

Explore the Transformation Mode of Perforation Research Results by Brand Leading

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Abstract: This paper discusses how China National Logging Corporation (CNLC) promotes the transformation of perforation technology research achievements through brand building. As perforation technology is a key link in oil and gas exploration and development, CNLC Logging has effectively enhanced the popularity, recognition and influence of perforation technology in domestic and international professional fields through the establishment of the “CPPPerf” brand, which has continuously improved the value of scientific research achievements in terms of production and efficiency. The article analyzes the background of the brand creation, including the challenges since reorganization and the difficulties and confusions in the process of brand building, as well as how CNLC Logging has successfully enhanced its brand awareness and market competitiveness through the “Best Seller Strategy” and the “1+3” brand transformation strategy of scientific and technological achievements in the “Three Transformation Strategies”. In addition, the article discusses the sustainability of brand building and the necessity and must benchmarkbuilding an international first-class brand, objectively analyzes the challenges faced by CPPPerf, and expects that the brand will continue to make progress, which will provide experience and inspiration for other enterprises in the transformation of scientific and technological achievements.

Keywords: Conversion of scientific and technological achievements; brand leadership; perforating; CPPPerf.

1. Introduction

Perforation is the process of using mechanical, chemical or other energies to establish an effective communication channel between oil and gas wells and formations in the wellbore, which is known as the “final kick” in oil and gas exploration and development. China introduced this technology in the late 1940s, and after years of development, a number of domestic perforation enterprises, represented by China National Logging Corporation (CNLC), have independently researched and developed a number of perforation technologies, and constructed a complete professional industry chain integrating the research of perforation frontier theory, manufacture of perforation equipment and perforation field service, with the overall strength maintaining the leading position in the country and the advanced level in the international arena, and with some of the indexes leading the international arena.

How to transform scientific research results into an important means of generating efficiency and increasing income in the field has always been a major challenge for scientific research, and the field of perforating technology is no exception. Faced with the problems of matching technology with market demand and lower market application rate, CNLC actively seeks solutions. Since 2020, the company has selected a group of professionals from science and technology, marketing, field, publicity and other tracks to set up a perforation brand building team, which is committed to building the CPPPerf brand. This strategic initiative significantly enhances the market recognition of the company’s perforation technology, improves the application rate of the technology, and opens up a new way for the industrialization of perforation scientific and technological achievements. CNLC’s solid promotion of brand building is an effective response to the national “brand-led strategy”, and has a positive impact on the development of the perforation

profession, the upgrading of the perforation industry, and the enhancement of the value of the perforation discipline.

2. Background of Brand Creation

2.1. Challenges arising from reorganization.

The development of China’s perforation technology has been more than 70 years, with the basic technology consolidated, the innovation ability significantly improved, and the overall level maintained at a leading position. In order to further optimize the allocation of resources and enhance the level of specialization, China National Petroleum Corporation has carried out a number of professional restructuring of the perforation business, transferring most of the perforation business of the group to CNLC and setting up a perforation technology center, aiming at promoting the scientific allocation of resources, concentrating scientific research efforts on innovation and overcoming difficulties, further improving the perforation industry chain, and constructing the perforation high-end talent echelon. At present, CNLC has basically completed the construction of the whole industry chain of perforation technology research, perforation equipment production and marketing, and perforation field construction services. As the market competition is gradually “white-hot”, casting a loud professional brand is an important support condition to help CNLC’s perforation technology gain authority in the domestic professional field and compete in the international arena.

2.2. The confusion of perforation brand naming.

Before CNLC established the perforation brand, the naming system of perforation products mainly relied on a series of technical parameters, and the initial idea of perforation branding was “the product name is the function table”, which included but was not limited to the temperature, pressure, and the amount of explosives, etc. Although this

naming system is technically accurate, it brings certain obstacles to market communication. Take the product model “DP41PYX38-1A” as an example, this string of seemingly coded naming actually contains a wealth of information about the product characteristics: the caliber of 41 mm, loaded with 38 mg of PYX high-temperature explosives, and belongs to the same category as high-temperature deep penetrating shaped charge. There are more than a hundred types of perforation products, and this naming method also creates barriers for non-professional customers, increases the cost of customer awareness of the product, and reduces the efficiency of product dissemination.

In the face of the above predicament, CNLC has created the CPPerf brand, insisting that the brand empowers professional development. The CPPerf perforation brand brings together more than 100 perforation research results that can be transformed into marketable products by CNLC , including nearly 40 unique individual technologies in six major technology series, and more than 130 perforation products in 14 major product series, which can comprehensively satisfy the needs of different markets.

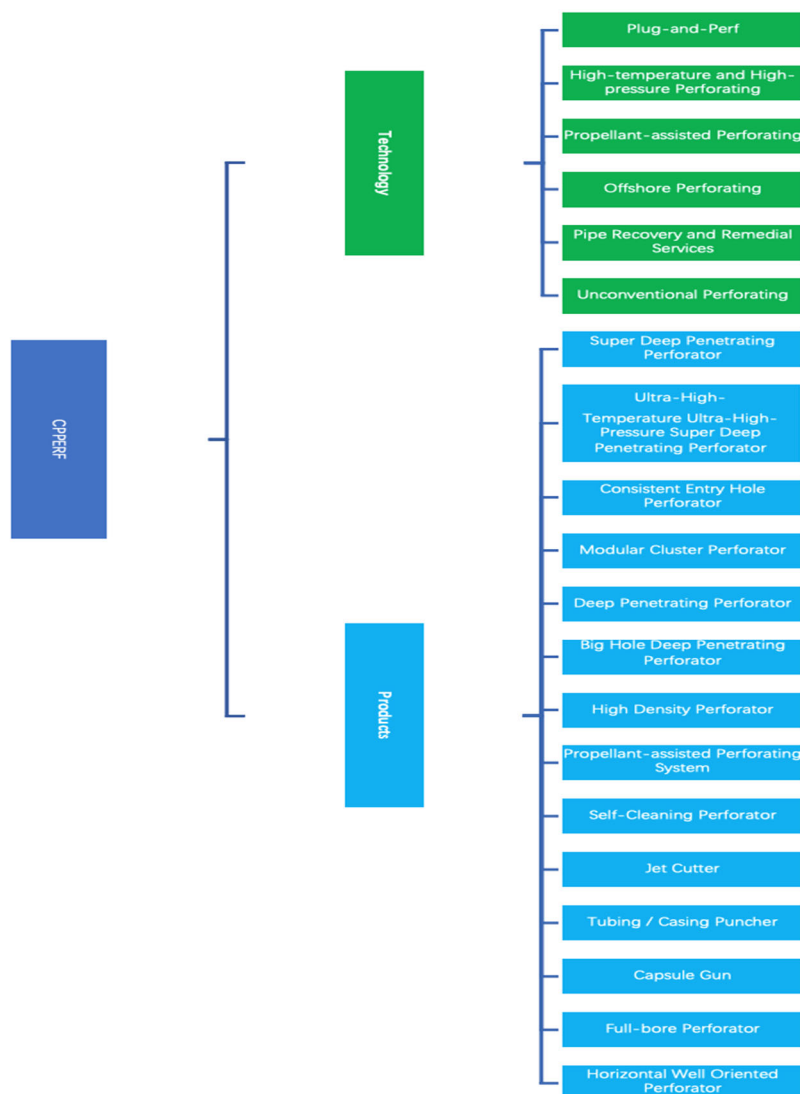


Figure 1. CPPerf Technology Framework

3. “1+3” Brand Transformation of Scientific and Technological Achievements

3.1. Best Seller Strategy, Single Point Breakthrough

After technical organization and market evaluation, CPPerf has three advantageous scientific research achievements under its banner, the technical level of which has reached the international leading level and has a high market application prospect. Including CPPerf Super Deep Penetrating

Perforator, the highest penetration depth reaches 2662mm, which has been leading the world level for more than ten years, and has been selected as an important product of independent innovation of China National Petroleum Corporation for two times; CPPerf Plug-and-Perf Technology reaches the international leading level, solving the complex problems such as low automation of traditional Plug-and-Perf .complicated and frequent downhole pumping problems and uneven transformation after perforation , and realizes the leap from zero to something and then from something to something excellent in China; CPPerf High-temperature and High-pressure Perforating technology, with the temperature

and pressure resistance of 260°C/245MPa/72h breaks through the world's highest technical indexes to meet the needs of the high efficiency drilling operation of ultra-deep wells of 10,000 meters, fully replaces the relevant foreign technologies and products, and has been selected as one of the major scientific and technological achievements in the 13th Five-Year Plan Exhibition of the State. In the early stage of brand creation, CPPPerf brand takes “Best Seller Strategy” as the core guiding principle. Concentrate all the energy and resources on the above three advantageous scientific research results for in-depth branding packaging, so that they become “a stepping stone”, showing the CPPPerf innovation strength, and significantly enhance the “CPPPerf” brand awareness in the market.

3.2. Strategy Combination, Full Bloom.

Multi-channel brand communication strategy, through a series of well-planned marketing activities, such as industry seminars, technical exhibitions, cross-media platforms to publish news, etc., to show the market its innovative features and practical application of the effect, these activities highly attracted the attention of the industry inside and outside the industry, and more so that the CPPPerf has become a benchmark in the perforation field. Customer-oriented brand maintenance strategy, building quality system to maintain product quality, focusing on market demand for applicable technologies, professional training courses to improve the level of technical services, and continue to provide high-quality products and services to ensure that customers can fully understand and apply CPPPerf technology and products. The brand transformation strategy of invisible achievements, including strategic cooperation of industry-university-research innovation consortium, customization of customer-integrated products, 24-hour on-site support by experts, transfer and licensing of intellectual property rights, and other commercialization services of invisible achievements, not only demonstrates the comprehensive strength of CPPPerf, but also promotes the exchange and transformation of knowledge and technology.

Through “1+3” - 1 Best Seller Strategy + 3 transformation strategies, we not only ensure that each scientific and technological achievement can become a powerful driving force for brand awareness, but also establish an authoritative image of CPPPerf in the market and in the minds of customers. The brand team's professional market insight, innovative brand strategy and continuous customer service have ensured that CPPPerf has steadily progressed in the fierce market competition and realized the leap from scientific and technological achievements to brand products.

4. Brand Transformation of Scientific and Technological Achievements

“CPPPerf” brand has now been recognized by CNPC, CNOOC, Sinopec, Halliburton, HUNTING and other well-known domestic and foreign enterprises, the technology has been widely used in the domestic oilfield companies and overseas 15 countries, the products are exported to the U.S., the United Kingdom and other 40 countries around the world, and has become the direct supplier of Halliburton, the world's top oil and gas service provider.



Figure 2. CPPPerf Registered Logo

In the brand building practice of CPPPerf, it is found that scientific and technological achievements and enterprise brand can promote each other, forming a virtuous cycle mechanism. The brand has gained high recognition and loyalty from the market due to its advanced scientific and technological achievements, which in turn has driven the continuous breakthroughs in the technological achievements of perforation shooting. For example, in June 2024, CPPPerf launched an innovative non-fire electric perforating tool, which quickly became a key tool for oilfield companies to improve efficiency. Meanwhile, the scientific and technological achievements have not only created reliable brand products, but also significantly enhanced the brand value and intangible assets. In recent years, the developed CPPPerf series of perforators like Consistent Entry Hole Perforator and Modular Cluster Perforator have won wide popularity in domestic and overseas markets for their advancement and reliability, and the economic and social benefits have been significantly enhanced.

The brand CPPPerf has made remarkable achievements in the exploration of the transformation of scientific research results, but the challenges are still huge. Firstly, brand building is a battle that requires long-term investment and persistence. Brand building is not a quick fix, but a long-term endeavor. To become a brand that is widely known and enjoys a high reputation in the industry, it is necessary to continuously strengthen brand building. This process requires close cooperation and joint efforts of all departments within the company to build a continuous development system from the top to the grassroots level to ensure the consistency and stability of brand building. Secondly, in order to build an international first-class perforation brand, it is necessary to have international first-class products, technologies and services as support. Although some products of CPPPerf have reached the international leading level, there is still a long way to go to make the whole series of technology and products reach this level. At the same time, it is also necessary to make all kinds of standards to “first-class”, which requires CPPPerf in the standardization of perforation construction efforts. At present, although we are making steady progress in domestic standardization, there is still a big gap to be bridged in order to lead the way in international standards. These are the two main problems facing the CPPPerf brand.

5. Summary

We hope that in the process of brand building, CPPPerf will be able to move towards a higher goal and go farther. At the same time, we also hope to use CPPPerf as a practical case of brand transformation of scientific and technological achievements, which will provide valuable experience and

inspiration for other enterprises dedicated to the transformation of scientific and technological achievements.

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