and form their brand building journey. Secondly, enterprise managers and managers should always establish a sense of brand building. Managers and managers of enterprises are the navigation and soul of enterprise development. Their decisions will affect or even determine the development direction of enterprises. Therefore, in the process of enterprise management and decision-making, enterprise managers should consciously run through the enterprise's brand building concept and form a unique brand building route. For example, the leaders of Meibaobao products have always adhered to the concept of "Chinese charm" in their business operations and are committed to creating cosmetics brands with Chinese characteristics. At the same time, with the increasing income of residents in our country, consumers' demand for high-end products is also increasingly strong, and brand awareness is constantly increasing. Therefore, Chinese enterprises should increase the construction of high-end cosmetics brands, gradually get rid of the inherent impression of winning by price and low-end products, attach importance to the quality of products, build high-quality domestic cosmetics brands, and strive to change "Made in China" into "Mind in China".

4.5. Give Full Play to Advantages and Develop Products with Chinese Characteristics

With the development of economy, people's income and living standard are continuously improving, and the requirements for cosmetics are also increasingly diversified. Cosmetics and cosmetics with Chinese characteristics emerge as the times require. As China has a long history of Chinese herbal medicine research, it has accumulated rich experience in various aspects of Chinese herbal medicine and provided a large number of references for research and development of Chinese herbal cosmetics, which has incomparable advantages over other countries. Coupled with the development of modern science and technology, Chinese herbal medicine cosmetics will be the future development trend of China's cosmetics, which can provide good development opportunities for China's cosmetics enterprises. Therefore, China's cosmetics enterprises should conform to the development situation, give full play to their advantages, develop healthy and effective products, and create their "green cosmetics" brand. The following aspects should be done: First, combining the theory of traditional Chinese medicine and cultural background, research and development of quality products. Traditional Chinese medicine has a history of thousands of years in our country and has rich clinical experience. In ancient China, Chinese herbal medicine was also used for beauty treatment. Therefore, if our country wants to develop characteristic cosmetics, it cannot do without the support of traditional Chinese medicine. Second, a complete industrial chain of Chinese herbal medicine processing should be formed. With the development of modern science and the introduction of foreign advanced technologies, it is possible to extract skin-friendly ingredients from Chinese herbal medicines. Therefore, Chinese enterprises should combine the historical experience of Chinese herbal medicine and modern advanced technology to develop Chinese herbal medicine cosmetics. One of the more successful experiences is "family lady". most of its product ingredients come from the famous book "compendium of materia medica" of traditional Chinese medicine, from which appropriate Chinese ingredients are selected. after expert screening and research and development, products beneficial to skin are finally formed. Also, herbs and fragrances are added to each product to make itself unique in the market and form its competitive advantage. To sum up, only by giving full play to China's advantages in

traditional Chinese medicine and combining modern science and technology can Chinese herbal medicine products gain an advantage in the fierce competition.

4.6. Improve the After-Sales Service System

Brand is the goal, service is the life, and after-sales service system is of vital importance to the enterprise, which is mainly reflected in: on the one hand, it can help the enterprise attract new customers and retain old customers. On the other hand, realizing information feedback and obtaining customers' opinions on commodities and enterprises through after-sales service are beneficial to the improvement of enterprises. The most important thing is to form personalised sales and stand out in the same sales model. Chinese cosmetic enterprises should fully realise its importance and then provide pre-sale, in-sale and after-sale services to consumers. First of all, the service mode should be improved. According to the new "customer-centered" business model, CRM (customer relationship management) system is introduced. Establish a "one-to-one relationship" between the parties to the transaction. Only when the customers are satisfied can the turnover be increased. Through information sharing and optimisation of business processes, enterprise costs can be effectively reduced. Secondly, carry out innovative services. The so-called difference between brand products and general products is that it brings more convenience, attention and respect to consumers in after-sales service. Based on ensuring the quality of cosmetics, it can provide consumers with more extended services, such as cosmetics culture, etc. Finally, strengthen joint services. China's cosmetics enterprises can unite to set up a nationwide after-sales center, and also improve the language level and sales skills of the staff, which can promote the sales of cosmetics on the other hand.

5. SUMMARY

The development of cosmetics in China has reached a critical point. It is very important to have a clear understanding of it. Given the current problems in China's cosmetics industry, such as nonstandard industry management system, insufficient investment in technology research and development, unclear market classification, weak brand building, and unobvious product characteristic development, etc. We should put forward targeted countermeasures, such as: clarifying market classification, strengthening brand building, building brand advantages, developing products with Chinese characteristics, improving after-sales service system, etc., in order to promote the vigorous development of China's cosmetics industry.

REFERENCES

- [1] Yuan Tian. Analysis of the current situation of China's cosmetics industry and Research on countermeasures [J]. Chinese and foreign entrepreneurs, 2016, (04): 47-49.
- [2] Deng Jing. Current situation and future of China's cosmetics industry [J]. Daily cosmetics science, 2016, (01): 1-8.
- [3] Li Siyan. Analysis of the development status of China's cosmetics industry [J]. Modern economic information, 2015, (04): 394-396.
- [4] Sun Shijia. Microeconomic analysis of Chinese cosmetics market [J]. Commodity and quality, 2016, (45): 6-7.
- [5] Lu Zhengfei. Analysis of the development prospect of China's cosmetics market [J]. Research on commercial economy, 2013, (30): 42-43.
- [6] Wang Tao. China washing products industry [J]. Science of daily chemicals, 2014, (10): 65-69.
- [7] Wang Xiaojing. Analysis of the current situation of Chinese cosmetics market [J]. Market weekly, 2013,36 (11): 1-4.

- [8] Wang Ying. Competition analysis of Chinese cosmetics industry [J]. Business manager, 2015, (05): 22-25.
- [9] Fan Lili. PH cosmetics marketing channel research [J]. Harbin University of Technology, 2014, (09): 4-6.
- [10] Liu Ting. Analysis of the development trend of China's cosmetics industry [J]. Oriental corporate culture, 2014, (13): 12-14.
- [11] Zhang Yueqing. Current situation and future of Chinese cosmetic industry [J]. Engineering Technology, 2016, (11): 32-34.