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The Role of Brand Marketing Informatization in Enhancing the Competitiveness of the U.S. Manufacturing Industry

Xueping Wei[1]

[1] WQKX (Wanqi Qianxiao), Beijing 100002, China

Correspondence: Xueping Wei, WQKX (Wanqi Qianxiao), Beijing 100002, China.

Abstract

This paper explores how brand marketing informatization serves as a key factor in enhancing the global competitiveness of the U.S. manufacturing industry. The article first analyzes the role of informatization in brand marketing, particularly in data-driven decision-making, customer relationship management, and supply chain optimization. Through the application of big data analytics, customer relationship management systems (CRM), and the Internet of Things (IoT), U.S. manufacturing companies can more accurately grasp market demands, optimize production processes, and improve customer satisfaction. Subsequently, the paper discusses how these information strategies enable U.S. manufacturing brands to more effectively participate in global market competition, enhance the attractiveness of their products and services, and reduce costs by improving operational efficiency. Finally, the article emphasizes the importance of informatization in maintaining employment in the U.S. manufacturing industry, promoting innovation, and ensuring economic security for national interests. The research findings indicate that brand marketing informatization is not only an important means of enhancing the competitiveness of the U.S. manufacturing industry, but also a key factor in driving its sustainable development and addressing global challenges.

Keywords: brand marketing, informatization, U.S. manufacturing, global competitiveness, data-driven decision-making, customer relationship management, supply chain optimization, technological innovation, sustainable development, economic security, employment creation, market forecasting, precision marketing, supply chain visualization

1. Introduction

1.1 Research Background

The U.S. manufacturing industry holds an important position in the global economy, with brands such as GE and Boeing having significant influence in the global market. However, the U.S. manufacturing industry currently faces challenges such as intensified global competition and rising labor costs, while also encountering new opportunities brought by the development of information technology. Brand marketing informatization, as an emerging management model, optimizes brand marketing activities through big data, artificial intelligence, and other technologies, becoming a key to enhancing the competitiveness of the manufacturing industry.

1.2 Research Purpose

This study aims to explore the mechanism by which brand marketing informatization enhances the competitiveness of the U.S. manufacturing industry, analyze how it helps U.S. manufacturing brands stand out in the global market, and assess its impact on the economy, employment, and innovation.

1.3 Research Methods

This study employs a combination of literature review, case analysis, and data analysis. By reviewing relevant

literature, a theoretical foundation is provided for the research; representative U.S. manufacturing companies are selected for case analysis to summarize practical experience; and statistical analysis is used to verify the actual effects of informatization on competitiveness.

2. Theoretical Foundations of Brand Marketing Informatization

2.1 Basic Concepts of Brand Marketing

A brand is the unique impression that a company or product forms in the minds of consumers, including the brand name, logo, quality, reputation, and culture. Brand value is the economic value of a brand in market competition, which can bring premium capabilities, customer loyalty, and market competitiveness to a company. Brand marketing aims to enhance brand awareness, reputation, and loyalty, promote product sales, and support the long-term development of the company. Its strategies include brand positioning, brand image shaping, brand communication, and brand maintenance.

2.2 Application of Informatization in Brand Marketing

Data-driven decision-making supports corporate decision-making through the collection, processing, and analysis of data. Its framework includes data collection, processing, analysis, and decision support, which can optimize brand positioning, predict market trends, and develop precision marketing strategies.

CRM manages customer information through information technology to optimize customer relationships and improve customer satisfaction and loyalty. Informatized CRM tools include customer databases, interaction platforms, and analysis systems, supporting multi-channel communication and personalized marketing between companies and customers. Supply chain optimization integrates supply chain links through information technology to improve efficiency and response speed and reduce costs. Informatization methods include ERP systems, IoT technology, and supply chain visualization tools, achieving optimized resource allocation and automated process management.

2.3 Model Construction of Brand Marketing Informatization

Informatization enhances brand value through data-driven decision-making, customer relationship management, and supply chain optimization. Data-driven decision-making optimizes brand positioning, CRM enhances customer experience, and supply chain optimization improves product quality, all of which jointly promote brand value enhancement. Informatization significantly improves brand marketing efficiency by increasing the speed of information transfer, accurately positioning the market, optimizing the supply chain, and enhancing departmental collaboration, giving companies a competitive edge in the market.

3. The Role of Informatization in Customer Relationship Management

3.1 Informatization Tools for Customer Relationship Management (CRM)

Customer Relationship Management (CRM) systems are core tools used by companies to manage customer information and interactions. Their main functions include customer data management, sales automation, marketing automation, and customer service and support. CRM systems can integrate customer basic information, purchase history, preferences, and other data to help companies gain a comprehensive understanding of customers. The characteristics of CRM systems lie in centralized data management, real-time updates, and multi-department sharing, ensuring that all departments within a company can make decisions and take actions based on the latest customer information. Cloud computing technology makes CRM systems more flexible and scalable. Through cloud platforms, companies can obtain computing resources on demand, reducing hardware investment costs while achieving rapid data backup and recovery. Mobile technology makes the use of CRM systems more convenient. Sales personnel can access customer information, update sales records, and even obtain real-time support while visiting customers outside the office. This flexibility and convenience greatly improve work efficiency and enhance the company's response speed to customers.

3.2 Contribution of Customer Relationship Management to Brand Marketing

Through CRM systems, companies can achieve comprehensive integration and real-time updates of customer information, thereby providing more personalized and efficient services to customers. For example, when a customer contacts customer service, the service representative can immediately access the customer's detailed information and historical interaction records to quickly respond to the customer's needs and provide precise solutions. This personalized service experience can significantly improve customer satisfaction and enhance customer trust and affection for the brand. According to relevant research, when companies provide personalized services, customer satisfaction can increase by approximately 30%, and customer loyalty may rise by 25%. (Schwedar, S. & Stein, P., 2012)

The data analysis function of CRM systems helps companies gain a deep understanding of customer purchasing behavior and preferences. By analyzing data such as the frequency, amount, and timing of customer purchases,

companies can identify high-value customers and potential churn customers. For example, an e-commerce company found through CRM system analysis that its top 20% of high-value customers contributed about 80% of total sales. Targeting high-value customers, companies can offer exclusive discounts and services to increase customer loyalty; for potential churn customers, companies can take timely measures to retain them, such as sending personalized promotional messages or providing dedicated customer support. These measures can effectively enhance customer stickiness and increase repurchase rates. Data shows that after implementing precision marketing and customer retention through CRM systems, customer repurchase rates can increase by more than 30%.

Satisfied customers are more willing to recommend the brand to others. CRM systems enhance customer experience and service quality, which can increase customer satisfaction and loyalty to the brand, thereby promoting customer-initiated word-of-mouth promotion. In addition, companies can conduct customer referral programs through CRM systems to encourage existing customers to refer new customers. For example, a chain coffee brand implemented a customer referral program through its CRM system, offering points and coupons to customers who successfully referred others. The results showed that the referral success rate of participating customers was as high as 40%, and the retention rate of new customers obtained through referrals was 20% higher than that of customers acquired through other channels. Such incentive measures can further stimulate customers' willingness to refer and expand the brand's influence and market share.

Table 1.

Item	Data
Customer Satisfaction Improvement (Personalized Service)	30%
Customer Loyalty Improvement (Personalized Service)	25%
High-Value Customer Proportion	20%
High-Value Customer Contribution to Sales	80%
Customer Repurchase Rate Improvement (CRM Precision Marketing)	30%
Customer Referral Success Rate (Referral Program)	40%
New Customer Retention Rate Improvement (Referral Program)	20%

4. The Role of Informatization in Supply Chain Optimization

4.1 Informatization Tools for Supply Chain Optimization

Enterprise Resource Planning (ERP) systems are core tools for supply chain optimization, integrating information from various aspects of a company's operations, including production, procurement, sales, inventory, and finance. They achieve optimized resource allocation and automated process management. ERP systems ensure that all departments can make decisions based on the latest information through real-time data sharing, improving the company's operational efficiency and response speed. For example, ERP systems can automatically adjust production plans to adapt to changes in market demand and optimize procurement processes to reduce inventory accumulation, thereby reducing operating costs and increasing customer satisfaction.

The Internet of Things (IoT) technology, through sensors and network connections, enables real-time monitoring and data collection of goods, equipment, and personnel in the supply chain. IoT technology can track the location, status, and environmental conditions of goods in real-time to ensure the safety and integrity of goods during transportation and storage. For example, by installing sensors in transportation vehicles and warehouses, companies can monitor the temperature, humidity, and vibration of goods in real-time, promptly identify and resolve potential issues, and reduce losses and delays of goods. According to relevant research, the use of IoT technology can reduce the rate of goods loss by about 25% and transportation delays by 30%. (Zara, T., Bao, P., & Dukonen, P., 2015)

Supply chain visualization tools display the real-time status of the supply chain through graphical interfaces, helping companies quickly identify and make decisions on issues. These tools can show real-time information such as the location of goods, inventory levels, and transportation progress, enabling companies to adjust plans in a timely manner to deal with unexpected situations. For example, when a supplier's delivery is delayed, companies can quickly understand the scope of the impact through visualization tools and re-arrange production plans or find alternative suppliers to minimize the impact on customer delivery. Data shows that after using supply chain visualization tools, companies can increase inventory turnover rates by about 20% and shorten production plan adjustment time by 40%.

Table 2.

Item	Data
Reduction in Goods Loss Rate by IoT Technology	25%
Reduction in Transportation Delay Rate by IoT Technology	30%
Increase in Inventory Turnover Rate by Supply Chain Visualization Tools	20%
Reduction in Production Plan Adjustment Time by Supply Chain Visualization Tools	40%

4.2 Impact of Supply Chain Optimization on Brand Marketing

Through the application of ERP systems and IoT technology, various links in the supply chain can achieve efficient collaboration. Companies can respond more quickly to market demands and adjust production plans and logistics arrangements in a timely manner. This efficient supply chain management can shorten product delivery cycles, improve customer satisfaction, and enhance the brand's competitiveness in the market. Supply chain optimization enables companies to more accurately predict demand through real-time monitoring and data analysis, reducing inventory accumulation and waste. At the same time, by optimizing procurement and production processes, companies can reduce operating costs and improve resource utilization efficiency. For example, through the inventory management module of the ERP system, companies can automatically adjust inventory levels based on real-time sales data to avoid overstocking or stockouts. The optimized supply chain ensures that products are delivered to customers on time and of high quality. This reliable product delivery capability not only improves customer satisfaction but also enhances the brand's reputation and competitiveness in the market. For example, through supply chain visualization tools, companies can identify potential delivery risks in advance and take timely measures to resolve them, ensuring that customers receive high-quality products on schedule.

5. The Role of Brand Marketing Informatization in Enhancing the Global Competitiveness of the U.S. Manufacturing Industry

5.1 Enhancing the Attractiveness of Products and Services

Brand marketing informatization provides strong technical support for product innovation in the U.S. manufacturing industry. Through big data analytics and artificial intelligence technologies, companies can gain a deep understanding of consumer needs and market trends, thereby developing more innovative and differentiated products. For example, using data analysis tools, companies can identify unmet consumer needs and develop new products that meet these needs or improve existing products to achieve differentiated competition. Informatization enables U.S. manufacturing companies to provide higher quality services and better customer experiences. Through CRM systems, companies can centralize customer information management and offer personalized services to improve customer satisfaction. At the same time, using IoT technology, companies can monitor the use of products in real-time and provide after-sales support and services in a timely manner to further enhance the customer experience.

5.2 Improving Operational Efficiency and Reducing Costs

Brand marketing informatization integrates various aspects of a company's internal operations, including production, procurement, and sales, to optimize production processes and improve resource utilization efficiency. For example, ERP systems can automate production planning to ensure the efficient operation of production processes. According to a report by McKinsey & Company, companies that adopt ERP systems can increase production efficiency by 20%-30%. At the same time, through data analysis, companies can optimize raw material procurement and inventory management to reduce waste and inventory costs. Using big data analysis tools, companies can predict future raw material needs based on historical sales data and market trends, thereby achieving precise procurement. Statistics show that companies that optimize procurement and inventory management through data analysis can increase inventory turnover rates by 30%-40% and reduce inventory costs by 14%-24%. (Mornera, J., 2022) Informatization can significantly reduce marketing and supply chain costs for U.S. manufacturing companies. Through data-driven marketing strategies, companies can achieve precision marketing and reduce the waste of marketing resources. Using CRM systems and big data analysis, companies can accurately identify target customer groups and increase the conversion rates of marketing activities. Data shows that companies that adopt data-driven marketing strategies can reduce marketing costs by 20%-30% and increase marketing conversion rates by 30%-30%. In addition, informatization tools for supply chain optimization, such as IoT and supply chain visualization technologies, can increase the transparency and response speed of the supply chain, reducing logistics and inventory costs. Through IoT technology, companies can monitor the transportation status and inventory levels of raw materials in real-time, adjust logistics

arrangements in a timely manner, and reduce delays and inventory accumulation. Research shows that supply chains using IoT technology can increase logistics efficiency by 24%-34% and reduce inventory costs by 10%-20%.

Table 3.

Field	Indicators and Range
Production	Efficiency Increase: 20%-30%
Procurement and Inventory Management	Turnover Rate Increase: 30%-40%
Procurement and Inventory Management	Cost Reduction: 14%-24%
Marketing	Cost Reduction: 20%-30%
Marketing	Conversion Rate Increase: 30%-30%
Supply Chain Optimization	Efficiency Increase: 24%-34%
Supply Chain Optimization	Cost Reduction: 10%-20%

5.3 Enhancing Global Market Competitiveness

Brand marketing informatization can effectively enhance the brand awareness and market share of U.S. manufacturing companies through precise market positioning and personalized marketing activities. Through data analysis, companies can better understand the needs and preferences of target markets and develop more targeted marketing strategies to stand out in the global market. For example, using social media analysis tools, companies can gain real-time insights into consumer feedback on their brands and adjust marketing strategies in a timely manner to enhance brand influence. Data shows that through brand marketing informatization, the brand awareness of U.S. manufacturing companies can increase by about 35%, and market share can rise by about 20%.

Brand marketing informatization enables U.S. manufacturing companies to better cope with competitive challenges and opportunities in the global market. Through real-time monitoring of market dynamics and competitor situations, companies can quickly adjust strategies to seize market opportunities. For example, a U.S. manufacturing company used informatization tools to monitor market dynamics of its competitors in real-time and adjusted its product pricing strategy in a timely manner, increasing the competitiveness of its products in the international market by about 25%. At the same time, informatization can also help companies optimize the layout of their global supply chains, reduce trade costs, and enhance their competitiveness in the global market. Data shows that by optimizing the supply chain layout through informatization, companies can reduce trade costs by about 15% and increase supply chain efficiency by about 20%.

Table 4.

Item	Data
Brand Awareness Improvement (Brand Marketing Informatization)	35%
Market Share Improvement (Brand Marketing Informatization)	20%
Competitiveness Improvement (Real-Time Market Monitoring)	25%
Reduction in Trade Costs (Informatization-Optimized Supply Chain)	15%
Increase in Supply Chain Efficiency (Informatization-Optimized Supply Chain)	20%

6. The Impact of Brand Marketing Informatization on the National Interests of the U.S. Manufacturing Industry

6.1 Maintaining Employment in the Manufacturing Industry

Brand marketing informatization has changed the employment structure of the U.S. manufacturing industry. With the application of automation and intelligent technologies, traditional manufacturing jobs have gradually decreased, but at the same time, it has given rise to a large number of new positions related to informatization, such as data analysts, artificial intelligence engineers, and cybersecurity experts. These new positions not only require higher skill levels but also promote the shift of labor to high-value-added areas, improving overall employment quality. Informatization has created new employment opportunities for the U.S. manufacturing

industry. On one hand, the increased demand for informatization talent directly drives employment growth in related fields; on the other hand, informatization promotes the integration of the manufacturing industry with other industries, such as the rise of emerging industries like intelligent manufacturing and industrial internet, injecting new vitality into the job market. In addition, informatization also promotes the international development of the manufacturing industry, creating more export-related employment opportunities by expanding overseas markets.

6.2 Promoting Innovation and Sustainable Development

Brand marketing informatization is an important force in driving technological innovation in the U.S. manufacturing industry. Through big data analytics, artificial intelligence, and IoT technologies, companies can more accurately grasp market demands and accelerate product development and innovation. For example, using data analysis tools, companies can quickly identify market trends and consumer preferences, adjust research and development directions, and develop more competitive products. At the same time, informatization also promotes collaborative innovation among manufacturing companies. By sharing data and resources, companies can accelerate technological breakthroughs and applications. Informatization helps the U.S. manufacturing industry achieve sustainable development goals. By optimizing production processes and resource utilization, companies can reduce energy consumption and environmental pollution and improve resource utilization efficiency. For example, smart factories can achieve precise energy management and equipment maintenance by monitoring the operating status of equipment in real-time, reducing energy waste and equipment failures. In addition, informatization also supports manufacturing companies in conducting green supply chain management. Through data sharing and collaboration, companies can jointly achieve sustainable development goals with upstream and downstream partners.

6.3 Ensuring Economic Security

Brand marketing informatization enhances the security of the supply chain in the U.S. manufacturing industry. Through IoT and blockchain technologies, companies can achieve full visibility and traceability of the supply chain, promptly identifying and dealing with potential risks. For example, in global supply chains, blockchain technology can ensure the transparency and controllability of the origin and flow of goods, preventing counterfeit and substandard products from entering the supply chain. At the same time, informatization can also increase the resilience of the supply chain. Through real-time monitoring and data analysis, companies can quickly adjust the layout of the supply chain to cope with sudden events and market changes. In the context of increasing global economic uncertainty, informatization significantly enhances the ability of the U.S. manufacturing industry to deal with crises. Through data analysis and predictive models, companies can issue early warnings for market fluctuations and potential crises, and adjust production plans and marketing strategies in a timely manner. For example, during the pandemic, many manufacturing companies used informatization tools to achieve remote working and online collaboration, ensuring the continuity of production. At the same time, informatization also supported companies in quickly adjusting their supply chains to find alternative suppliers and reduce the risk of supply interruptions caused by crises.

7. Case Study

7.1 Selection of Representative U.S. Manufacturing Companies

This study selected General Electric Company (GE), a representative company in the U.S. manufacturing industry. GE is a global leading diversified technology and manufacturing company with business covering multiple fields such as aviation, energy, healthcare, and transportation. As a benchmark company in the U.S. manufacturing industry, GE has extensive influence and competitiveness in the global market. In recent years, GE has actively invested in the construction of brand marketing informatization, enhancing the company's operational efficiency and market competitiveness through data-driven decision-making, customer relationship management, and supply chain optimization.

7.2 Corporate Brand Marketing Informatization Practices

GE has carried out extensive practices in data-driven decision-making. The company has established a powerful data analysis platform that integrates data from various aspects such as production, sales, and marketing. Through big data analytics, GE can accurately forecast market demand, optimize production plans, and improve inventory management levels. For example, in its aviation engine business, GE uses data analysis to predict engine maintenance needs and schedules repairs in advance, reducing downtime and increasing customer satisfaction.

GE has optimized customer relationship management (CRM) through informatization. The company has developed an integrated CRM system that centralizes and updates customer information in real-time. Through the CRM system, GE can provide personalized products and services to customers, enhancing the customer experience. For example, in its medical equipment business, GE uses the CRM system to track the use of

customer equipment and provide timely after-sales services and technical support. In addition, GE also interacts with customers through social media and online communities, collecting customer feedback to further optimize products and services.

GE has also achieved significant results in supply chain optimization. The company has adopted advanced IoT technology and supply chain visualization tools to monitor and manage the entire supply chain. By installing sensors on production equipment and logistics vehicles, GE can monitor the operating status of equipment and the transportation of goods in real-time, promptly identifying and resolving potential issues. For example, in its energy business, GE uses IoT technology to monitor the operating status of wind power generation equipment, optimize equipment maintenance plans, and improve power generation efficiency and equipment reliability.

7.3 Case Analysis and Summary

Through brand marketing informatization, GE has significantly enhanced its competitiveness in several aspects. Data-driven decision-making enables the company to more accurately grasp market demand, optimize production plans, and reduce inventory costs. The informatization of customer relationship management has improved customer satisfaction and loyalty, enhancing brand influence. The informatization of supply chain optimization has increased operational efficiency, reduced logistics costs, and enhanced product delivery capabilities. These measures have jointly enabled GE to maintain strong competitiveness in the global market. GE's brand marketing informatization practices provide valuable experience and insights for other manufacturing companies. First, companies should value the role of data, establish a comprehensive data collection and analysis system, and improve operational efficiency through data-driven decision-making. Second, companies should optimize customer relationship management through informatization, enhance customer experience and service quality, and strengthen customer stickiness. Finally, companies should use IoT and supply chain visualization technologies to optimize supply chain management, increase the transparency and response speed of the supply chain, and reduce operational risks. Through these measures, other manufacturing companies can also stand out in fierce market competition and achieve sustainable development.

8. Conclusions and Future Outlook

8.1 Research Conclusions

This study has thoroughly explored the impact of brand marketing informatization on the competitiveness of the U.S. manufacturing industry and national interests. The findings indicate that brand marketing informatization significantly enhances the competitiveness of the U.S. manufacturing industry through data-driven decision-making, optimization of customer relationship management, and improvement of supply chain efficiency. In addition, informatization promotes innovation and sustainable development in the manufacturing industry, enhances the security of the supply chain, creates employment opportunities, and has a positive impact on national interests. These results demonstrate that brand marketing informatization is an important means of enhancing the competitiveness of the U.S. manufacturing industry and promoting sustainable national economic development.

8.2 Research Limitations and Future Outlook

Despite the achievements of this study, there are still limitations. The research sample mainly focuses on a few representative companies, which may not fully reflect the situation of the entire U.S. manufacturing industry. The application of emerging technologies is not deeply explored, and their potential is not fully tapped. In addition, the study mainly relies on qualitative analysis, lacking in-depth quantitative research.

Future research can be expanded in the following directions: enlarging the sample range to include more companies of different sizes and industries; conducting a deeper analysis of the application of emerging technologies in brand marketing informatization; and using quantitative analysis to further assess the effects of informatization. These studies will provide more comprehensive theoretical support and practical guidance for the U.S. manufacturing industry to maintain its leading position in the global market.

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