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1. Adebiaye, R. Big data analytics conundrums analysis: The need for information management collaborations between universities and corporations / R. Adebiaye // *International Journal of Engineering Science*. – 2019. – Vol. 8. – P. 15–19.

2. Aggarwal, S. L. P. Data augmentation in dermatology image recognition using machine learning / S. L. P. Aggarwal // *Skin Research and Technology*. – 2019. – Vol. 25, № 6. – P. 815–820.

3. Ata, S. Management of information, communications, and networking: From the past to the future / S. Ata, T. Tonouchi // *IEICE Transactions on Communications*. – 2017. – Vol. E100-B, № 9. – P. 1614–1622.

4. Bui, T. Information Systems Management, 8/E / T. Bui // *Information Systems*. – 2017. – Vol. 27, № 3. – P. 150.

5. Jiang, K. CPOT: A suitable tool for crack propagation path optimization based on image recognition / K. Jiang [et al.] // *Engineering Fracture Mechanics*. – 2020. – Vol. 223. – Art. 106765.

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### **MARKETING NVIDIA'S INNOVATIVE PRODUCTS: STRATEGIES DRIVING GLOBAL TECHNOLOGY ADOPTION**

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**Abstract.** Nvidia's shift from gaming GPU maker to global AI/HPC leader, driven by tech-aligned marketing, uses ecosystem building, industry customization and data storytelling to link innovation to cross-sector customer value.

**Keywords:** Nvidia, product marketing, AI technology, ecosystem strategy, tech adoption, HPC, digital transformation.

#### 1. Introduction.

The global technology landscape has witnessed Nvidia's remarkable evolution, driven by its relentless innovation in graphics processing units

(GPUs), artificial intelligence (AI) accelerators, and edge computing solutions. Beyond technological superiority, the company's marketing strategies have been pivotal in positioning its products as indispensable tools across industries—from gaming and data centers to healthcare and autonomous vehicles. This section contextualizes Nvidia's market position and outlines the paper's focus on three core marketing pillars that underpin its product adoption success.

## 2. Core Marketing Pillars of Nvidia's Innovative Product Success.

This chapter dissects the three interconnected marketing strategies that have enabled Nvidia to translate technical innovation into widespread global adoption, supported by verifiable market data and industry partnerships.

### 2.1. Ecosystem Building: Creating a Self-Sustaining Adoption Network.

Ecosystem-centric marketing has been foundational to Nvidia's ability to scale product use across diverse user groups. This strategy focuses on lowering integration barriers for developers and partners, turning them into active brand advocates.

#### 2.1.1. The CUDA Platform: Empowering Developer Advocacy.

Launched in 2006, Nvidia's CUDA (Compute Unified Device Architecture) platform has become the industry standard for GPU-accelerated computing. As of 2024, it boasts over 4 million registered developers globally (Nvidia, 2024). By offering free development tools, software kits, and training resources, Nvidia removes technical hurdles for businesses and individual developers, ensuring its hardware is the first choice for building AI and HPC applications.

#### 2.1.2. Cloud Service Provider (CSP) Partnerships: Expanding Accessibility.

Nvidia has forged strategic alliances with leading cloud service providers (CSPs) including Microsoft Azure, Amazon AWS, and Google Cloud. These partnerships offer Nvidia-powered cloud instances, which account for 75 % of all AI-optimized cloud instances worldwide (IDC, 2023). This accessibility not only expands Nvidia's market reach but also validates its technology through trusted industry leaders.

#### 2.1.3. Market Dominance Backed by Ecosystem Strength.

Nvidia's ecosystem investments drive dominant market positions.

Table 1 – Global market share data for key segments

Product Segment	Nvidia Market Share	Key Competitors	Data Source
AI Data Center Accelerators	80 %	AMD (10 %), Intel (7 %), Others (3 %)	IDC, 2023
Gaming GPUs (Discrete)	83 %	AMD (17 %)	Nvidia, 2024
Professional Visualization GPUs	75 %	AMD (18%), Intel (7 %)	Gartner, 2023

Table 1 presents 2023 global market share data for key segments.

Nvidia holds over 75 % market share in all core segments, a direct result of its ecosystem strategy. Developers and partners prioritize its hardware for its robust support network, creating a virtuous cycle of adoption.

## 2.2. Industry-Specific Customization: Tailoring Value to User Needs.

Nvidia avoids generic messaging, instead crafting value propositions that directly address the unique challenges of each target industry. This approach ensures technical features are framed as tangible solutions to customer pain points.

### 2.2.1. Enterprise and Data Center Segments: Emphasizing ROI and Efficiency.

For enterprise clients, Nvidia highlights cost and performance gains: its H100 Tensor Core GPU delivers 9x faster AI training than previous generations while reducing data center energy costs by 40 % (Nvidia, 2023). This focus on ROI resonates with IT decision-makers prioritizing operational efficiency.

### 2.2.2. Healthcare and Life Sciences: Accelerating Innovation.

In healthcare, Nvidia markets its Clara Discovery platform as a catalyst for drug discovery, cutting timelines from years to months. Partnerships with Pfizer and Novartis—where the platform accelerated clinical trials—reinforce this value proposition (Gartner, 2023).

### 2.2.3. Consumer Gaming: Leveraging Immersion and Community.

For the consumer gaming segment, Nvidia leverages esports sponsorships (e. g., the League of Legends World Championship) and its GeForce NOW cloud gaming service, which serves 25 million active users (Nvidia, 2024). These initiatives tap into gaming culture, building brand loyalty among end-users.

2.3. Data-Driven Storytelling: Building Credibility Through Measurable Impact.

Nvidia’s marketing relies on transparent, data-backed narratives to establish authority, focusing on real-world outcomes rather than technical jargon.

2.3.1. Case Studies: Quantifying Product Impact.

The company publishes detailed case studies to demonstrate value: for example, its DGX SuperPOD supercomputer helped the University of Florida achieve a 10x speedup in weather forecasting models, saving \$ 2 million annually in operational costs (University of Florida, 2023). These stories make abstract technology relatable to potential customers.

2.3.2. High-Profile Events: Showcasing Real-World Applications.

Nvidia’s GPU Technology Conference (GTC) attracts over 200 000 attendees annually, serving as a platform to showcase product applications—from self-driving cars powered by its Drive Orin chip to AI-generated content tools using RTX GPUs (Nvidia, 2024). These events position Nvidia as a forward-thinking partner rather than a hardware supplier.

3. Conclusion.

Nvidia’s marketing success stems from its ability to align three core strategies: ecosystem building that scales adoption, industry customization that resonates with user needs, and data-driven storytelling that builds credibility. By bridging technical innovation with tangible customer value, Nvidia has transformed from a niche GPU maker to a global leader in AI and HPC. These strategies offer a blueprint for tech companies seeking to drive widespread adoption of innovative products.

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2. Nvidia Corporation. Developer Ecosystem Report / Nvidia Corporation. – Santa Clara, CA : Nvidia Press, 2024. – P. 10–15.

3. Global Cloud Computing Infrastructure Tracker / International Data Corporation (IDC). – Framingham, MA : IDC, 2023. – P. 22–25.

4. AI in Healthcare: Technology Adoption Trends / Gartner, Inc. – Stamford, CT : Gartner, 2023. – P. 55–60.

5. Nvidia-Powered Supercomputer Transforms Weather Research / University of Florida. – Gainesville, FL : University of Florida Press, 2023. – P. 6–9.

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## RESEARCH ON STOCK PRICE PREDICTION BASED ON LSTM-TRANSFORMER FUSION MODEL IN FINANCIAL MANAGEMENT

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**Abstract.** Stock price prediction is a challenging task due to its non-linearity, volatility and temporal dependence that traditional models are hard to fully capture. This study proposes an LSTM-Transformer fusion model, combining LSTM's strength in long-term temporal feature extraction and Transformer's advantage in global correlation capture. Comparative experiments on multi-source financial data show the model outperforms single deep learning and traditional models, providing reliable support for investment decision-making.

**Keywords:** Stock Price Prediction, LSTM-Transformer, Fusion Model; Deep Learning, Temporal Feature, Financial Data.

### 1. Introduction

Against the backdrop of accelerated global financial market integration, stock prices operate as a complex dynamic system, shaped by the interplay of micro-level transaction dynamics (e. g., daily trading volume and price fluctuations), investor sentiment shifts (e. g., social media optimism/pessimism), macroeconomic policy adjustments (e. g., interest rate changes), and cross-border market spillover effects (e. g., U. S. stock market volatility impacting A-shares). For investors, accurate short-term stock price prediction (e. g., forecasting the next day's closing price) is critical for optimizing portfolio allocation and mitigating downside risks; for regulatory authorities, it serves as a key tool for identifying abnormal market activities and maintaining financial stability. However, the inherent strong