



Research on Brand Building of the Aerospace Technology Application Industry

Junhong Hui, Hairu Li, Yuan Jiang*

Beijing Aerospace Petrochemical Technology and Equipment Engineering Co., Ltd., Beijing
100176, China

huijh@calt11.cn; lihr2@calt11.cn;

*Corresponding author: jiangy2@calt11.cn

Abstract. Brand constitutes the core capital for enterprises in market competition. Taking Beijing Aerospace Petrochemical as the research subject, this paper elaborates on the importance of brand building, extracts corporate brand characteristics, constructs a "four-in-one" system covering awareness, projects, technology and culture, proposes breakthrough directions including digital transformation, and summarizes three pillars of brand development, providing systematic solutions and references for the enterprise and the industry.

Keywords: Enterprise Brand; Aerospace Petrochemical; Cultural Brand; Brand Building

1 Introduction: The Importance and Necessity of Building Enterprise Brands

The shaping of personal brands is similar to enterprise brand building, both rooted in long-term interaction and trust building. A brand determines product value beyond material and design, bringing premium, consumer recognition and trust, and is a comprehensive embodiment of an enterprise's culture, strength and security ^[1]. High-quality brands mean stable customer groups, and the ability to meet customer needs directly reflects brand competitiveness. The saying "Small enterprises focus on products, large enterprises on brands, and outstanding enterprises spread brand culture" highlights the core value of brand building, which is also the core logic for the sustainable development of enterprises in the aerospace technology application industry with high technical threshold and strong industrial relevance.

As a concentrated embodiment of enterprise image, a good brand helps attract investment, expand the market and build competitive barriers, as exemplified by the duopoly of Coca-Cola and Pepsi in the carbonated beverage market ^[2]. For the aerospace technology application industry, which is characterized by high R&D investment, long industrial chain and strong synergy between military and civilian integration, building independent brands is not only crucial for the economic benefits of enterprises such as Aerospace Petrochemical, but also has strategic significance for the

high-quality development of the entire industry. It is an important way to enhance the industrial discourse power of China's aerospace technology application field in the global market and realize the transformation from "made in China" to "created in China" and "branded in China".

In the context of global industrial restructuring and the deepening of domestic military-civilian integration strategy, the aerospace technology application industry is facing both unprecedented development opportunities and fierce market competition from international head enterprises. Brand building, as an important means to gather enterprise core resources, enhance customer stickiness and expand market space, has become an inevitable choice for Aerospace Petrochemical to achieve high-quality development. How to combine the unique aerospace gene with market demand, build a distinctive enterprise brand, and form a sustainable brand competitiveness has become a key issue that the enterprise needs to solve urgently.

2 Connotation and Characteristics of Aerospace Petrochemical's Brand

With economic globalization and industrial upgrading, strong brands have become the core support for industrial value leap^[3]. Although Aerospace Petrochemical's products and services can be imitated in technology, its brand connotation including quality commitment, corporate reputation and cultural philosophy is highly irreplicable. This irreplicability stems from the deep integration of the enterprise's decades of aerospace technology accumulation and market operation experience, and is the core asset formed by the long-term precipitation of the enterprise. Brand building enriches product spiritual connotation and extends the industrial value chain, and only with customer recognition and trust can the enterprise occupy a dominant market position in the fierce competition of the special pump and valve, combustion and thermal energy technology fields.

Aerospace Petrochemical takes "Relying on aerospace science and technology to lead special pump and valve, combustion and thermal energy technologies" as its core philosophy, with brand characteristics reflected in three aspects: first, the deep integration of brand with market and culture through the dual vertical strategy of "Reaching the top in science and technology vertically, and going deep into the market vertically", ensuring top-level technology and accurate market reach. This strategy makes the enterprise's brand stand out in the market with technological leadership and market adaptability; second, brand building based on market share, adhering to customer-centricity, building a modern marketing system, basing itself on the domestic market and laying out international strategies^[4]. The enterprise takes customer demand as the starting point and end point of all operations, and continuously optimizes products and services through in-depth market research, so that the brand can gain wide recognition in the market; third, brand building as a systematic project, focusing on industry responsibility, user value and technological innovation since 1984, with quality as the primary core element. For more than 30 years, the enterprise has always taken quality

as the lifeline of the brand, and built a good brand reputation in the industry with rigorous and pragmatic aerospace quality and professional and efficient service level.

The brand connotation of Aerospace Petrochemical is a multi-dimensional organic whole, which not only includes the hard power of technological innovation and product quality, but also the soft power of corporate culture and social responsibility. It is the integration of aerospace spirit and market culture, and the unity of enterprise development and industry progress. This unique brand connotation has become the core competitiveness of the enterprise to distinguish itself from other competitors and gain market recognition.

3 Characteristics of Enterprise Brand Building

The success of world-renowned brands such as Siemens, Apple, Huawei and JD lies in cultural genes and brand strategies integrated into long-term development, rather than just capital, scale or single technological breakthroughs [5]. By combing the development experience of these world-renowned brands and combining the development characteristics of the aerospace technology application industry, this paper summarizes five core characteristics of enterprise brand building, which also provide important reference for the brand building of Aerospace Petrochemical:

Reflecting competitiveness and relying on innovation: Brand is an irreplicable intangible asset, the core of enterprise competitiveness, and needs continuous technological innovation and product iteration to maintain vitality and leading position [6].

Centering on customer needs and relying on market insight: The vitality of a brand comes from meeting customer needs, and enterprises need to establish a customer dialogue mechanism, through market research and data analysis to insight into explicit and implicit needs, and guide product and service optimization [7]. For Aerospace Petrochemical, it is necessary to deeply understand the personalized and diversified needs of customers in different industries and regions, and provide customized solutions to enhance the matching degree between brand and customer demand.

Based on keeping promises and guaranteed by system and culture: Brand credit is the foundation of premium and asset accumulation, which requires enterprises to implant integrity into their philosophy, build quality and service systems, and make integrity an internal norm of employees through institutional and cultural constraints[8].

Relying on scientific management and optimized by data-driven methods: Brand building needs a full-life-cycle management system, including positioning, communication, visual identity and dynamic evaluation, and uses data tools to monitor brand health and realize lean operation [9].

Taking professional path and building focused advantages: In the cross-border competition market, strong brands stand out through professional positioning, deepen in specific fields, build technical and service barriers, and establish an "expert" image to gain customer trust and pricing power[10].

4 Strategic Dimensions and Implementation Paths of Aerospace Petrochemical's Brand Building

Brand building is a systematic project with strategic and operational attributes, which needs to be promoted in an all-round and multi-dimensional way with the joint efforts of all employees of the enterprise ^[1]. Aerospace Petrochemical should build a "four-in-one" brand building system under the group's leadership, and advance in coordination from four strategic dimensions of awareness, project, science and technology and culture, so as to form a joint force of brand building and continuously enhance the brand's influence and competitiveness:

4.1 Awareness Dimension: Consolidate the Ideological Foundation for All Staff

Awareness is the forerunner of action^[2]. On the basis of cultivating brand atmosphere through feature films, exhibition halls and other carriers, Aerospace Petrochemical should deepen four kinds of awareness: clarify the brand's value as a comprehensive competitiveness embodiment (brand theory awareness); take market orientation to optimize brand strategy (brand market awareness); establish the development concept of "long-term development by brand" (brand competition awareness); regard the "Aerospace" brand as a core strategic resource (brand asset awareness).

4.2 Project Dimension: Forge Market Reputation through Excellent Delivery

Every project is a brand display window ^[3]. Aerospace Petrochemical should build five project brand pillars through the whole project execution process: adhere to high-standard quality management (quality brand); improve project execution efficiency to reflect comprehensive strength (speed brand); empower projects with technological leadership in combustion and thermal energy fields (technology brand); encourage multi-dimensional innovation in the project process (innovation brand); expand diversified industries and build professional brand images (industry brand).

4.3 Science and Technology Dimension: Drive Brand Upgrading with Innovation Engine

Technological leadership is the fundamental support of Aerospace Petrochemical's brand, and technological innovation is the core driving force for brand upgrading ^[6]. The enterprise should strengthen the science and technology brand from four aspects: take thermal energy technology innovation as the core to formulate medium and long-term R&D strategies; build a research center and test platform to form an industry-university-research-application innovation ecosystem; optimize the talent management system to stimulate innovation vitality; build an independent and controllable technical system around combustion, control and other core fields to form a technological moat.

4.4 Cultural Dimension: Sublimate the Brand Soul through Value Resonance

Cultural brand is the high-level form of brand building^[1]. Aerospace Petrochemical's cultural gene originates from the aerospace spirit, which needs to be endowed with new connotations: combine the aerospace spirit of self-reliance and rigorous pragmatism with market and customer orientation to form a unique corporate character; systematically excavate enterprise history and project models to build a communicable brand story library; integrate aerospace elements into product design, customer communication and public welfare to realize scenario-based cultural expression and enhance brand emotional connection.

5 Breakthrough Points and Implementation Suggestions for Aerospace Petrochemical's Brand Building

On the basis of the "four-in-one" strategic framework, Aerospace Petrochemical should keep pace with the times, seize the development opportunities of the digital age and global industrial upgrading, and promote brand building from "system construction" to "efficiency release" through four breakthrough directions^[11]. At the same time, combined with the actual development of the enterprise, formulate targeted implementation suggestions to ensure the effective implementation of brand building strategies and continuously improve the brand's comprehensive strength:

Digital and experiential transformation: Build a smart brand portal integrating product display and online services, realize the online display and inquiry of products and services, and provide customers with convenient and fast online service channels^[6]; use customer behavior analysis and public opinion monitoring to realize data-driven brand optimization; apply VR/AR and digital twin technologies to create immersive brand experience in exhibitions and customer visits.

"Technology + service" dual-drive brand model: Transform from a product supplier to a solution provider^[4], build a full-life-cycle service system from consultation to maintenance; develop intelligent services such as remote equipment monitoring based on IoT and big data; establish high-standard service systems and obtain third-party certification to form service barriers.

Deepen international brand layout: Implement localized brand strategies for key overseas markets^[11]; establish cooperative relations with international engineering companies and research institutions to enhance international visibility; participate in the formulation of international standards in combustion and environmental protection fields to improve industry discourse power.

Shape a sustainable development brand image: Highlight green technological achievements in efficient combustion and waste heat recovery to build a "green thermal energy expert" image^[5]; disclose social responsibility practices in environmental protection and safe production to enhance brand reputation; build an international ESG information disclosure system to respond to global investors' concerns.

6 Conclusion

The soul of a brand is rooted in unique culture, outstanding quality and unremitting pursuit^[9]. A complete brand system is supported by three solid pillars: extensive brand awareness, a good corporate public image and a charismatic leadership team image. These three pillars are interdependent and mutually reinforcing, forming the core support of the brand's sustainable development. For Aerospace Petrochemical, the top priority is to consolidate the foundation of cultural brand based on the aerospace spirit, cultivate high-end brand taste combined with the development characteristics of the aerospace technology application industry, and build the three pillars with the joint efforts of all employees, so as to support the brand's rich cultural connotation and strong development vitality.

The brand building of aerospace technology application industry must take technological innovation as the core, market demand as the orientation and cultural connotation as the soul^[3]. This is determined by the industry characteristics of high technical threshold, strong market demand and deep cultural accumulation of the aerospace technology application industry. The "four-in-one" brand building system and four breakthrough directions proposed in this paper are in line with Aerospace Petrochemical's development reality, which can effectively promote the brand's upgrading and efficiency release. In the future, Aerospace Petrochemical should shape a brand character with aerospace characteristics and industrial aesthetics, abide by social commitments, cultivate corporate culture, and continuously optimize brand strategies with market changes, making the brand the core driving force for sustainable development.

References

1. Liu, S.Z. (2007) Brand Planning Practice. Economic Science Press, Beijing.
2. Knapp, D. (2006) The Five Steps of Brand Strategy Implementation. Enterprise Management Press, Beijing.
3. Chen, Y.G. (2004) Brand Planning/Brand Operation. China Renmin University Press, Beijing.
4. Financial Planner Editorial Department (2008) Research on Enterprise Brand Value Evaluation. Financial Planner, 5: 68-72.
5. China Entrepreneur Editorial Department (2008) The Development Trend of Chinese Enterprise Brand Building. China Entrepreneur, 6: 45-50.
6. Jiang, X.P. (2003) Network Marketing. Tsinghua University Press, Beijing.
7. Kotler, P. (2004) Marketing Management. China Renmin University Press, Beijing.
8. Drucker, P.F. (2006) The Daily Drucker. Shanghai Translation Publishing House, Shanghai.
9. Betty, R. (2002) Excellence in Branding. ISBN Press, London.
10. Iwabuchi, T. (2005) The Essence of Brand Operation. Toyo Keizai Shinposha, Tokyo.
11. Keller, K.L. (2022) Strategic Brand Management. China Renmin University Press, Beijing.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

