

Evaluation Research on the Value Creation Efficiency of Intellectual Capital: A Case Study of Enterprise A

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Abstract: In recent years, competition within the home appliance industry has increasingly focused on quality improvement. Market share acquisition is no longer solely dependent on product sales volume; instead, competition in areas such as human capital, resource management, and particularly intellectual capital has intensified significantly. Using Enterprise A's intellectual capital as the research object, this study applies the Value Added Intellectual Coefficient (VAIC) model to measure and evaluate the efficiency of its intellectual capital in value creation. It analyzes management-related issues concerning the intellectual capital of the enterprise and proposes corresponding strategies and recommendations.

Keywords: VAIC Model, Intellectual Capital, Value Creation Efficiency

1. Introduction

With rapid technological advancements and social development, the era of the knowledge economy has already arrived, highlighting the increasing importance of talent, management, and relationship resources on enterprises. Intellectual capital has attracted significant attention from scholars both domestically and internationally, across theoretical and applied research fields. However, research on intellectual capital in China started relatively late, resulting in limited studies specifically focusing on the efficiency of intellectual capital's value creation. Furthermore, no unified understanding has been achieved regarding intellectual capital research. The value manifestation of intellectual capital primarily revolves around fostering enterprise value growth. Quantitative methods can effectively analyze this aspect by measuring the efficiency of intellectual capital's value creation, thereby understanding the relationship between an enterprise's intellectual capital inputs and outputs. Based on the current state of intellectual capital within Haier Smart, this paper employs an intellectual capital evaluation methodology suited to the enterprise to assess its value creation and calculate efficiency. The study identifies existing problems and shortcomings and proposes targeted strategies and solutions aimed at maximizing the effectiveness of intellectual capital utilization within the enterprise.

2. Theoretical Foundation

2.1. Concept of Intellectual Capital

Initially, the theoretical origins of intellectual capital can be traced back to Senior's elaboration of value theory, attributing intellectual capital to the value transformation resulting from the knowledge

and skills of laborers [1]. However, this definition exhibits measurement limitations as it primarily focuses on intangible yet quantifiable assets such as intellectual property rights [2]. Upon reviewing relevant literature on intellectual capital, this paper adopts the widely recognized tri-dimensional framework as the theoretical basis, arguing that the formation of an enterprise's core competitiveness predominantly relies on the creative transformation of human capital. Human capital, structural capital, and relational capital collectively constitute an enterprise's intellectual capital system.

2.2. Value Creation Efficiency

The theory of value creation efficiency has attracted extensive attention since its introduction. "Efficiency" itself is defined as the amount of work completed per unit time. In the context of corporate value creation, it represents the ratio of business outcomes to the time and human resources expended. While traditional enterprise management emphasizes maximizing accounting profits or achieving the highest possible returns, value creation efficiency places greater emphasis on shareholder value. Therefore, value creation efficiency can be defined as the proportional relationship between the value generated by an enterprise and the various types of capital invested within a given period [3].

2.3. Introduction of the VAIC Model

Based on Pulic's VAIC theoretical framework, corporate value creation is conceptualized as driven jointly by physical capital (Capital Employed, CE) and intellectual capital (IC). Following the mainstream academic classification approach, this study decomposes intellectual capital into three dimensions: human capital, structural capital, and relational capital.

The implementation of the VAIC model follows a dual logic framework of value quantification and efficiency decomposition. First, the value-added (VA) metric of an enterprise is constructed using financial data, including net profits, financial expenses, human resource costs, and income tax. Subsequently, the weight of the capital structure is determined by the ratio of book value to market value, thereby deriving two core indicators: the value-added by physical capital ($VACE = VA \times \text{capital structure weight}$) and the value-added by intellectual capital ($VAIC = VA \times \text{remaining weight}$). In terms of efficiency assessment, the effectiveness of tangible assets is measured through Capital Employed Efficiency ($CEE = VACE/\text{book assets}$). Intellectual capital efficiency is further decomposed into three dimensions: Human Capital Efficiency ($HCE = VAIC/\text{human resource costs}$), Structural Capital Efficiency ($SCE = VAIC/\text{administrative expenses}$), and Relational Capital Efficiency ($RCE = VAIC/\text{sales expenses}$). Finally, a comprehensive evaluation system for an enterprise's intellectual capital value creation efficiency (VAIC) is formed by summing the total efficiency of intellectual capital ($ICE = HCE + SCE + RCE$) and the efficiency of physical capital (CEE).

3. Case Overview

3.1. Introduction of Enterprise A

Enterprise A, as a pioneer in the smart home industry, has been dedicated since the 1980s to creating intelligent living scenarios and providing customized residential experiences for global users through technological innovation. Enterprise A has achieved significant success in the research, development, production, and sales of smart home appliances and comprehensive smart home solutions. Since its establishment, the company has consistently adhered to the business philosophy of "putting customers

first, and ourselves first." In 2023, Enterprise A's overseas revenue accounted for 52%¹ of its total income, marking the first time overseas revenue exceeded domestic revenue. Moving forward, Enterprise A aims to continually provide billions of users worldwide with comprehensive household appliances and integrated home-scenario solutions.

3.2. Current Status of Intellectual Capital at Enterprise A

3.2.1. Human Capital

As of 2023, Enterprise A employs approximately 109,600 staff members. The proportion of research and development (R&D) personnel within the company has shown an upward fluctuating trend, primarily because the enterprise proactively responded to challenges posed by the COVID-19 pandemic in 2020 by enhancing collaborations with e-commerce platforms and exploring new market opportunities. The continuous growth in the number of technical staff alongside a decline in administrative personnel indicates the company's increasing emphasis on R&D and technological innovation. By 2023, employees holding bachelor's degrees or higher comprised 32.72%² of the workforce, reflecting a relatively high level of education among employees. This proportion has accelerated since 2021, clearly highlighting Enterprise A's strong emphasis on talent acquisition and development.

3.2.2. Structural Capital

Enterprise A has transformed its traditional pyramid-shaped organizational structure into innovative configurations such as an "inverted triangle" and a customer-oriented marketing chain. This new internal structure facilitates zero-distance interactions between the enterprise and its customers, enabling employees to thoroughly understand customer needs and deliver personalized services, thereby maximizing value creation [4]. Enterprise A's corporate culture encourages entrepreneurial spirit among employees, shifting from passive management to proactive entrepreneurship. The "RenDanHeYi" win-win model provides a fair platform for employees, enabling each individual to fully realize their personal value.

3.2.3. Relational Capital

Enterprise A's most influential business philosophy—"At Enterprise A, customers are leaders"—establishes a new criterion for success, which emphasizes customer loyalty and repeat purchase rates. The "RenDanHeYi" operational model embodies this philosophy. Enterprise A's continuous innovation in the smart home sector is propelling the industry toward advanced development stages. Rapid technological iterations indicate imminent breakthrough developments in this field. Additionally, the establishment of a Global Procurement Committee coordinates worldwide procurement activities, constructing an autonomous and controllable global supply chain ecosystem. Utilizing intelligent algorithms, the company dynamically optimizes global production capacities in real-time. Global factories collaboratively develop and share advancements in smart manufacturing technology, continuously enhancing manufacturing competitiveness [5].

4. Evaluation of Enterprise A's Intellectual Capital Value Creation Efficiency

This paper adopts the VAIC model to assess the efficiency of intellectual capital value creation for Enterprise A. Based on the financial data from the enterprise's 2023 annual report and taking into

¹ https://www.haier.com/smart_home/

² <http://basic.10jqka.com.cn/new/600690/company.html>

consideration the current status of financial disclosures by listed companies in China and existing research, enterprise value-added primarily flows toward shareholders, creditors, government, and employees. Specifically, value added to shareholders is represented by net profit; value added to the government is represented by income tax expenses; value added to creditors is represented by financial expenses; and value added to employees is represented by wages paid. Hence, the total value-added (VA) is the sum of these four components.

After calculations, we obtain the following results: VA = RMB 42.569 billion; VACE = RMB 18.190 billion; VAIC = RMB 24.379 billion. Subsequently, the efficiency coefficients are derived as follows: CEE = 0.19; HCE = 0.89; SCE = 1.20; RCE = 0.63; ICE = 2.72. Ultimately, the overall value creation efficiency (VAIC) for Enterprise A is calculated to be 2.98.

Upon detailed analysis of the components of intellectual capital, we find that: First, structural capital efficiency makes the most significant contribution to intellectual capital value creation, accounting for nearly 50% of intellectual capital efficiency. This is closely related to Enterprise A's innovative "inverted triangle" organizational structure. This contemporary structure enhances direct interactions between the enterprise and customers. Additionally, the customer-oriented business philosophy enables Enterprise A to rapidly identify and adapt to market demand changes, thus providing timely market insights that significantly contribute to corporate value creation. Second, the human capital efficiency is moderately positioned, primarily because basic production personnel constitute the majority of the workforce in Enterprise A. Additionally, intense competition within the intelligent appliance industry, coupled with severe attrition of high-tech talent, further limits the prominence of human capital in the overall corporate value creation process. Finally, relational capital efficiency contributes the smallest proportion to Enterprise A's overall value creation efficiency. Given the globalization and international business model, Enterprise A's supply chain extends worldwide. Consequently, issues arising at any stage of the supply chain—including manufacturing, logistics, sales, and customer service—such as interruptions in raw material supply, natural disasters, political instability, or recurring epidemics, pose significant risks. These supply chain disruptions greatly affect the enterprise's profitability.

5. Recommendations

5.1. Enhance Structural Capital to Ensure Operational Efficiency

Structural capital refers to the set of methods and systems developed by an enterprise during its long-term growth process. On one hand, enterprises should focus on cultivating corporate culture, promoting simultaneous and harmonious growth of both soft and hard capabilities. This involves integrating internal policies and cultural practices while encouraging employees to adopt unified corporate values, ensuring a clear understanding of the enterprise's strategic vision. Employees' recognition of core corporate values can enhance team cohesion and foster professionalism and collective spirit, contributing to overall corporate development. On the other hand, enterprises should establish an organizational structure suited to their management needs. A rational organizational structure and standardized corporate systems effectively eliminate hierarchical management barriers, reduce inefficiencies, and streamline daily operations. For example, the "inverted triangle" organizational structure implemented by Haier Smart Home has created a "boundaryless" internal organizational environment, reducing managerial costs, improving operational efficiency, and motivating employees to actively participate in product research and innovation, thus significantly contributing to the development of new smart products.

5.2. Consolidate Human Capital to Elevate Corporate Knowledge Level

Human capital represents the most critical component of intellectual capital. As knowledge and technological resources continue to accumulate, the management of vast amounts of data increasingly depends on human resources. Since all production and innovation activities primarily involve human effort, elevating human capital is fundamental to driving innovation. High-quality human capital is crucial to corporate growth and directly influences industrial upgrading, thereby facilitating the broader industry's advancement. Enterprises should thus proactively implement talent acquisition strategies and increase investment in human capital. By recruiting external talent, companies can address gaps in specialized knowledge and overcome knowledge-centered technological barriers, thereby enhancing competitiveness.

5.3. Strengthen Relational Capital to Ensure Supply Chain Stability

Multinational enterprises such as Haier Smart Home need to continuously enhance their core competitiveness and establish robust supply chain systems to maintain stable profitability. To ensure supply chain stability, enterprises should implement a range of measures and strategies to manage and respond to supply chain risks. First, enterprises should comprehensively identify and analyze potential risks within the supply chain, establish effective monitoring and early-warning mechanisms, and promptly recognize potential risk indicators to respond effectively. Second, close cooperative relationships should be established with suppliers and logistics providers. To ensure fair and stable cooperation, enterprises can enter into clearly defined agreements with suppliers, specifying responsibilities and obligations including delivery schedules, quality standards, and breach-of-contract liabilities. In summary, supply chain risk management is a complex, continuous process requiring ongoing evaluation, planning, response, and improvement. Through effective supply chain risk management, enterprises can minimize losses arising from risks and secure stable supply chain operations.

6. Conclusion

Improving corporate intellectual capital efficiency primarily depends on value creation in four dimensions: human capital, structural capital, relational capital, and innovation. Enhancing efficiency in these areas is critical for enterprise growth. High intellectual capital efficiency fosters innovation capabilities, optimizes talent reserves, and enhances customer networks, allowing enterprises to secure a competitive advantage in the market. This study, taking Enterprise A as a case example, has deeply analyzed its intellectual capital value and value creation efficiency and proposed targeted optimization strategies, thereby providing a valuable reference for enhancing intellectual capital value creation efficiency within the home appliance industry.

References

- [1] Hu, H. J. (2022). *Research on the driving factors of enterprise value creation of Suning.com under the O2O model: From the perspective of intellectual capital*. *Journal of Hubei University of Economics (Humanities and Social Sciences Edition)*, 19(5), 62–66.
- [2] Gong, X. G., & Shen, S. T. (2022). *The impact of three-dimensional intellectual capital on profitability: Considering market competition*. *Accounting Friends*, (5), 84–90.
- [3] Qin, H., & Wang, Y. W. (2014). *Does intellectual capital improve organizational performance? Evidence from a meta-analysis*. *Science of Science and Management of S&T*, 35(390), 154–163.
- [4] HASHIMMJ, OSMANI, ALHABSHISM. *Effect of intellectual capital on organizational performance*. *Procedia-social and Behavioral Sciences*, 2015, 211(1): 207-214.
- [5] He, G. S., & Geng, L. P. (2020). *The impact of intellectual capital on the performance of listed commercial banks: An empirical study based on the VAIC method*. *Financial Forum*, 25(3), 29–37.