



Bamboo Product Design Management and Marketing Research

Yaxian Chen¹, Jiaying Li¹, Sicheng Yao¹, Guohui Li¹, Wenqian Wang¹, Qianqian Lu¹,
Guangrun Liu¹, Jun Wang¹, Guitao Fu¹, Haiying Wang¹, Chang Liu¹, Jue Qian¹, Rong Pan¹,
Guodong Chen¹, Siyu Chen^{1*}, Qingchun Liu^{1*}, Yun Xue^{2*}, Li Wang^{1*}, Xiaobing Cao^{1,3*}

¹(School of Art and Design, Bamboo Research Institute, Department of Organization, Zhejiang A & F University, Hangzhou, Zhejiang 311300, China)

²(School of Fine Arts and Design, Baise College, Baise, Guangxi 533099, China)

³(Department of Chemical and Biological Engineering, University of British Columbia, Vancouver BC, Canada)

*Corresponding Author: Siyu Chen, Qingchun Liu, Yun Xue, Li Wang and Xiaobing Cao

ABSTRACT: As one of the key bamboo producing areas in China, the bamboo industry in Zhejiang Province is given good opportunities in the major strategic deployment of "Green Zhejiang", and bamboo has become a new highlight of Zhejiang's forestry industry. Therefore, the development and utilization of bamboo resources, give full play to the role of "bamboo instead of wood", is not only an effective way to ease the tension between the supply and demand of wood, but also the development of circular economy, the inevitable requirements of building a resource-saving society. The development of bamboo industry is an important support for the construction of forest Zhejiang and the realization of the goal of strong green economy. The study mainly analyzes the modern market demand for bamboo products and innovates the research method of bamboo material application in modern aesthetic life. Through a lot of market research, combined with the technical development and production management of bamboo products, the marketing plan of bamboo products is initially improved.

KEYWORDS: Bamboo product design; bamboo product production; marketing and sales; design management.

Received 12 Sep, 2022; Revised 25 Sep., 2022; Accepted 28 Sep., 2022 © The author(s) 2022.

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I. INTRODUCTION

In terms of financial risk, we need to invest heavily in research and development to maintain our technological advantage, and operating cash flow may become tight if we need funds urgently in the process of expansion. In terms of technology risk, we need to increase investment in R&D funds, strengthen cooperation with other universities and related enterprises, and continuously attract outstanding talents to enhance the company's technological R&D capability to avoid this risk. In terms of marketing risk, we should grasp the market in time, adhere to the market as the center, and grasp the market information. According to the changing needs of consumers, expand other product lines, so as to achieve other sources of profit for the enterprise.

The project takes "environmental protection and natural, elegant and livable" as the marketing concept, and "low-carbon and exquisite life" will be carried out in the whole process of marketing activities. Pre-phase: Rely on the school platform and industry platform to promote the technology through relevant industry meetings (Bamboo Expo, Mori Expo, Liang Xi Forestry Conference, Bamboo and Rattan Development Conference, Merchants Association). Mid-term: establish a website, gradually establish and improve the network marketing platform, and do continuous research and development of bamboo technology. Consider establishing a perfect technical promotion team according to the specific development status. Later period: have a certain economic foundation and step into a new starting point. The company will quickly reach cooperation with a number of decoration companies and small commodity

companies to ensure a steady growth of the company's profits. At the same time develop a series of bamboo derivatives of the company.

Table 1. This is a table. Tables should be placed in the main text near to the first time they are cited.

Technical Name	Technology level	Technology Applications
Production technology and application of planed micro-thin bamboo	International Leader	Madrid Airport (Spain), Wuxi Grand Theater, New York Sound Hall (U.S.), Amsterdam International Airport (Netherlands), furniture veneer, materials for cultural and creative products, etc.
High-performance bamboo-based fiber composite manufacturing technology and applications	International Leader	Shanghai World Expo Theme Park Project, Zhejiang Youth Olympic Games Project, Vanke Beijing Headquarters, Holland Seaside Pier, Tianjin Vanke Eco-city Jinlu, Wuxi Jinchengwan Park, etc.
Bamboo engineering materials manufacturing key technology research and demonstration	International Leader	BMW car interiors, Qiandao Lake villa group, Hebei Youth Palace, etc.
Innovation and application of bamboo-wood composite structure theory	International Leader	Bamboo mat bamboo curtain bamboo wood composite container floor, bamboo wood composite container floor, OSB core bamboo wood composite container floor, concave and convex pattern surface composite container floor, etc.
Continuous automated production technology of bamboo composite materials and recombinant materials	International Leader	National 13th Five-Year Plan Key R&D Projects
High-performance bamboo materials for architectural vignettes	International Leader	Bamboo pavilions, bamboo buildings, bamboo bridges, bamboo walkways, bamboo toilets, bamboo building vignettes, etc.

II. MATERIAL AND METHODS

2.1 BAMBOO PRODUCTS PRODUCTION OVERVIEW

Planing thin bamboo is processed from raw bamboo cross-section, longitudinal sawing or slicing, rough planing, steaming, drying and fine planing into rectangular section bamboo strips; then made into radially glued bamboo glue board by gluing, grouping and side pressing; after that, air-dried bamboo glue board is injected with softening agent and bamboo glue board is stacked and wet glued to make bamboo cube; bamboo cube is fully softened and planed on planing machine to get thin bamboo product parts, and finally assembled to get final lighting products, thin bamboo business cards, postcards, jewelry. The whole process can realize environmental protection and green production.

2.2 RAW MATERIAL SUPPLY

China is extremely rich in bamboo resources, which can be sourced locally. In addition, melamine-modified urea-formaldehyde resin, polyvinyl acetate emulsion, water-based polymer isocyanate adhesive, non-woven fabric and other materials needed in the production can be purchased from the market.

2.3 PRODUCT STANDARDS, QUALITY CONTROL AND PRODUCTION COST CONTROL

Develop technical standards for the production of planed micro-thin bamboo, such as the thickness of planed micro-thin bamboo, the range of moisture content of the product, the mechanical strength that can be withstood, etc. The production quality is strictly in accordance with the product standards and quality inspection. Establish the operation procedures and quality inspection standards of each production link, optimize the operation, improve the yield rate and quantity of micro-thin bamboo products, and control the production cost through the production process control.

2.4 ENVIRONMENTAL PROTECTION

The raw material bamboo has the characteristics of fast growth and early maturity, its reasonable cutting not only does not damage the ecology, but also benefits its regeneration, which is very much in line with the low-carbon environmental protection concept advocated nowadays. This project is environmentally friendly and green, the production process is mostly physical processes such as pressing, planing, chipping, sanding, assembling, etc. Although adhesives are needed for gluing, the amount of glue used is very small and the improved technology will not endanger human health. And bamboo products can be freely degraded under natural conditions, will not produce secondary pollution and damage to the natural environment.

III. RESULT

3.1 BAMBOO PRODUCT MARKETING CONCEPT

We are committed to the development and promotion of bamboo derivatives produced by the planing and micro-thinning technology, and we will put the "low-carbon exquisite life" into the whole

process of marketing. The purpose is to pass on the concept of low carbon and environmental protection to all walks of life and to lay a good foundation for the sales of other products. Technical training will be provided to the marketing team to enable them to master the use of the company's products and to establish a good product concept, so that they can provide excellent service to customers and convey the necessity and economy of using bamboo products in their sales work.

3.2 BAMBOO PRODUCT MARKETING PLAN

In the next five years of development, the target market at this stage is mainly for Zhejiang area, family housing decoration and entertainment place decoration. It is expected that the market share of "Bamboo Light" lamps will achieve 20%, the market share of "Bamboo Visit" thin bamboo business cards will achieve 80%, the market share of "Bamboo Tour" postcards will achieve 90%, "Bamboo View" bookmark will achieve 80% market share, "Bamboo Mist" air humidifier will achieve 60% market share, and "Bamboo Art" ornaments will achieve 40% market share of "bamboo art" jewelry.

3.3 BAMBOO PRODUCT DESIGN STRATEGY

3.3.1 BAMBOO PRODUCT DEVELOPMENT STRATEGY

At the beginning, the core products are "Bamboo Light" lamps, "Chengzhu" air humidifiers and "Bamboo Visit" thin bamboo business cards produced by shaving micro-thin bamboo technology, and the waste generated can be transformed into the waste produced can be transformed into raw materials for paper making and used as a promotional aid. According to the market analysis, according to the target customers' requirements, our core products are lamps and lanterns, which are also the main profitable products; at the same time, we will also produce some bamboo business cards and bookmarks as our brand name promotional products, which are used in the announcement places, contacting more people and spreading the product information widely.

3.3.2 BAMBOO PRODUCT SERVICE STRATEGY

The product service strategy will also be designed for different characteristics of different target customers, taking the following different customers as an example. 1. Family housing decoration: the company will focus on the dynamic changes in the sale of real estate in various places, taking into account that people will be selling their houses, selling their houses will definitely need to carry out housing decoration, from which we will cooperate with the decoration company to talk, indirectly or directly introduce the company's products, the company We will actively communicate with target customers, develop and implement solutions for their needs, promote cooperation, speed up product updates and research and development, and continuously promote product line expansion to meet customer requirements to the greatest extent. The specific plan is as follows: first carry out preference survey and customer information collection, and carry out cooperation with its company in the pre-sale stage of its real estate to achieve mutual benefits. After cooperation we get the information we want, but also to ensure that what customers want only we can provide, in this case we then carry out and different decorative companies to talk about cooperation. 2. for entertainment and leisure places: we will carry out relevant data collection, investigation, finishing. Make the necessary reference effects, and cooperate with entertainment companies. 3. Open stores: open their own stores, sales and promotion of the company's products, do the corresponding product promotions, enhance the visibility of the product and radiation, to obtain the public's goodwill, to explore potential customers.

3.3.3 PRODUCT BRANDING STRATEGY

According to the famous American marketing expert Philip Kotler brand connotation theory, our company analyzed and determined the connotation of "Xin Bamboo Art" brand as follows: sit well in the position of the first cultural brand of bamboo derivatives in China; make customers feel healthy and beautiful, warm and harmonious; win multiple praises of cultural connotation, elegance, texture and touch in terms of benefits; focus on enhancing taste and pursuing ecological and environmental protection in terms of value.

3.4 BAMBOO PRODUCT PRICING STRATEGY

The Company intends to use a combination of "cost-plus pricing" and "competitive pricing". Cost is the bottom line of the price, which ensures the company's profit source. Competitor price is the maximum price to ensure the existence of customer transfer value. In addition, our bamboo business cards have advantages in use and cultural connotation over existing business cards in the market, and the final pricing will take into account the market demand and the acceptable price range for consumers. In terms of cost-plus pricing: The Company's bamboo lamps and lanterns are priced according to the cost-oriented

pricing method, and the "Bamboo Light" bamboo lamps and lanterns are priced according to the sum of the Company's expenses in the design, manufacturing and marketing stages plus profit. In addition, the company will consider moderate price adjustment according to the periodicity of product launch to ensure the smooth opening of the market. In terms of competitive pricing: At present, there are other products similar to the Company's bamboo derivatives on the market, such as wood, mahogany, plastic, of which plastic wood is the most representative, and is also a competitive threat to the Company's products.

3.5 BAMBOO PRODUCT CHANNEL STRATEGY

The company will fully consider the characteristics of various types of distributors and the characteristics of different customer groups, and design appropriate sales channels for different customers.

Table 2. Customer characteristics analysis table

Feature items	Entertainment Venue	Family House Decoration	General Needs
Brand Loyalty	Higher	Higher	High
Brand importance	Higher	Higher	Fair
Price Sensitivity	Lower, but to ensure product quality	Higher, but more important is the effect of the use of the product	High
Product importance	Higher requirement for product effect	To ensure the use of the product effect, life, safety and other high requirements	Price and quality are equally important

Channels have the following settings respectively:

Direct sales: The company will consider establishing a perfect direct sales team according to the specific development status, and the sales staff is expected to be 5 to 10 people, with the principle of regional division for staff grouping. Through this marketing team directly to the door, telephone, network and other ways to get in touch with customers and related business organizations around the world and further reach sales agreements. Customer orders will be unified into one with specific personnel, and the sales staff will serve as customer service while maintaining a good relationship with customers, and as an important part of measuring the performance of business personnel, sales compensation of 1% of sales is given to sales staff.

Distribution: Regional agency system - set up agents at all levels in accordance with the territory and region, initially the first provincial administrative regions as the standard for the division, each province to determine a cooperative distributor, through the percentage of sales divided into profits. Brand franchise system - in accordance with regional and local economic development, by the company's headquarters according to the development of brand operation needs to develop franchisees, there will also be part of the direct headquarters operating directly under the direct stores. Factory channel self-built type - by our company in major large and medium-sized cities to establish their own distribution channels, channel personnel under the factory headquarters, even including the establishment of a network of all directly operated stores.

Online sales: Online sales method - the use of the network platform's wide audience base and rapid dissemination capabilities, the company and end users to establish business relationships. That is, B2B, B2C, C2C using the network to build up the online model.

3.6 BAMBOO PRODUCT PROMOTION STRATEGY

Advertising is divided into two categories. Corporate image advertising: placing product advertisements in newspapers and advertising spaces in target markets to promote the product concept: bamboo instead of wood, low-carbon life; bamboo over wood, exquisite life. Word-of-mouth communication: through the establishment of customer relations, the formation of a good word-of-mouth.

Promotion strategy: Our company will adopt corresponding promotion strategy and supplement with advertising strategy to trigger and stimulate the purchasing behavior of target customers. Then add complimentary products: mainly used in the entertainment industry customers. These places themselves are entertainment and leisure areas, and giving away some necessary small bamboo products will gain a certain sense of friendliness and also promote the deepening of cooperation.

3.7 MARKET RESEARCH

The survey of the market condition of the planed micro-thin bamboo lamps and lanterns was carried out for the sales possibility survey, consumer and consumer demand, enterprise products, product prices, society affecting sales, and sales channels in order to analyze the market situation, understand the current market situation and its development trend, and provide objective and correct information for market forecast and marketing decisions. We use the interview method by visiting enterprises, public organizations.

3.8 ONLINE TRADING PLATFORM

With the development of the Internet, online sales will become a trend, so companies need to use the existing platforms on the Internet to launch online publicity and sales, to lay the foundation for the development of online sales channels. Existing agricultural trading platforms are also in the early stages of development, so it is generally possible to sign up for free membership and marketing costs are very low.

IV. DISCUSSION

4.1 FINANCING SOLUTIONS

The company intends to raise capital through investment by the founding shareholders and absorb venture capital. Offer 20% of equity to finance 1 million. After the company is established, shareholders will share the earnings and receive a 20% dividend at the end of the year on the net profit minus the balance of the surplus reserve, and shareholders will enjoy the year-end dividend in proportion to their shareholding.

4.2 SET UP INVESTMENT

The start-up costs such as staff salaries, registration fees and office expenses during the company's preparation period will be amortized as a lump sum when sales occur. Fixed assets are estimated based on the market value of equipment; the company's installation and construction costs are based on current material prices and cost levels; plant rental costs are estimated based on current business incubation park rents; and reserve costs are accrued at 10% of the sum of costs.

4.3 STAFFING AND COMPENSATION ALLOCATION

During the creation of the company, the main work and management of the company consisted of the founding shareholders, and due to limited funds, the salaries of the individual members were relatively low in order to save money. The salaries of the sales staff were calculated annually on the basis of base salary (1200) + commission (1% of sales revenue), which was included in the costing sheet. And in order to reduce the company's initial capital outflow, the rest of the job duties are held by the entrepreneurial team itself.

4.4 INVESTMENT RETURN AND RISK ANALYSIS

The company was established smoothly and was able to start normal operation in the first year, and the production and sales of the company's products were able to achieve a good connection, and the products were marketable, and the company rented a factory, production plant and office building.

4.5 BREAK-EVEN ANALYSIS

The raw materials used in the company's products are bamboo slices that have been planed and slightly thinned. The company's main preparation note: the company is exempt from income tax for two years of profit, and the income tax rate for the third year is 25%; the company first settled in the university business park in the early stage, providing preferential office space for college students, and its rent is 500 yuan/month.

4.6 SENSITIVITY ANALYSIS

The relatively uncertain factors affecting the Company's operating profit are the average cost price of raw materials and sales price. The third year was selected for a single-factor sensitivity analysis of these two. It can be seen that the sensitivity of the product to the sales price is greater than the sensitivity to the price of raw materials, so we have to determine the sales price reasonably in the company's operation.

4.7 KEY FINANCIAL ASSUMPTIONS

The company is exempt from income tax for two years from its inception from profitability, and the normal tax rate is 25%. The sales unit price is determined based on the characteristics of the product and the existing market. The average sales unit price is \$1.65 per sheet, assuming that the sales unit price remains unchanged during the operating period.

4.8 VENTURE CAPITAL EXITS

The venture capitalist will receive a dividend of \$33,400 by the end of the fifth year, based on the projected profile of the business. The venture capitalist may consider a split-line exit by selling the equity or having the equity acquired by shareholders such as the entrepreneurial team. The actual situation of the company may change, so the company also considers the use of transfer of equity to other companies,

equity buyback, profit sharing and other ways to implement the risk exit. The time frame for the risk exit is proposed to be in the 5th year after the establishment of the company.

V. CONCLUSION

In the long-term historical evolution and aesthetic practice of Chinese culture, bamboo has not only been used in people's daily life, but also become an aesthetic object of the spirit of traditional Chinese culture with its natural nature, unique character and freshness. Bamboo has the characteristics of fast growth and early maturity, and can be used forever after a successful planting. Moreover, bamboo is an environmental pioneer, and can replace wood and even plastic in many aspects due to its hard texture. China is the country with the richest variety of bamboo resources, the longest history of bamboo product production and the deepest bamboo cultural heritage. In order to thoroughly implement the important instruction of General Secretary Xi Jinping on developing bamboo industry according to local conditions and making bamboo forest a beautiful rural landscape, we accelerate the innovative development of bamboo industry. The development of bamboo industry also helps to create a green country. Bamboo not only has luxuriant leaves and well-developed underground whip roots, but also has the same carbon sequestration and oxygen release capacity as trees in the process of growth, and has strong self-renewal ability, and new bamboo forests can become timber in 5 to 8 years. Bamboo processing is a whole bamboo utilization, which improves the resource utilization rate and the added value of the products, and realizes the goal of reducing the consumption of resources and increasing the output of recycling. It is of great significance to adjust and optimize the economic structure and build an industrial system and consumption pattern characterized by low carbon emission. The project will adhere to ecological priority and green development; adhere to innovation-driven and technology-led; adhere to strategic perfection and mastery of the market, and add to the construction of bamboo industry.

VI. AUTHOR CONTRIBUTIONS

Conceptualization, Xiaobing Cao. and Yaxian Chen.; methodology, Wenqian Wang.; software, Guohui Li.; validation, Qianqian Lu., Guangrun Liu. and Jun Wang.; formal analysis, Guitao Fu.; investigation, Rong Pan.; resources, Qingchun Liu.; data curation, Yun Xue.; writing, original draft preparation, Xiaobing Cao.; writing, review, and editing, Haiying Wang.; visualization, Chang Liu.; supervision, Jue Qian.; project administration, Li Wang.; funding acquisition, Siyu Chen and Guodong Chen. All authors have read and agreed to the published version of the manuscript.

VII. FUNDING

This work was financially supported by funds from the Talent Initiation Project of Zhejiang Agriculture and Forestry University (2022FR007), Bamboo and Wood Industry Innovation Services (H20190219), Functional construction and product design development of wood wool composite materials (HW20220038), Bamboo traditional culture excavation and product design (H20200076), Research on double track design mode based on traditional bamboo cultural products (Y201737972), Innovative services and strategies for bamboo and wood industry based on cultural creativity (HW20220015), Study on the efficiency of binary sign recognition (2020FR021), Exploration of Innovative Entrepreneurship Education Model in Universities in Ethnic Regions under the Perspective of Applied University-Taking Design Major of Baise College as an Example (2018JG38), Research on the Impact of Government-Industry-University-Research Collaboration on the Scientific Research Output of Universities-An Empirical Analysis Based on the R&D Investment of Universities in Zhejiang Province (GJYY202105), The Key Research and Development Program of Zhejiang Province (2021C02005), and the Scientific Research and training Program for College students of Zhejiang Agriculture and Forestry University.

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