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Research Article

The Role of Design Thinking, Critical Thinking and Innovation in Apple's Market Leadership

Dr. Supreet Kaur Sahi [1] Dr. Vandana Kalra[2*] Manpreet Singh Khurana[3]

[1] *Assistant Professor, Department of Computer Science, Sri Guru Gobind Singh College of Commerce, University of Delhi, Supreetkaursahi@sggscc.du.ac.in*

[2*] *Associate Professor, Department of Computer Science, Sri Guru Gobind Singh College of Commerce, University of Delhi, vandana.kalra@sggscc.du.ac.in(Corresponding Author)*

[3] *Senior Manager, Capgemini Technology Services India Limited, Delhi, India, khuranamsingh@gmail.com*

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ABSTRACT

Apple Inc. applies innovation for improving different features like blending iPod and phone features to create the iPhone, replacing Touch ID with Face ID for better security, changing its chip architecture from Intel to Apple Silicon, eradicating headphone jacks to push wireless technology, and reversing traditional product interactions with gesture-based navigation. This innovation has helped Apple in maintaining its market leadership and user-centric design approach.

This research paper surveys the way Apple Inc. has maintained its competitive edge after applying design thinking, critical thinking, and innovation. This work will also analyze and present the impact of Apple's ecosystem, the use of SCAMPER model, and how strategic decisions are shaping different industry trends by reviewing Apple's user-centric methodology. The findings provide understanding about Apple's product expansion mechanism, customer retention, and future innovation developments. A case study methodology is used in this paper by presenting comparison of Apple's innovation strategy with its competitors.

Keywords: Artificial Intelligence, Digital Solution, SCAMPER, Strategic, Universal Clipboard

INTRODUCTION

Businesses and organizations are constantly facing growing pressure to remain competitive, drive innovation, and adapting to constantly changing consumer needs in the era of globalization. Structured approach is provided by design thinking to solve complex problems by understanding user needs, brainstorming creative solutions, and testing patterns (Bender-Salazar, 2023). Unconventional solutions are explored by innovation design which encourages out-of-the-box thinking. Critical thinking helps in evaluating information logically and hence supports better decisions based on evidence generated by analysis of information. Organizations that uses these methodologies develops user- centric products and services that matches with customer expectations. The combination of Critical Thinking, Design Thinking, and Innovation Design is a transformative force across industries (Eradatifam et al., 2020). Critical Thinking will assist professionals with analytical skills to explain complex business challenges and avoidance of poor decision-making. Evidence-based medical decisions in healthcare sector and assessing market risks in financial sectors are examples of critical thinking. Design thinking encourages collaboration across different teams like engineering, marketing, business strategy, and user review (Loewe, 2019). Due to interdisciplinary approach products are created that are technically sound and accessible. In order to have insightful digital solutions industries are undergoing digital transformation by integration of different technologies like Artificial Intelligence, Block chain, Machine Learning with the help of design thinking(Aldoseri et al., 2024).

The SCAMPER model presented in different case studies is a creative problem-solving technique that encourages organizations to study new concepts and innovations by applying seven approaches that includes Substitute, Combine, Adapt, Modify, Put to another use, Eliminate, and Reverse (Bhasin, 2021). Substitution approaches

have been explored by organizations to use alternative materials or methods in product design. Substitution of traditional materials with sustainable alternatives for eco-friendly product innovations is an example for same. Combination of features from different products or concepts can also result in innovative solutions. Merging the functionalities of a phone and a camera to create smartphones with advanced photography capabilities is one of instance of same. Adapting strategies from one industry to another can assist in organization growth. One of the common application used by different organizations is modification of existing workflows or procedures to enhance productivity. Use of existing tools for alternative educational uses is explored by educational researchers. Using social media platforms to enable collaborative training to employees is one of example of same(Loewe, 2019). Studies have shown the usage of elimination of redundant steps for streamlining training process. In order to encourage innovation business management are reversing traditional roles or processes. Use of bottom-up approach instead of typical top-down decision-making process to encourage employee participation is one of the such case. The versatility of SCAMPER technique's makes it applicable across different domains that includes product development, process optimization, education, and business strategy (Xia et al., 2025).

Design thinking is a human-centered approach to development that believes in combination of the needs of people, the potentials of technology, along with different business requirements. One of the reason of popularity of Apple Inc. is its ability to disrupt its competitors through technological advancements and innovative product design(Odedina, 2024). Steve Jobs emphasized that design is not just about study of layouts but instead it is about how a particular product works, which leads to revolution in inventions like the iPhone. The SCAMPER model (Substitute, Combine, Adapt, Modify, Put to another use, Eliminate, Rearrange) is a strategic creative thinking technique used by Apple. Elimination of physical keyboards and use of touchscreens, is a big revolution in the industry(kmetcalfe@cwsi.co.uk, 2024).

Industry norms are continuously challenged by Apple by applying different assessment methods on existing technologies. The removal of the headphone jack was a forward-thinking decision that pushed the adoption of wireless audio is one of example of critical thinking. Apple's success is driven by its closed ecosystem, where hardware, software, and services work seamlessly. This integration fosters customer loyalty and ensures smooth product transitions(Ketan, 2024).

This study employs a qualitative case study approach, analyzing Apple's innovation strategies through secondary data sources such as market reports, industry analyses, and academic literature. Comparative analysis with competitors like Samsung and Google is used to highlight Apple's unique approach to design and innovation. The research relies on qualitative data analysis to examine key trends in Apple's innovation strategies and their impact on market performance(Zhang, 2017).

FINDINGS & DISCUSSION

Table 1: Comparative analysis based on Business Model and Market Positioning

Feature	Apple	Samsung	Google
Business Model	Premium pricing, high brand loyalty	Mass-market approach, diverse price range	Service-driven, data monetization
Revenue Source	Hardware sales, App Store, subscriptions	Hardware sales, software partnerships	Advertising, cloud services, subscriptions
Market Position	Luxury brand, customer retention-focused	High volume, diverse price points	AI and cloud-based innovation

Table 2: Apple's Innovation Strategy: A Design Thinking Approach

Features	Explanation
Apple Uses Design Thinking to Solve Problems	Apple prioritizes user experience by simplifying interfaces and integrating seamless hardware-software interactions. For example, Face ID replaced fingerprint authentication for a smoother experience.
Role of SCAMPER in Apple's Product Evolution	Apple applies SCAMPER in various ways, such as eliminating CD drives to encourage digital storage, and adapting iPod technology to create the iPhone.
Strategic Innovation Approach	Apple's ecosystem—spanning iPhone, Mac, iCloud, and App Store—creates a lock-in effect that enhances user retention.

Table 3: Ecosystem and Software Integration

Feature	Apple	Samsung	Google
Ecosystem Strength	Unifor (Mac, iPhone, iPad, Watch)	Android-based but divided	Cloud-based, services-first methodology
Operating System	iOS/macOS (closed ecosystem)	One UI (User Interface) (customized Android)	Android (open-source) & Chrome OS
AI Assistant	Siri AI capabili	Bixby (less popular)	Google Assistant (industry-leading AI)

From the table [1-3] it can be summarized that Apple follows a premium pricing strategy, focusing on brand loyalty, ecosystem lock-in, and exclusivity (Manikas & Hansen, 2013). Unlike Google and Samsung, Apple makes most of its revenue from hardware sales and services (App Store, iCloud, Apple Music). Apple focuses on a unified, minimalist design, ensuring a seamless experience across all its devices. Its ecosystem encourages customers to remain within the Apple environment (iPhone, Mac, iPad, Apple Watch, etc.), offering tight hardware-software integration(Hyrynsalmi et al., 1 C.E.). The strategies applied by Apple as shown in above tables [1-3] based on comparative analysis, design thinking and ecosystem clearly shows Apple focus on application of SCAMPER methods in different planning and strategy implementation. Apple provides a closed, tightly integrated ecosystem, making it harder for users to change between brands. Different Features like AirDrop, Handoff, Continuity, and Universal Clipboard provide a perfect cross-device experiences (Chen et al., 2021). Table 4 gives brief summary of application of SCAMPER method by Apple.

Table 4: SCAMPER Method Used by Apple

Substitute	Replaced Touch ID with Face ID
Combine	Apple Silicon chips integrating CPU & GPU
Adapt	Apple Watch features from iPhone
Modify	Modified MacBooks with M1/M2 chips, iOS updates optimizing battery life
Put to Other Use	Siri extended to HomePod, CarPlay
Eliminate	Removed headphone jack, home button, CD drive
Reverse/Rearrange	Gesture-based navigation replacing home button

CONCLUSION & FUTURE IMPLICATIONS

Through design thinking, Apple highlights empathy, problem-solving, and continuous improvement techniques, which is visible in innovations like Face ID, Apple Silicon chips, and the iPhone's intuitive UI. The application of SCAMPER methodology allows Apple to upgrade and evolve its products strategically, eradicating outdated features and introducing new ones that boost user experience. Additionally, Apple's ecosystem lock-in strategy ensures high customer retention by offering interconnected products and services.

However, Apple's premium pricing and closed ecosystem pose challenges of limiting accessibility and user flexibility. The removal of essential features (e.g., headphone jack, charging ports) has sparked criticism, yet these decisions align with Apple's long-term vision of pushing the industry toward wireless and cloud-based solutions.

From the case study presented in this paper Design Thinking, Critical Thinking Innovation using SCAMPER methodology can be used as base for planning different strategies for organization growth.

REFERENCES

Aldoseri, A., Al-Khalifa, K. N., & Hamouda, A. M. (2024). AI-Powered Innovation in Digital Transformation: Key Pillars and Industry Impact. Sustainability, 16(5), Article 5. https://doi.org/10.3390/su1605179

Bender-Salazar, R. (2023). Design thinking as an effective method for problem-setting and need finding for entrepreneurial teams addressing wicked problems. Journal of Innovation and Entrepreneurship, 12(1), 24. https://doi.org/10.1186/s13731-023-00291-2

Bhasin, H. (2021, June 10). SCAMPER - Technique for Creative Problem Solving. Marketing91. https://www.marketing91.com/scamper/

Chen, X., Liu, Y., & Gong, H. (2021). Apple Inc. Strategic Marketing Analysis and Evaluation. 3053–3061. https://doi.org/10.2991/assehr.k.211209.499

Eradatifam, M., Heydarabadi, S., & Shahbazi, A. (2020). The Impact of Design Thinking on Innovation. Journal of Design Thinking, 1(1), 49–60. https://doi.org/10.22059/jdt.2020.76036

Hyrynsalmi, S., Suominen, A., Mäkilä, T., Knuutila, T., Hyrynsalmi, S., Suominen, A., Mäkilä, T., & Knuutila, T. (1 C.E., January 1). Mobile Application Ecosystems: An Analysis of Android Ecosystem (mobile-application-ecosystems) [Chapter]. Https://Services.Igi-Global.Com/Resolvedoi/Resolve.Aspx?Doi=10.4018/978-1-4666-9787-4.Ch100; IGI Global Scientific Publishing. https://doi.org/10.4018/978-1-4666-9787-4.ch100

Ketan, P. (2024). A case study analysis on Apple's advertising strategies to make market entry in India. International Journal of Research in Management, 6(2), 41–45. https://doi.org/10.33545/26648792.2024.v6.i2a.195

kmetcalfe@cwsi.co.uk. (2024, June 19). Whitepaper: Apple For Enterprise 2024. CWSI. https://cwsisecurity.com/whitepaper-apple-for-enterprise-2024/

Loewe, S. (2019). Toward a Critical Design Thinking: Propositions to Rewrite the Design Thinking Process. Dialectic, 2(2). https://doi.org/10.3998/dialectic.14932326.0002.208

Manikas, K., & Hansen, K. M. (2013). Software ecosystems – A systematic literature review. Journal of Systems and Software, 86(5), 1294–1306. https://doi.org/10.1016/j.jss.2012.12.026

Odedina, C. (2024). Apple as a Brand; a Detailed Analytical Approach (SSRN Scholarly Paper No. 4927999). Social Science Research Network. https://doi.org/10.2139/ssrn.4927999

Xia, N., Haron, S. H., Huang, Y., & Niu, R. (2025). The effectiveness of CPS+SCAMPER teaching mode and strategies on student creativity. Thinking Skills and Creativity, 56, 101758. https://doi.org/10.1016/j.tsc.2025.101758

Zhang, Q. (2017). Research on Apple Inc's Current Developing Conditions. Open Journal of Business and Management, 6(1), Article 1. https://doi.org/10.4236/ojbm.2018.61003